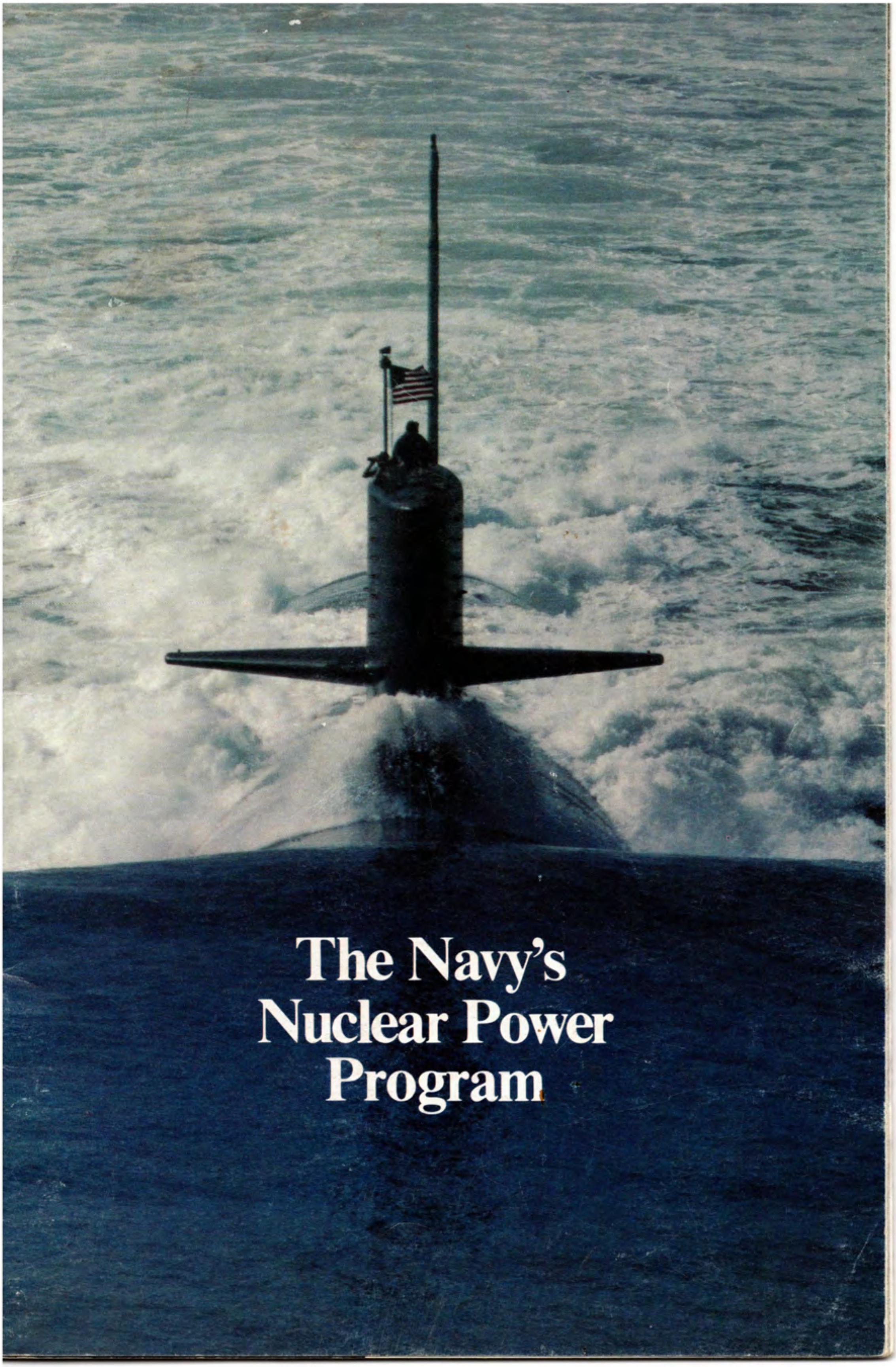
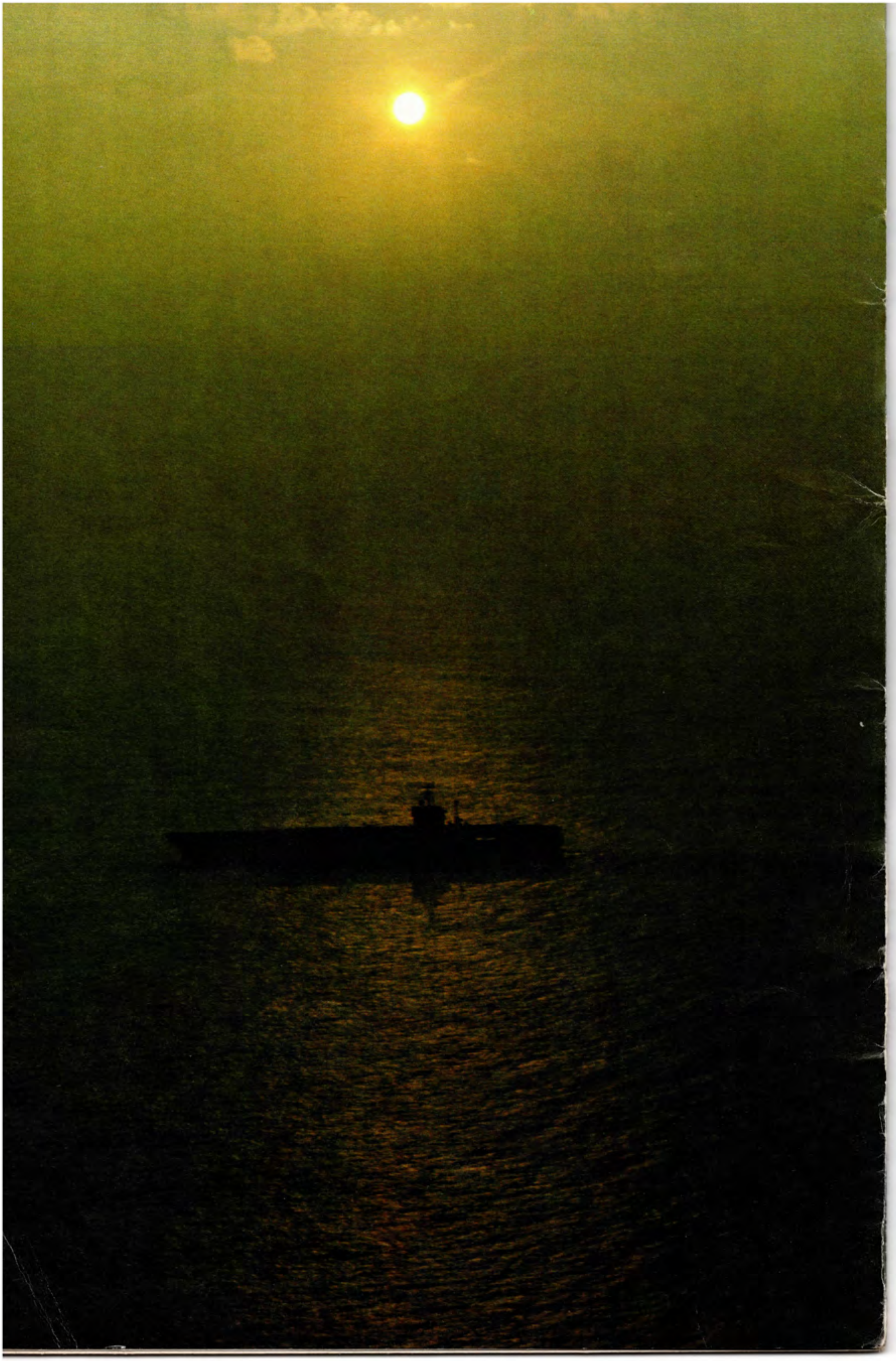


