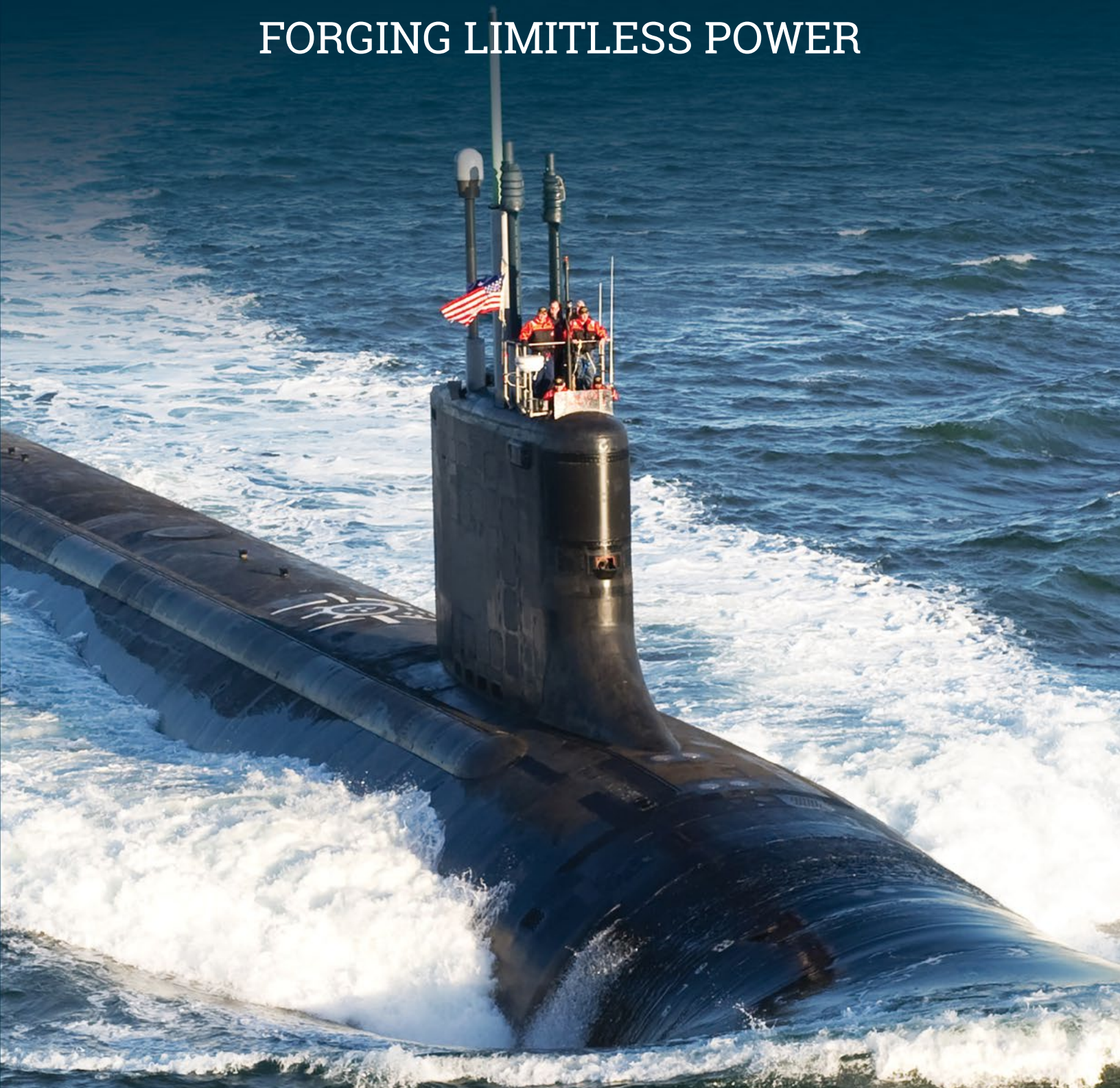


# ENLISTED NUCLEAR PROPULSION

FORGING LIMITLESS POWER



A M E R I C A ' S  
**NAVY**



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# THE NAVY AND NUCLEAR POWER

Naval Nuclear Power has a long, proud history starting with USS Nautilus (SSN-571) in 1955 and continuing through the new Virginia class attack submarines and Ford class supercarriers operating throughout the world today. Nuclear power provides the Navy with near limitless power to operate submarines and aircraft carriers wherever needed in the world.

