

Navy Nuke

by Bill Pawlyk

One of my earliest memories is of the 1945 Fleet Week in New York celebrating the end of World War II. As a four-year-old, I was awestruck riding a crowded Navy launch out onto the Hudson River to board a towering aircraft carrier and a behemoth battleship. Over sixty years later, I can still picture them in my mind. I grew up watching "Victory at Sea," "Silent Service," and many World War II submarine movies, and I had my heart set on serving in submarines. Sub duty and seeing the world in the Navy became my goals. This led me to Annapolis. In the early 1960's, the Navy was phasing out conventional diesel-electric subs for modern nuclear subs, so I took nuclear physics and nuclear engineering courses at the Naval Academy. Nuclear energy - new, awesome, and exotic, gave the golden promise of unlimited power. For my First Class (Senior Year) Summer Training Cruise at the Naval Submarine Base at Groton, Connecticut, I trained aboard a diesel boat that was a test bed for new sonars. Other than a warthog-like bulbous bow for the sonar, the sub was in its WWII configuration. This meant the sail was low to the water, unlike the higher, vane-like sails of the Guppy-mod subs. Guppy stood for Greater Underwater Propulsion Program, which upgraded old subs to incorporate the lessons learned from captured German subs. My boat's low, stepped bridge made for a wet ride, since waves would wash up and over the bridge. As the waves washed over us, the bridge watch standers would duck down behind the superstructure. It was a wet, but fun pastime as long as the water wasn't frigid.

Qualifying as Diving Officer and Junior Officer of the Deck, I got to dive the boat. This was an adrenaline-filled activity. I'd yell, "Clear the bridge!" and the two lookouts would jump below through the bridge hatch. I'd follow that with a loud and vigorous "DIVE! DIVE!" over the 1MC general announcing circuit, and hit the diving alarm lever twice to sound the loud and raucous "A-OH-GA, A-OH-GA" horn throughout the boat. This started a symphony of actions within the sub. The diesels were shut down, if they were running, and power shifted to the batteries. Air intake valves and engine exhaust valves were shut, while the ballast tank vent valves were opened to allow seawater to rush into the ballast tanks. The bow planes, folded up against the hull on the surface, were rigged out and put on full dive. The stem planes, permanently rigged out like the tail surface of an airplane, didn't need rigging out, and were placed on full dive. These actions took seconds to complete. On the bridge, I'd hear a "whoosh" accompanied by small geysers of mist, as the ballast tanks filled with water, forcing air out through the vents. Instead of immediately jumping into the hatch, I'd delay until the bow dove below the waves and watch the sea rush up and over the forward deck. There was a bit of a contest among the Diving Officers to see how far we could go without getting water down the hatch. If anyone did that, the Captain would have their head for endangering the ship. Yet this game went on, a holdover of sorts from wartime crash dives when seconds counted and subs practice to get underwater in a minute or so to avoid enemy aircraft or ships. I came close, with waves lapping at the front of the sail and the en-

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tire foredeck underwater. This meant that the water level was only four or so feet below my feet and the bridge hatch. Being young and agile, I'd jump with both feet through the open hatch, grabbing the hatch lanyard, which had a wooden toggle at its end. I'd jump the seven or eight feet down into the conning tower, pulling the hatch shut with the lanyard. The quartermaster of the watch awaited my leap, ready to dog the hatch latches with the wheel on the underside of the hatch as I hung onto the lanyard. I'd yell, "Hatch secured! Last man down!" to the Officer of the Deck in the Conning Tower and then slide down the ladder another level into the Control Room. Rather than clam-ber down step by step, seasoned submariners, when in a hurry, would yell "Down ladder!" and make a move more like a firefighter sliding down a fire-pole. The vertical ladders had a handrail projecting out and with practice, I could press my feet against the outside of the rails while gripping them with my hands and slide down the ladder. Some liked to flip-flop their feet from rung to rung, but I found that more awkward and uncomfortable.

As I descended the ladder into the Control Room, my head was swiveled to my left looking at the valve indicator panel. This panel was a series of red "0's" or green horizontal bar indicating the open or shut condition of the outboard intake and exhaust valves. I'd hope to see a line of green bars showing all the valves had closed properly. If so, I yell "green board!" and the dive would continue. I did have an occasion later in my submarine duty when I saw a red board - and aborted the dive with an emergency surface. At that time, I was riding another diesel sub completing my Submarine qualifica-tion to earn my gold dolphins. I thought it was a drill to test my reactions and so was cooler than if I'd thought it was real (it was a real malfunc-tion). I remember thinking at the time, "these guys are good, how did they rig that board to give a red board on an actual dive?" I had a "Holy shit!" reaction when I realized it wasn't a drill. A piece of hard carbon buildup had come out of the diesel engine exhaust and wedged in the outboard exhaust valve, keeping it from completely shutting. Fortunately, most sub valve open-ings have inboard and outboard valves as backup, and I stopped the dive, blowing the main ballast tanks to resurface without harm.