The Navy's Nuclear Power Program



An Opportunity For Success

Nuclear propulsion. Energy the world may soon depend upon. Energy that is already powering many of America's most modern, sophisticated naval ships for years without refueling.

Nuclear propulsion. A challenging field that requires special men with special abilities to perform special duties. Men with scientific minds who are willing to train hard and to work hard to achieve success.

The Navy's Nuclear Power Program offers this prestigious training to young, talented men who qualify. Training that has to be the broadest and most comprehensive available anywhere because of its uniqueness. Training that offers these special young men the opportunity to prove their individual merit, assume early responsibility and emerge as an experienced technician in a career of the future.

This booklet explains what the Navy's Nuclear Power Program is all about. We hope it will help you decide on the exciting career you've been searching for. We feel the Navy's Nuclear Power Program will also help you build a foundation of basic academic and technical training that will be valuable to you in many fields for years to come.

Opportunities in the Nuclear Power Field

The Navy's Nuclear Power Program has attractive opportunities for qualified candidates who want:

- To broaden their scientific and technical background in subjects related to nuclear engineering.
- A sound, theoretical knowledge of the principles of atomic and nuclear physics, and reactor engineering.
- A knowledge of nuclear propulsion plant design, construction, instrumentation, operation and procedures.
- A background for intelligent communications with technical and scientific personnel.
- To become reliable, competent operators of naval nuclear propulsion plants.
- To enhance their advancement and promotion potential.
- To serve in an expanding and exciting professional field that is vital to the defense of the United States.

The Navy's Nuclear Power Program offers challenging opportunities to accomplish the objectives listed above.

The design and operation of nuclear power plants require a higher level of competence than does most engineering. Therefore, all personnel assigned to operate the propulsion plants of nuclear-powered ships require special training in nuclear-power plant theory and operation. To accomplish this, the Navy, in close cooperation with the Department of Energy and civilian industry, has developed an extensive training program.

Nuclear Power Training —It's Not Easy

Candidates for the Nuclear Power Program experience one of the most rigorous and rewarding training programs in the country.

- Recruit Training (approximately 8 weeks)
- Technical Class "A" School (2-9 months)
- Nuclear Power Fundamentals Course (approximately 6 weeks)
- Nuclear Power School (6 months)
- Operational Training Prototype Plant (6 months)
- Assignment at sea (temporary assignment to sea duty for a period of 3-9 months while awaiting assignment to Nuclear Power School may be required).

Enlistment Facts and Figures

The nuclear power candidates are enlisted at the advanced pay grade of E3 (seaman). To qualify for this status they must meet the mental and physical criteria and the following eligibility requirements:

1. Be a U.S. citizen and meet security clearance requirements.
2. Meet qualifying scores on Armed Services Vocational Aptitude Battery (ASVAB).
3. Have not reached their 24th birthday upon enlistment.
4. Be a high school diploma graduate.
5. Have no record of civil or military offenses (minor offenses such as traffic violations may be waived).
6. Have attained at least a "C" average in one year of algebra.
7. Meet the other current requirements.

Candidates are eligible for guaranteed automatic advancement to pay grade E4 (petty officer third class) upon successful completion of Class A technical school training provided their eligibility to continue in the Nuclear Program is maintained. Acceptance to E4 status

automatically obligates them to serve in the Navy for 5 years.

Specifically, a candidate enlists for 4 years and signs an agreement to extend for 2 additional years to participate in the Nuclear Power Program. If he should be dropped from the program, then all or some portion of the 2-year extension may be cancelled.