The qualifications are demanding, but for a select few, the rewards are unsurpassed. Making the grade takes effort, even from the most qualified, but the feeling of making it to the top is unequalled. Qualifying Nuclear Sailors receive an Enlistment Bonus. If you want responsibility and are capable of working under pressure, join the Navy's Nuclear Field Program.

The new generation of naval vessel ushered in by USS Nautilus (SSN-571) in 1955 is still leading the way. The nuclear powered vessels of today's Navy are larger, faster and technologically advanced beyond the wildest dreams of the first nuclear Sailors.

The commissioning ceremony of USS Ohio (SSBN-726) on Nov. 11, 1981 was a milestone for the Nuclear Navy. Ohio, the first ship of the Trident class, was the largest and most powerful U.S. submarine ever built.

The future of the Navy submarine force will rely on the very latest technology as the Seawolf class, Virginia class and Los Angeles class submarines take their place in the fleet. These weapons, and the crews that man them, will lead the submarine force into the 21st Century with confidence and power.

With all of the Navy's aircraft carriers and submarines powered by nuclear energy, there are plenty of opportunities for those who wish to excel in this career field. If you are a mature person, ready to accept responsibility and capable of working well under pressure, you may be on your way to qualifying for the Navy's Nuclear Field Program.

Qualifying Nuclear Sailors have the opportunity to select their own enlistment incentive, the best available to any Navy program. You may choose a College Fund, an Enlistment Bonus, or a combination of the Enlistment Bonus and Navy College Fund. If you are up to the challenge, the choice is yours.



**USS Nautilus (SSN-571)**



**USS Ohio (SSBN-726)**





# TRAINING

Once accepted into the Naval Nuclear Power Program you will enter the Navy as a Seaman E-3, already ahead of many of your counterparts in other fields. Your first step will be to complete Basic Training at Great Lakes, IL. During this two-month program you will be training with new Sailors from many other fields and programs.



After completing recruit training, you will travel to Charleston, SC for Nuclear Field (NF) "A" School. You will live in college dorm-style rooms with recreational activities at the base for your initial training in your specialty. Depending on the rating for which you are selected, you will spend from three to six months in NF "A" School. Upon graduation you may be advanced to Petty Officer Third Class (E-4).

While you will be quite busy with your studies in Charleston, there will still be opportunities to explore this historic city.

Founded in 1670 as Charles Town, the city has seen much change, including relocation from the first location three miles up the Ashley River. Charleston is a town that embraces the future, making it a perfect home for the Navy's nuclear training schools.



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# NUCLEAR POWER SCHOOL

The next step on the journey toward nuclear qualification takes you to Nuclear Power School (NPS), located on the same campus as NF "A" School in Charleston. Training ramps up for six months of college-level education in the math and science of reactor operation. Nuclear Power School provides a comprehensive understanding of a pressurized-water naval nuclear power plant, including reactor core nuclear principles, heat transfer and fluid flow, plant chemistry and materials, mechanical and electrical systems, and radiological control. Some of the subjects you will explore during the six months of NPS include: mathematics, thermodynamics, physics, electrical theory, chemistry, engineering materials, reactor plant technology, radiation controls and reactor principles.



## Mathematics

This course is intended to establish a common level of understanding of arithmetic, algebra, trigonometry, logarithms, analytical geometry, and calculus. It assures that everyone has the background to manipulate equations and mathematical derivations necessary to understand the physics behind nuclear power and the operation of a nuclear propulsion plant.