I thoroughly enjoyed the camaraderie of the diesel boat submariners, officer and enlisted. Their tight teamwork and informal, yet professional approach appealed to me. Even as a Midshipman trainee I felt I was a part of the crew.

In the final weeks of my midshipman summer training, I transferred to the *USS Tullibee* (SSN-597)¹. Less than two years old, she was designed as a "Hunter-Killer" antisubmarine submarine - quiet, slower than most nukes, and small - even our World War II diesel boats were wider than the *Tullibee*. Her nuclear energy was converted to electricity through turbine-generators, which powered a large electric motor for propulsion.

¹ 'SSN is the Navy's designation for "Attack" type nuclear submarines. The convention-ally-powered submarines are designated with an "SS-" prefix. Ballistic missile nuclear submarines have an "SSBN-" prefix, and submarines whose primary mission is guided mis-siles and Special Forces (SEALS) carry an "SSGN-" prefix.

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When I laid my eyes on her, the *Tullibee* sat fully exposed in a floating dry dock for maintenance; a dark cylinder with a round cap at one end and a tapered stern with a shiny bronze propeller. She served as my induction in the idiosyncrasies and ironclad control of Admiral Rickover over the Naval Nuclear Program.

Admiral Rickover's organization (known as NR or Code-08 "Code Oh-eight")², had to "bless" everyone for access to Naval Nuclear Reactors. While I waited for that approval, I was restricted to the forward part of the sub, where I concentrated on the operations and weapons systems. *Tullibee* had her torpedo tubes amidships and angled outward through the hull. Most later U.S. subs used this configuration. She also had a large spherical sonar dome in the bow, another innovation accepted as standard in later years. Since the sub was out of the water, I was able to crawl through a small access hatch and tunnel that normally was sealed off. This access way was about the diameter of a torpedo tube and led into the dome itself where I found myself surrounded by hundreds of cables and sonar transducers in the dome.

Rickover's name was spoken with awe and trepidation on the *Tullibee*, so I was surprised by the Commanding Officer's (C.O.) open exasperation at the slowness of Admiral Rickover's offices in authorizing my access. The C.O. was about to circumvent Admiral Rickover, and let me enter the reactor and engineering compartments on his own authority, when the approval finally came through. In eager anticipation of entering the Reactor Compartment itself, I donned a set of white coveralls, yellow gloves, booties, and a respirator. The spaces in a submarine are tight, and the *Tullibee*'s small diameter hull gave just enough space to squeeze around the cylindrical reactor. Dressed like a spaceman, I literally hugged the reactor vessel. It was the first operational reactor I saw, although I had conducted experiments on the Naval Academy's even smaller subcritical teaching reactor. My training period on the *Tullibee* soon ended and I entered my senior year filled with aspirations of submarine duty and nuclear power.

Admiral Rickover had assiduously maneuvered out of the backwaters of the Navy to claim czar-like control of Naval Nuclear Power. He had fought a wily bureaucratic and political battle between those who wanted strong civilian control over anything nuclear and military people like Rickover who wouldn't brook civilian interference. There were demands for a civilian representative as the final authority over reactor operation on every Navy nuclear-powered ship. Rickover convinced influential people, like Enrico Fermi, that he would be personally responsible for the safe operation of naval nuclear reactors. He based his arguments on extremely stringent personnel selection practices, with his personal approval required for all officers in the program. He bolstered that selection process with a rigorous training program that was essentially at a university graduate school level. Then he added an all-

² NR for Naval Reactors. Code-08 was the Navy's numerical organizational designation for Rickover's organization

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encompassing monitoring and control program, again with his personal involvement. He won the day, and along with that, a unique position in the government bureaucracy that put him in command of the Naval Nuclear Program as an admiral and double-hatted him as the civilian overseer of the Navt Nuclear Program in the Atomic Energy Commission (AEC)³. Rickover skillfully used these positions to overcome roadblocks from both sides. When it suited his needs, he'd sidestep the Navy objections by issuing himself orders using his civilian AEC title. When the civilian AEC side was the problem, he'd exercise his military powers to overcome opposition. In the process, he astutely massaged the egos of key Congressional people to gain their favor. Rickover was attributed with ending almost a century of Navy tradition in naming submarines after fish. "Fish don't vote," he supposedly said. Subs took on the names of famous Americans, cities, and states. Commanding Officers of every nuclear ship were directed to write monthly letters to the politicians and civic leaders of the cities and states associated with their ships names, including blind copies to Rickover. This pandering and Congressional clout kept the Navy from retiring him and eventually gained him his second, third, and fourth stars.