If he should be dropped from the program but has already accepted advancement to E4, then all or some of his sixth year of obligated service may be cancelled depending upon how far through advanced training he has progressed. Having once volunteered, a nuclear power candidate may NOT be dropped by reason of non-volunteering.

If the nuclear power candidate is unable to complete the preliminary phase of training and did not accept automatic advancement to petty officer third class upon graduation from his technical school basic phase, the Chief of Naval Personnel will determine if the 2-year extension will remain in effect. If he is unable to complete the advanced phase of nuclear training and did not accept automatic advancement, the candidate may request that his extension be modified to require 3 weeks extension of enlistment for each week of advanced phase training received.

For all ratings (ET, EM, TC and MM) the advanced phase commences on enrollment at Nuclear Power School, Orlando, Florida.

Recruit Training

The recruit training center, or "Boot Camp," is the starting point for every sailor. During recruit training at either Great Lakes, Illinois; San Diego, California; or Orlando, Florida the candidate is indoctrinated into the Navy. He experiences the transition from a civilian to a Navyman.

He is also tested and screened and then, based on his desires, aptitude and the needs of the Navy, selected for training in one of four ratings: Machinist's Mate (MM); Electrician's Mate (EM); Interior Communications Electrician (IC) or Electronics Technician (ET).

When assigned to one of the ratings, the nuclear power candidate enjoys a dual status. He is a member of one of the Navy's general rating communities and is pursuing a special qualification in an important naval field—Nuclear Propulsion.

Technical Class "A" School

The nuclear power candidate next attends the appropriate basic Class "A" technical training school. These are:

ET school	17 weeks	Great Lakes, or Treasure Island, California
EM school	16-17 weeks	Great Lakes or San Diego
IC school	16-17 weeks	Great Lakes or San Diego
MM school	6 weeks	Great Lakes.

Nuclear power candidates are eligible for automatic advancement to petty officer third class on successful completion of basic technical school.

The curricula are basic to the ratings (MM, EM, IC or ET) and not specialized for nuclear power. These are general Navy schools, so the candidate will find himself in competition with students in other training programs.

Regarding competition, the candidate must stand in the upper two-thirds of his class to remain eligible for nuclear power training. This standard has evolved during the many successful years of nuclear power training, and has been found necessary to ensure an acceptable level of academic excellence, and to minimize attrition during nuclear power training. In this connection, statistics have shown the large majority of nuclear power candidates to be capable of standing in the upper two-thirds of their respective classes.

Personnel who fail to make these school "cuts" may apply for another technical program or they may request to have their 2-year extension of enlistment agreement cancelled. Candidates who remain eligible for the Nuclear Power Program are eligible for automatic advancement to petty officer third class (MM3, EM3, IC3 or ET3) on completion of basic technical school. Acceptance of automatic advancement obligates the candidate for 5 years of service, whether or not he ultimately completes nuclear power training.

Nuclear power graduates of technical schools may be temporarily assigned to ships of the fleet to await assignment to Nuclear Power School, and to gain basic operational experience. The duration of this "fleet pool" assignment could be from 3 to 9 months; however most candidates will be ordered to Nuclear Power School within 3 months after graduation from technical school.

Nuclear Power School

Nuclear power training consists of 3 courses: Nuclear Power Fundamentals, Basic Nuclear Power Course and the Nuclear Propulsion Plant Operators Course.

The Nuclear Power Fundamentals Course at Orlando, Florida is approximately 6 weeks in length and designed to provide instruction in mathematics, physics, problem-solving techniques and a simple introduction to power plant principles in order to prepare the student for the demanding academic phase which follows.

The 24-week Basic Nuclear Power Course, also at Orlando, includes the same scope for nuclear submarine and nuclear surface ship students. The daily routine consists of 6 hours of classroom instruction and requires additional after-hours study. Classes are held 5 days a week. A general breakdown of the enlisted course content follows:

MATHEMATICS
Topics from arithmetic, algebra, trigonometry, logarithms, analytical geometry and calculus are provided to develop the logic and analytical skill required to approach engineering problems intelligently and methodically in this and associated courses.

PHYSICS
Material is provided in the classical fields of mechanics, electrostatics and electrodynamics with emphasis on understanding the principles and developing the ability to solve practical problems.

HEAT TRANSFER AND FLUID FLOW
This course teaches the application of thermodynamics and hydraulics which are needed for an understanding of the design criteria, operating procedures and limitations of a reactor plant.

REACTOR PRINCIPLES
Introduces the student to the fundamentals of reactor theory, design, operation and safety, in order to develop his better understanding of the nuclear components of the propulsion system.

REACTOR PLANT TECHNOLOGY
Provides background knowledge in

the operation of the major systems and components of a typical nuclear propulsion plant with emphasis on the "whys?"

MATERIALS
Introduces the student to the properties of metals and acquaints him with the importance of metallurgical considerations in the design and operation of nuclear propulsion plants.

RADIOLOGICAL FUNDAMENTALS
Describes the properties of radiation, its potential hazards, the rules for behavior in radiation areas and the equipment and methods available for measuring radiation to ensure self-protection.

CHEMISTRY
Basic chemistry, reaction kinetics, radiation induced chemistry and boiler chemistry.

OPERATOR SPECIALIZED INSTRUCTION
Instruction provided for individual rating groups in the following areas:

(a) Reactor Control Operator Trainees (Electronics Technicians)
 Electronics theory

(b) Electrical Operator Trainees (Electrician's Mates, Interior Communications Electricians)
 Electrical theory

(c) Mechanical Operator Trainees (Machinist's Mates)
 Mechanical theory
 Electrical theory

The pace is fast and the subjects are presented largely at the college level. Due to the specific nature of the curriculum and the security classification of portions of the course, it is not possible to obtain transcripts or college credit information from Nuclear Power School.