## Physics

This course in basic physics contains topics that are important in the later study and understanding of atomic and reactor physics. Emphasis is placed on understanding physical principles and the ability to solve problems related to those principles. Upon completion of this course, students will be able to solve engineering problems analytically and systematically.



## Electrical Theory and Equipment

This course introduces important operating principles of electrical/electronic equipment in the nuclear propulsion plant. Additional training is provided in theoretical fundamentals for those specializing in the electrical/electronic ratings.



## Reactor Plant Technology

Using the groundwork of mathematics, physics, and systems instruction, this course introduces students to the fundamentals of reactor theory, design, operation and safety. Curriculum emphasizes the solution of problems and the development of reasoning ability.



## Thermodynamics

This course is an introduction to the properties of steam, basic laws of steam plant machinery, the steam cycle, and laws of heat transfer and fluid flow.



## Chemistry

This course is an introduction to the basic principles of water chemistry and chemistry control. The student will develop a working knowledge of the importance of proper chemistry in corrosion control and plant safety, as well as learn the parameters measured to control plant chemistry.



## Engineering Materials, Metallurgy

An introduction to the properties of metals, this course stresses the importance of metallurgical considerations in design and operation of nuclear propulsion plants.



## Health Physics

This course describes the properties of radiation, defines potential hazards, and develops the common sense rules for behavior in the vicinity of the nuclear propulsion plant. It includes an introduction to the equipment and methods available for measuring radiation to ensure self-protection.



## Reactor Principles

This course introduces students to the fundamentals of reactor theory, design, operation and safety procedures, stressing development of reasoning ability in support of nuclear propulsion plant operations.





# NUCLEAR PROTOTYPE TRAINING

After Nuclear Power School, you get to put the theory you learned to work while operating real nuclear reactors at Nuclear Prototype training either in Balston Spa, NY or in Charleston, SC. Here you get experience learning and operating your first reactor plant. This shows you how all the reactor subsystems work together. At the completion of Prototype Training, NF Sailors receive their first enlistment bonus, if entitled, before going to their first submarine or aircraft carrier.

For select Machinist's Mates (MMs) the path will lead to even more training at the Engineering Laboratory Technician School or Nuclear Welder's School before joining the fleet.



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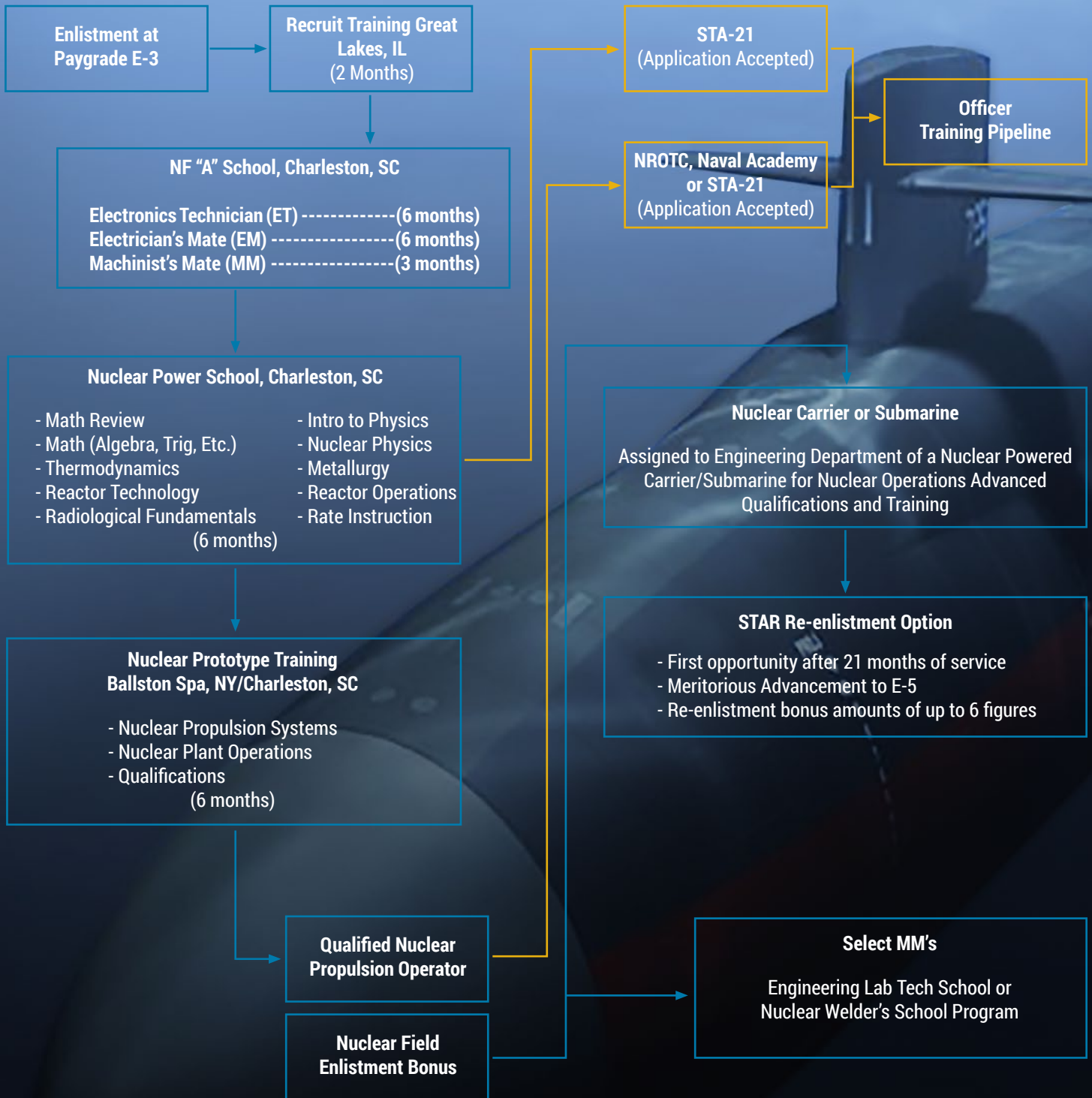
# IN THE FLEET

Above or below the surface of the world's oceans you will be a crewmember aboard one of the most modern and powerful warships in history. You will begin perfecting your professional skills on the job. While you learn, you will visit ports around the globe and learn about different cultures, all the time knowing you're ensuring the future of your own country and way of life. Every day will offer new excitement and opportunities for personal growth and achievement.



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# ASSIGNMENT AS A NUCLEAR PROPULSION PLANT OPERATOR







# LIFE IN THE NAVY SUBMARINE FORCE

The hallmark of the Navy's Submarine Force is its ability to protect national interests in a stealthy, adaptive and efficient manner anywhere the need arises. Whether it is the strategic deterrence provided by the Fleet Ballistic Missile Submarines (SSBN), or the updated Guided Missile Submarine (SSGN), providing a multi-mission capability that includes special forces deployment, to the Attack Submarine (SSN), designed to seek and destroy enemy submarines and surface ships, the submarine force is the most advanced in the world.

With the end of the Cold War, the Navy began adapting some of its largest and most capable Ohio class SSBN fleet into a platform that more effectively meets the nation's strategic needs. The Ohio class Guided-Missile Submarines are armed with tactical missiles and equipped with superior communications capabilities. SSGNs are also uniquely designed to house and deliver special operations forces wherever in the world they are needed.

SSGNs have crews of 15 officers and 144 enlisted personnel. Crew conditions aboard the SSGNs are much the same as aboard the original Ohio class SSBN.

Ohio class Trident Ballistic Missile Submarines (SSBN) are among the most capable and complex ships in the Navy. The largest of the submarine fleet, the SSBN has a crew of 15 officers and 148 enlisted personnel.

In addition to the commissioned officer and chief petty officer's quarters, each Trident submarine has 14 nine-man, U-shaped bunkrooms, serving as the crew's main living and sleeping areas.