There is no forced attrition at Nuclear Power School; however, a natural academic attrition does occur due to strict scholastic standards. The student will be given careful instruction and generous assistance in the form of extra instruction, but he must accept the challenge and be ready to work.

Prototype Plant Training

From Nuclear Power School, the candidate goes to 1 of 3 Nuclear Power Training Units (NPTU) located near Windsor, Conn.; West Milton, N.Y. or Idaho Falls, Idaho. There he spends 26 weeks studying and qualifying as a nuclear propulsion plant operator on one of several land-based prototype reactor plants. In this phase of training, he puts to use all that he has learned from initial schooling through Nuclear Power School.

There are two phases of instruction at NPTU. The first is 4 weeks of classroom work with weekly written exams. During the remainder of the curriculum, students are divided into four crews. Each crew works alternating 8-hour shifts in an operational prototype of a nuclear propulsion system, plus 4 hours of study time per day. There is a midterm oral exam and a written and oral final exam.

Depending on his rating, the student qualifies as a mechanical (MM), electrical (EM or IC) or reactor control (ET) watchstander. Additionally, he must display a practical and theoretical knowledge of the entire reactor plant including those areas not encompassed by his rating. When he successfully completes the training at the NPTU he is designated as a qualified nuclear propulsion plant operator.

Some selected Machinist's Mate (MM) graduates of propulsion plant operator

training are given additional training as Engineering Laboratory Technicians (ELT). The ELT training, which lasts 13 weeks, is conducted at the Nuclear Power Training Units and prepares the student to perform radiological and water chemistry control functions and associated analyses for nuclear propulsion plants.

Additionally, a small number of Machinist's Mates are selected to attend the 16-week Nuclear Propulsion Plant Operator Welder Course offered at New London, Connecticut or San Diego, California. This special welding course presents the mechanical operator with the theory and techniques of performing weld repairs on the modern metals used in submarine nuclear propulsion plants.

LAND PROTOTYPES

Submarine Advanced Reactor (S3G)	West Milton, NY
Destroyer Type Dual Reactor (D1G)	West Milton, NY
Small Submarine Reactor (S1C)	Windsor, Conn.
Large Ship Reactor (A1W)	Idaho Falls, Idaho
S1W Reactor Facility	Idaho Falls, Idaho
Natural Circulation Reactor (S5G)	Idaho Falls, Idaho
Modification and Additions to Reactor Facilities (MARF)	West Milton, NY
Trident Reactor (S8G)	West Milton, NY

Duty Assignment

After prototype training, the nuclear power candidate is ready to apply in practice the knowledge and skills gained since enlisting in the Navy. He is no longer a trainee but a nuclear propulsion plant operator.

Nuclear trained personnel are formally qualified as nuclear propulsion plant operators by commanding officers of nuclear-powered ships and Nuclear Power Training Units. The training and qualification standards are established and supervised by the Director, Division of Naval Reactors, and the Department of Energy (DOE). The nuclear operator's qualification, while sanctioned by DOE, is granted by the Navy. The nuclear power candidate will not receive a reactor operator's license from DOE.

The new nuclear propulsion plant operator will be assigned to a nuclear-powered ship and commence the productive service for which the Navy has financed up to two years of technical training. He will serve on either a nuclear attack submarine (SSN), ballistic missile submarine (SSBN), guided missile cruiser (CGN) or aircraft carrier (CVN).

Home Ports of Nuclear Powered Vessels

	CGN	CVN	SSN	SSBN*
NEW LONDON, CT			26	14
CHARLESTON, SC			10	17
NORFOLK, VA	5	2	12	
PEARL HARBOR, HI			9	10
SAN DIEGO, CA	3		16	
ALAMEDA, CA		1		
MARE ISLAND, CA			2	

*****_SSBN have advance deployment sites in Rota, Spain; Holy Loch, Scotland, and Guam. Crews fly from their home ports to these sites at time of deployment. In 1979, King's Bay, Georgia will replace Rota, Spain as an advance deployment site._

(Bremerton/Bangor, WA consists of a naval base for overhauling submarines, and the future home port of Trident submarines.)

Where Your Vessel Will be Each Typical 18-Month Operating Cycle

This table represents typically planned schedules.

<table>
<tr><th></th><th>SSN</th><th>SSBN
(One Crew)</th><th>CVN/CGN
(NUCLEAR)</th><th>CG/DDG/DD
(CONVENTIONAL)</th></tr>
<tr><td>1</td><td>POM</td><td>UPKEEP ★</td><td>POM</td><td>POM</td></tr>
<tr><td>2</td><td rowspan="6">DEPLOYED
65% Underway
35% In-Port</td><td rowspan="2">PATROL
★ ★</td><td rowspan="6">DEPLOYED</td><td rowspan="6">DEPLOYED</td></tr>
<tr><td>3</td></tr>
<tr><td>4</td><td>R & R</td></tr>
<tr><td>5</td><td rowspan="2">TRAINING</td></tr>
<tr><td>6</td></tr>
<tr><td>7</td><td>UPKEEP ★</td></tr>
<tr><td>8</td><td rowspan="2">LEAVE
&
UPKEEP</td><td rowspan="2">PATROL</td><td rowspan="2">LEAVE
&
UPKEEP</td><td rowspan="2">LEAVE
&
UPKEEP</td></tr>
<tr><td>9</td></tr>
<tr><td>10</td><td rowspan="2">LOCAL OPS
35% Out
65% In
Home Port</td><td>R & R</td><td rowspan="2">LOCAL OPS
30% Out Of
Home Port
70% In
Home Port</td><td rowspan="2">LOCAL OPS
30% Out Of
Home Port
70% In
Home Port</td></tr>
<tr><td>11</td><td rowspan="2">TRAINING</td></tr>
<tr><td>12</td><td rowspan="2">LEAVE
&
UPKEEP</td><td rowspan="2">LEAVE
&
UPKEEP</td><td rowspan="2">LEAVE
&
UPKEEP</td></tr>
<tr><td>13</td><td>UPKEEP ★</td></tr>
<tr><td>14</td><td rowspan="4">LOCAL OPS
Including
MK 48 Cert,
WSAT, ORSE
65% In
Home Port
35% Away</td><td rowspan="2">PATROL
★ ★</td><td rowspan="4">LOCAL OPS
Including
Weapons Cert,
NTPI, ORSE
FLT EX
60% In
Home Port
40% Away</td><td rowspan="4">LOCAL OPS
Including
Weapons Cert.
NTPI, PEB,
FLT EX
60% In
Home Port
40% Away</td></tr>
<tr><td>15</td></tr>
<tr><td>16</td><td>R & R</td></tr>
<tr><td>17</td><td rowspan="2">TRAINING</td></tr>
<tr><td>18</td><td>POM</td><td>POM</td><td>POM</td></tr>
</table>