Lounge and mess areas are equipped to show movies, or television while in port. A closed circuit audio system pipes music and other content to each of the crew bunks, similar to the system used on airliners. The library area is large enough to accommodate about eight people. The lounge area is big enough for about 15 crewmen. Physical fitness is still a priority while serving aboard a submarine and hydraulic weight equipment, pulleys, treadmills, rowing machines and stationary bikes are available. Excellent meals are served in a spacious dining facility.

The Navy also employs the attack submarine (SSN). Attack submarines are smaller, but faster and more operationally flexible than the ballistic missile submarines. The stealth and versatility of attack submarines provide an exciting opportunity for you to be involved in some of the most exciting military operations you can imagine. The Virginia, Seawolf, and Los Angeles classes are the three classes of attack submarines. The submarine force is dynamic and forward reaching in capability and design. No matter which class or platform you serve aboard, you will be joining the most elite force in the world.

The mission is primary, but it's not all work in the Navy's submarine force. During free time, movies and physical fitness are still a priority, even with less space available. Life aboard attack submarines is challenging and exciting with opportunities for overseas deployments and foreign port visits.

Whether you are steaming under the polar ice cap or enjoying liberty in a foreign port with 100 of your closest friends, your future as a member of the nuclear-powered submarine service will be filled with challenges and accomplishments unavailable anywhere else. Just remember, if you see an aircraft carrier battle group sent by the president to a hot spot around the globe, chances are a submarine is already there.



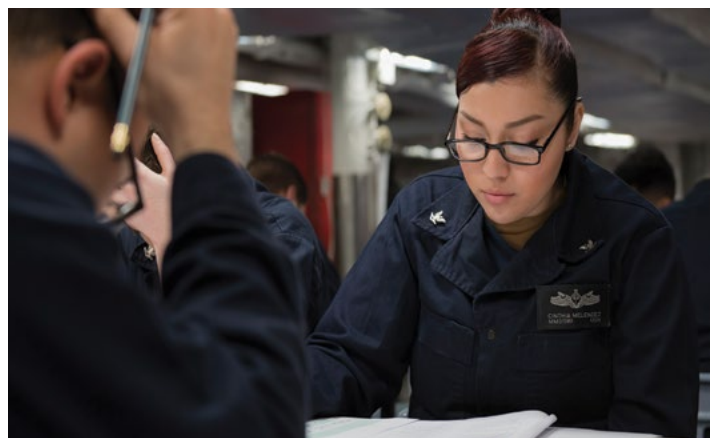


# LIFE ABOARD A NUCLEAR AIRCRAFT CARRIER

Nuclear-powered aircraft carriers are the most sophisticated ships in the world—floating towns with many of the same conveniences.

Aircraft carriers have closed-circuit television stations, studios, radio stations and newspapers. Libraries are stocked with study books, fiction, non-fiction, paperbacks and current magazines. There are even opportunities to attend accredited colleges and universities while on board.

Life aboard aircraft carriers is challenging, but exciting, with many of the same opportunities as submarines for overseas deployments and foreign port visits. Many of your shipmates may be Sailors you already know from training. They will be by your side whether you are working diligently to repair a piece of equipment or are out enjoying the festivities in a foreign port.



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# BEYOND THE NAVY

You have met the challenges of Navy life but now it is time to move back to the civilian world. You have had the best training possible and you have been successful, but what now? Will you be able to find work? Will it pay well? What about the challenge, will it be there? The answers to most of your questions will be encouraging because of the training you received as a nuclear trained Sailor.

Mike Watson of Orion International, a consulting firm that recruits people for corporations all across the U.S., said the most difficult decision most nuclear trained Sailors have to make after getting out of the Navy is where they want to live and work. "They are only limited by geographic location," Watson said. "Nuclear trained Sailors, when they separate from the Navy, are truly only limited by geographical preferences. They can go anywhere. The companies we deal with, from manufacturing to high-tech, really like employing nuclear trained Sailors," he added. "It is not so much what they already know but what they are capable of learning."