★ At deployed site
★ ★ Every other patrol engages in type training, services and port visit.
(See your Navy recruiter for further explanation of naval terms and abbreviations.)

How The Nuclear Power Plant Works

Before the first nuclear submarine became a fact, the submarine was at best a hybrid. It was, in reality, a small surface ship that could submerge for very short periods of time. In 1950 the real submergence time and the average submerged speed of a submarine were not much greater than those of submarines in use 30 years earlier.

Pre-nuclear submarines using traditional fuels required oxygen to operate and to keep their crews alive. Once submerged, that oxygen supply was cut off. The boat was dependent for its power on short-lived electric batteries; its crew dependent upon the air trapped within the hull or carried in bottles or chemicals.

A nuclear reactor eliminated the combustion engines which limited a submarine's range and speed, the need for a large amount of space to store oil, and the necessity for surfacing to recharge batteries.

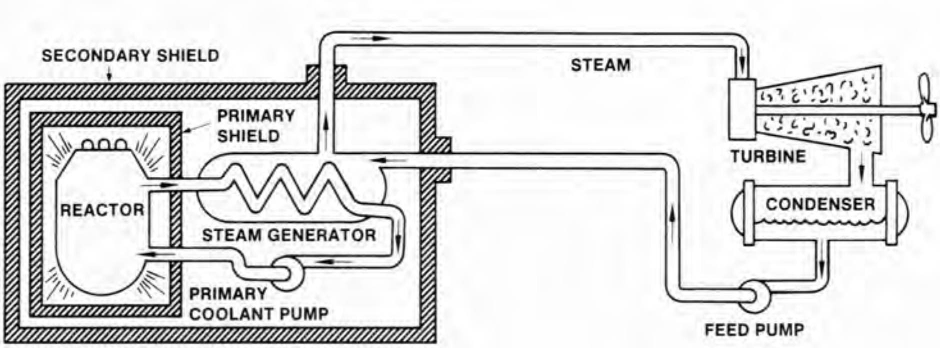
The power plant of a nuclear submarine or a nuclear surface ship is based upon a nuclear reactor which provides heat for the generation of steam. This steam drives the main propulsion turbines and the ship's turbo-generators, which provide electric power for the ship.

The primary system is a circulating water cycle and consists of the reactor, loops of piping, primary coolant pumps and steam generators. Heat produced in the reactor by nuclear fission is transferred to the circulating primary coolant water which is pressurized to avoid boiling. This water is then pumped through the steam generator and back into the reactor by the primary coolant pumps for reheating.

In the steam generator the heat of the pressurized water is transferred to a secondary system to boil water into steam. This secondary system is isolated from the primary system so that there is no radioactivity in the steam plant.

From the steam generators, steam flows to the engine room where it drives the turbo-generators which supply the ship's electrical needs, and the main propulsion turbines which drive the propeller. After passing through the turbines the steam is condensed, and the water is fed back to the steam generators.

There is no step in the generation of this power which requires the presence of air or oxygen. This fact alone allows the ship to operate completely independently from the earth's atmosphere for extended periods of time. Add to this the independence of nuclear power, and the result is increased time-on-station and flexibility in operations with surface ships.



Nuclear Training and Education Continues

As in other fields, commencement of productive employment does not mean the end of education and training. The nuclear operator must qualify on the specific nuclear propulsion plant which drives his ship. If assigned to a submarine, he must in addition study the entire ship and earn the designation, "Qualified in Submarines." As he gains familiarity with his vessel and his specific duties, the nuclear operator will mature as a technician.

With advancement in rate, he will also gain stature as a leader. His talents will be increasingly channeled toward the supervision and instruction of the junior men in his shipboard department.

In addition to nuclear training and other educational opportunities, personnel serving in submarines are eligible for submarine pay, which varies from $55 to $105 a month, depending on rate and time in service. Reenlistment bonuses up to $15,000 are also available for nuclear personnel at almost any point in the first 10 years of their Navy career.

Through the Navy Campus for Achievement (Navy Campus), a wide field of educational opportunities is offered. College courses at civilian institutions, correspondence courses, advanced technical schools, Program for Afloat College Education (PACE), or the Veterans Educational Assistance Program (VEAP) whereby you can amass a total of $8,100 toward future education in or out of the Navy. Traditionally, qualified nuclear-trained personnel have enjoyed active participation in these programs.

Perhaps the most important rewards in nuclear power are intangible. Pride in accomplishment, the thrill of challenge, or the value of professional and personal maturity cannot be measured. But, to the nuclear propulsion plant operator, these are the real rewards of his profession.

TODAY'S NAVY COMBATANT FORCES

The Nuclear Fleet	In Operation	Additional Authorized / Being Built
SUBMARINES		
Polaris (SSBN)	41	0
Attack (SSN)	75	26
Trident	0	7
SURFACE SHIPS		
Aircraft Carrier (CVN)	3	1
Guided Missile Cruiser (CGN)	8	2
TOTAL	127	36
The Conventional Fleet		
Aircraft Carrier (CV)	11	0
Guided Missile Cruiser (CG)	17	0
Destroyer (DD) and Guided Missile (DDG)	75	19
Frigate (FF) and Guided Missile (FFG)	65	25
Submarines (SS)	10	0
Amphibians	63	3
TOTAL	241	47

34.5% of the combatant forces are nuclear powered
(368 total combatant ships)
All figures as of May 31, 1978 and are subject to change.

Ships of Today's Nuclear Submarine Navy

MISSILE SUBMARINES

Designed to remain undetected, alert, and immediately responsive to provide an effective strategic deterrent force.

POLARIS—Each POLARIS submarine carries 16 solid-fuel, two stage ballistic missiles.

POSEIDON—A 2800 mile range (compared with POLARIS A3's 2500 mile range) increased accuracy, greater payloads, and improved defense penetrating ability make POSEIDON eight times more effective than POLARIS.

ATTACK SUBMARINES

Designed to be the Navy's primary anti-submarine warfare force, to search and destory enemy submarines in time of war.

NAUTILUS/SKATE CLASS—First nuclear-powered submarines, designed with basic surface hulls.

SKIPJACK CLASS—First nuclear submarine with high speed ALBACORE hull.

PERMIT CLASS—Birth of the QUIET attack submarine.

STURGEON CLASS—Today's fast attack submarine. One of the most advanced operational submarines in the world. Capable of intelligence work as well as antiship and antisub operations.

TURBO ELECTRIC-USS GLENARD P. LIPSCOMB (SSN 685), an ultra quiet, high speed, electric drive submarine.

LOS ANGELES CLASS FAST ATTACK SUBMARINES—Ultra fast, ultra quiet follow on to the STURGEON class submarine. The first of 39 planned Los Angeles class submarines joined the fleet in November 1976.

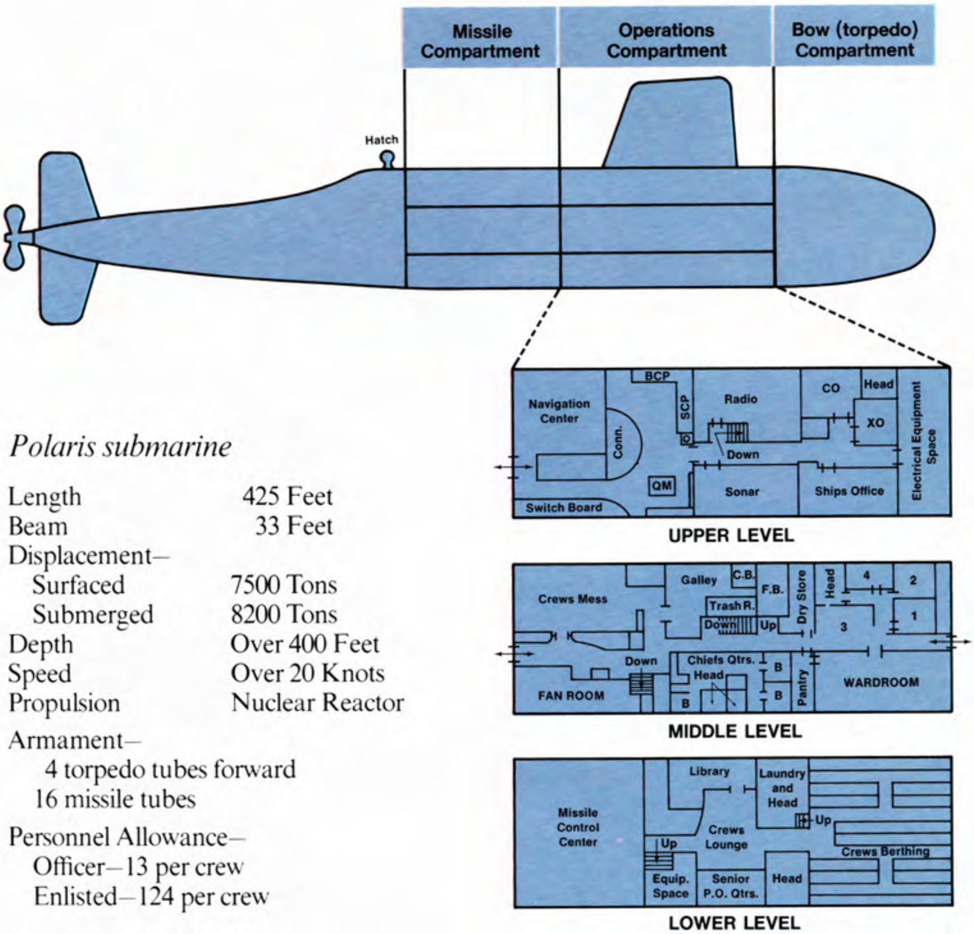
Submarines For The Future

TRIDENT—The TRIDENT Missile will make the ocean "haystack" ten times larger for our TRIDENT submarine "needles" to hide in. The very large (560 feet long) TRIDENT submarines are scheduled to join the fleet in 1980.

MODIFIED 688 CLASS—Under development to incorporate the latest in tactical weapons and sensors; capable of firing antiship cruise missiles.

SSNx—Characteristics of a totally new attack submarine presently being investigated.