Companies all over America have been learning that Sailors who have been successful in the most challenging jobs available while on active duty remain the best of the best after leaving the military. They are valued for their leadership skills as well as their experience, according to Watson. Managers, he said, were confident placing former Sailors because of their professionalism and skill.

The outlook, according to Orion International, is good. "Many industries are facing a post baby-boom shortage of qualified candidates. This demand for qualified candidates is expected to continue...especially in the manufacturing and technical areas, due to a shortage of people with engineering, science and computer backgrounds." It is an outlook that seems especially bright for people with Navy nuclear training.



Marty Hair, Journeyman Plant Repairman  
Arkansas Nuclear One Generating Station  
Entergy Nuclear Company

Whether you complete a career in the Navy or leave after your first tour of duty, your training and experience as a Nuclear Sailor will continue to open doors to opportunity long after your return to civilian life. As one of the best-prepared technicians available your services will be in high demand in a wide variety of high-paying job specialties. Your future might lie in engineering, maintenance, design consulting or as a safety inspector, but no matter what field you choose after leaving the Navy, your skills and abilities will be your ticket to success.



MMFN Marty Hair, USN

*"The teamwork and dedication that I learned in the NAVY to power and propel a nuclear ship at 30 plus knots was the foundation for my civilian career and the teamwork that it takes to keep our nuclear units at 100 percent."*



# EDUCATIONAL BENEFITS

## American Council of Education (ACE)

- Organization recommends colleges award up to 77 credits to Sailors completing Nuclear Field "A" School, Nuclear Power School, and Prototype Training
- Must petition a college to receive the credits
- Only a few classes short of an Associate's Degree

## Advanced Technical Training

- Nuclear Field Training Pipeline is up to 22 months long
- Emphasizes understanding and application of technical concepts
- Operational experience

## Program for Afloat College Education (PACE)

- Fully funded undergraduate college courses offered aboard all Navy ships

## Servicemember's Opportunities College (SOCNav)

- Navy job experience and completed schools = college credit
- Independent study courses for college credit
- Free tests for college credit
- Full transfer of college credit between a network of 63 colleges worldwide

## Tuition Assistance (TA)

- Tuition payment for any accredited college, vocational/technical or business school courses taken in your off-duty time

## Established Degree Paths for NF Sailors

- Colleges/Universities credit Navy training toward a degree and only require a limited number of courses to be completed to receive a degree
- Some of the institutions that currently have Associate and Bachelor Degree programs established with the Nuclear Power Program include Old Dominion University, Thomas Edison State College, and Excelsior College (NY)
- For details of current degree programs, visit [www.navycollege.navy.mil](http://www.navycollege.navy.mil)





# ELIGIBILITY

The Nuclear Power Program allows those who qualify to gain a solid understanding of science and technology as well as the ability and confidence to operate advanced nuclear propulsion plants around the world. Candidates should pursue higher level math and science courses. Any sub-standard academic performance in high school may affect your eligibility. Only the most qualified candidates are selected. Basic qualifications for the Navy Nuclear Power Program include the following:

- U.S. citizenship and no dual citizenship
- High school diploma or college degree
- Successful completion of one year of high school or college algebra
- Qualifying scores on Armed Services Vocational Aptitude Battery (ASVAB) and an advanced placement test if necessary
- No older than 27 years on date of enlistment
- Meet physical standards



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# FOR MORE INFORMATION

Organization recommends colleges award up to 77 credits to Sailors completing Nuclear Field "A" School, Nuclear Power School and Prototype Training

- [navy.com/nuclear](http://navy.com/nuclear)

- 1-800-USA-NAVY

 [Facebook.com/americasnavy](https://www.facebook.com/americasnavy)

 [Youtube.com/americasnavy](https://www.youtube.com/americasnavy)



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For more information on forging opportunities in America's Navy and Navy Reserve, please visit us online at [navy.com](http://navy.com)



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