USS Simon Bolivar (SSBN 641)



Polaris submarine

Length	425 Feet
Beam	33 Feet
Displacement–	
Surfaced	7500 Tons
Submerged	8200 Tons
Depth	Over 400 Feet
Speed	Over 20 Knots
Propulsion	Nuclear Reactor

Armament–
- 4 torpedo tubes forward
- 16 missile tubes

Personnel Allowance–
- Officer–13 per crew
- Enlisted–124 per crew

USS Sunfish (SSN 649)

SUNFISH (SSN 649) is a nuclear-powered attack submarine of the "STURGEON Class," especially designed as an antisubmarine weapon. The extensive use of sound-isolating materials and great care in noise reduction of all moving parts give SUNFISH an inherent silent quality and provide for maximum performance of her advanced sonar system. She combines the endurance and environmental independence of nuclear power with deep submergence and high speed. These capabilities, coupled with the latest in submarine weapons systems, make SUNFISH one of the Navy's most effective antisubmarine weapons. Super-quiet, deep diving, and swift, SUNFISH is also potentially very lethal to hostile surface shipping. But she is especially suited as a "killer submarine" vitally concerned with denying the effectiveness of a hostile underseas fleet. She is designed with an overall length of 292 feet, extreme beam, 32 feet; normal surface displacement, 4,060 tons, and a complement of 12 officers and 95 enlisted.

Ships of Today's Nuclear Surface Navy

GUIDED MISSILE CRUISERS

USS LONG BEACH (CGN-9)–Powered by two nuclear reactors. First nuclear powered warship designed from the keel up. Armament includes TERRIER, TALOS and ASW missile systems. Equipped with NTDS; capable of AAW, ASW and shore bombardment operations.

USS BAINBRIDGE (CGN-25)–Powered by two nuclear reactors. First nuclear ship to engage in combat operations. Armament includes double-ended TERRIER missile systems.

USS TRUXTUN (CGN-35)–Powered by two nuclear reactors. Armament includes TERRIER missile system, ASROC and 5"/54-gun battery.

USS CALIFORNIA (CGN-36) and USS SOUTH CAROLINA (CGN-37)–(California Class) Powered by two long-lifetime nuclear reactors. Displacing 11,000 tons, capable of fast missile oriented response in multi-threat environment against air, submarine and surface ship threats.

USS VIRGINIA (CGN-38), USS TEXAS (CGN-39) and USS MISSISSIPPI (CGN-40)–(Virginia Class) Powered by two nuclear reactors, outfitted with the very latest electronic, communications and NTDS systems. Its main battery is the TARTAR missile system, and 5"/54-gun battery. USS ARKANSAS (CGN-41) is under construction.

AIRCRAFT CARRIERS

USS ENTERPRISE (CVN-65)–First nuclear aircraft carrier, powered by eight nuclear reactors. Modified to handle newest F-14 and S-3 aircraft.

USS NIMITZ (CVN-68) and USS DWIGHT D. EISENHOWER (CVN-69)–(Nimitz Class) Latest class nuclear aircraft carriers, powered by two large nuclear reactors which provide:

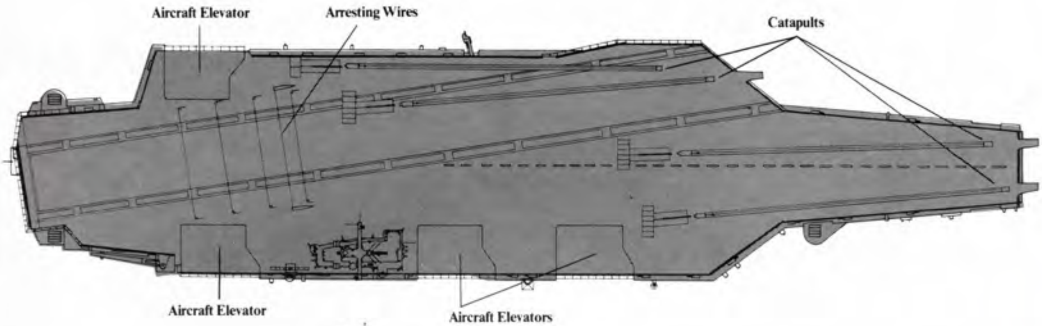
a. Fuel for 13 years of normal carrier operations.
b. 90% more aviation fuel capacity.
c. 50% more aviation ammunition capacity.

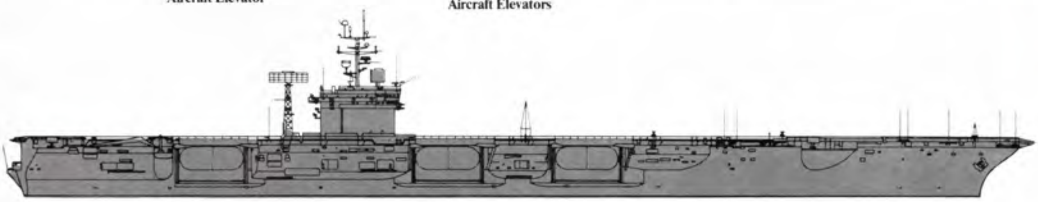
USS VINSON (CVN-70) is under construction.

Surface Ships for the Future

CGN/AEGIS CLASS–Construction of these cruisers is under consideration. They would be built on the CGN-38 Class hull, would displace approximately 11,000 tons and carry double-ended missile systems.

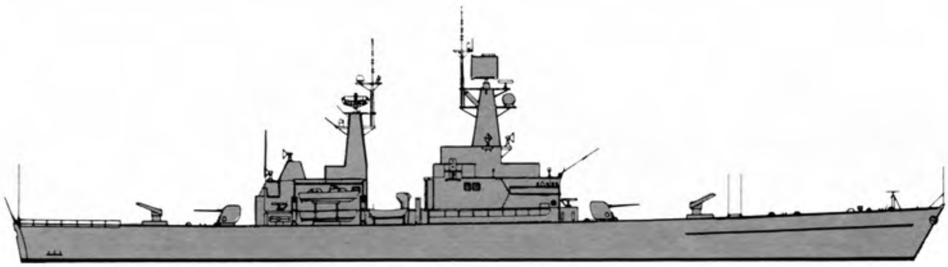
USS Nimitz (CVN 68)





Displacement, tons	91,400 full load
Length	1,040 feet
Beam	134 feet
Decks (stories)	17 (including 8 above flight deck in tower)
Flight deck width	252 feet
Catapults	4 steam
Aircraft	approx. 100
Missiles	3 Basic Point Defense Missile System (BPDMS) launchers
Main engines	geared steam turbines: 260,000 shp; 4 shafts
Nuclear reactors	2 pressurized-water cooled
Speed	30+ knots
Complement	3,300 persons plus 2,800 assigned to air wing for a total of 6,100 persons

USS Virginia (CGN 38)



Displacement, tons	11,000 full load
Length	585 feet
Beam	63 feet
Helicopters	2
Missile launchers	2 combination twin Tartar-D/ASROC launchers
Guns	2–5 inch 54 caliber dual-purpose
A/S weapons	ASROC and 2 triple torpedo tubes
Main engines	2 geared turbines; 2 shafts
Reactors	2 pressurized-water cooled
Speed	30+ knots
Complement	442 persons (27 officers, 415 enlisted)

Advantages Of a Nuclear Surface Fleet

The Chief of Naval Operations has determined that nuclear-powered surface ships possess the following advantages over their conventional counterparts:

1. **Virtually unlimited endurance at high speeds which gives:**
   a. Increased tactical flexibility and freedom of independent action.
   b. Capability to cycle in high speed transit to and from distant and less vulnerable sources of ammunition, aviation fuel, and other supplies needed to continue in action.
   c. Freedom to extend attack along a greater perimeter.
2. **Reduced vulnerability due to:**
   a. Freedom from dependence upon replenishment in areas of high threat.
   b. Improved capability for sealing ship against nuclear, biological, and chemical attack.
   c. Enhanced opportunity to use evasive transit tracks.
3. **Significantly reduced dependence upon logistic support gives:**
   a. Decreased requirement for mobile support forces.
   b. Reduced requirements for oil at bases and prepositioned at depots.
4. **Greater attack effectiveness due to:**
   a. Ability to be on attack station a higher percentage of time.
   b. Increased ability to exploit weather conditions.
5. **Reduced maintenance effort on hulls of ships and aircraft by elimination of corrosive stack gases.**

Nuclear Power Program Incentives and Rewards

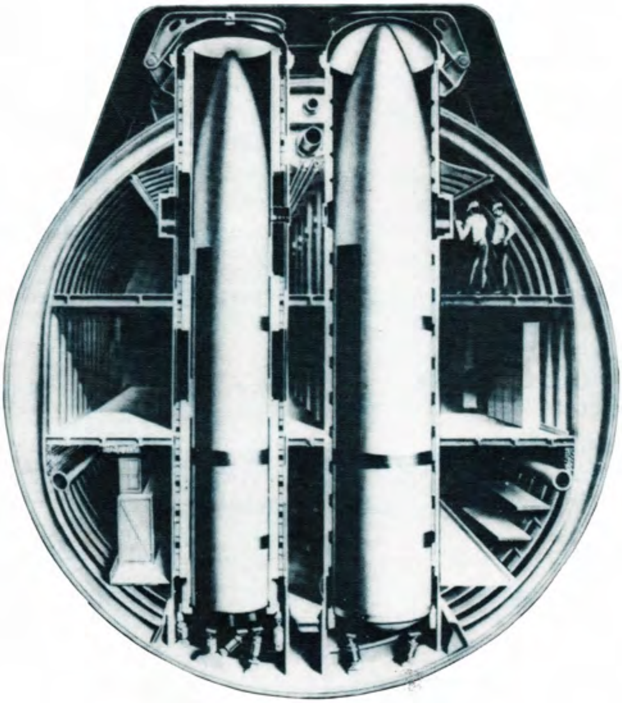
There are many tangible rewards from participation in the Nuclear Power Program. Among them . . .

RAPID ADVANCEMENT. Statistically, nuclear operators advance through the petty officer grades more rapidly than their contemporaries in most other Navy programs. Accelerated advancement begins when you enlist as an E3 seaman (instead of an E1 recruit) and automatically advance to petty officer third class on completion of basic Class A school.

PROFICIENCY PAY. You are eligible for specialty pay of $100 per month when serving in a nuclear assignment if you are "career designated." That is, if you have extended your enlistment obligation to a total of 7 years. Qualified first class petty officers with over 6 years naval service are eligible for specialty pay of $150 per month.

SELECTIVE REENLISTMENT BONUS. As a nuclear-trained Navyman you are eligible for large reenlistment bonuses. For example, a second class petty officer who reenlists for 6 years may be paid a bonus of approximately $15,000.

SUBMARINE PAY. Persons serving in submarines are eligible for submarine pay of from $55 to $105 per month extra depending on rate and time in service.



POLARIS A-3 SYSTEM INSTALLATION

POSEIDON C-3 SYSTEM INSTALLATION

If after reading this, you're interested in learning more, get in touch with your nearest Navy recruiter, talk with your school counselor or call the Navy's toll-free information number:
800-841-8000.

In Georgia, call 800-342-5855;
in Alaska, 272-9133 collect;
in Puerto Rico, 724-4525 collect;
in Hawaii dial 546-7540.

The information in this booklet is subject to change. See your Navy recruiter or dial the free number for the latest details.

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CAPT R. W. WEIR, USN
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Navy Recruiting Command

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