However, my dreams were dashed, when the call came out for Midshipmen volunteers for nuclear power, which had by then become a prerequisite for submarine duty. Due to my slightly near-sighted left eye, I was not quite able to meet the vision requirements for submarines. Because periscope optics were not adaptable to eyeglasses and had limited focusing - capability, the eyesight requirements were almost as stringent as for pilots. Years later, after Admiral Rickover finally accepted me for submarine duty I questioned the logic since the periscope was monocular, and I didn't see why I couldn't rely on my good eye. Since my poorer eye was borderline acceptable I requested a medical waiver, which the Navy summarily refused. Years of dreaming about sub duty went down the tubes. Very disheartened, I explored other duty options. Before I had to decide, fate of a sort showed its hand.

Naval Nuclear Power was less than ten years old, and we were building nuclear powered warships as fast as possible. Rickover's picture was prominently displayed in the press, as he was seen inspecting each new nuclear ship and riding it on its initial sea trials. Of highest priority were the very new Polaris Ballistic Missile subs - which had two crews each. The "Blue and Gold" crews traded off operating the "Boomers" to maximize the ship's time on patrols. The clarion call of the time was "Forty-one for Freedom"; symbolizing the forty-one Polaris missile⁴ subs entering service, each one requiring two

³ The Atomic Energy Commission (AEC) is the forerunner of today's Nuclear Regulatory Commission (NRC).

⁴ Polaris missiles were the first generation of submarine-launched ballistic missiles. The second-generation missiles were called Poseidon. The Polaris/Poseidon submarines were replaced in the 1980's by the Ohio-class Trident missile submarines.

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full crews. The "Blue and Gold" crews traded off operating the "Boomers"⁵ to maximize the ship's time on patrols. As luck would have it, the Navy didn't get enough qualified men to meet its quota for Nuclear Power, and a second call for volunteers went out. I put my oar in the water again, explaining my eyesight predicament. Lo and behold, this time the Navy offered me a medical waiver for my eyesight before I could get the words out of my mouth. By the end of the day, and without filling out one form, I had my waiver. When the decision on my waiver came back favorably and so quickly, I was elated. Not until later did I feel more ambivalent. After my initial wave of jubilation, I pondered why that decision was not possible initially. Since the periscope was monocular, why wasn't the eyesight requirement based on the eye with the best acuity, since only one eye was used for a periscope? These questions were never answered, but I found other instances of bureaucratic illogic as I continued in my life. Whether concerning the Navy's "needs of the service" or private industry's drive for profits, logic and individual preference often lost out.

A Navy station wagon took four of us Midshipmen to D.C. for Nuclear Power Program interviews. We sat stiffly and silently in the vehicle and were filled with a mixture of anticipation and dread at the prospect of being grilled by Admiral Rickover. He had already built his reputation as an arbitrary, cantankerous iconoclast. Rickover's offices were at Navy headquarters, which were then located in "temporary" WWII buildings on the south side of the Mall stretching along the reflecting pool between the Washington Monument and the Lincoln Memorial. These Potemkin⁶ village buildings had imposing stone-columned façades masking a network of long, finger-like, multi-story wood buildings. A rear wing housed Rickover and his NR organization.

Admiral Rickover strove to show his efficiency and frugality with government money. We went up a few flights of creaky, worn wooden stairs to a balcony landing, which had a close door and a bank teller-like window next to it. I remember the dazzling bands of bright winter morning sunlight filling the stairwell and hoped that this was an omen of a bright future. A heavy-set secretary sat behind the window checking ID's. She pressed a buzzer to allow us entry through the door. Taking a deep breath, I entered into an austere hallway whose dim lighting shrouded the worn wood and peeling paint. My eyes strained to adjust from the bright sunlit stairwell to this dungeon-like darkness.

We were ushered into a large, bare-walled room with four worn wooden tables pushed together and plain hardwood chairs around it. A staff person gave us a brief rundown on the process, explaining that we'd be interviewed by two or

⁵ "Boomers" is Navy jargon for ballistic missile submarines, also designated as SSBN's.

⁶ Potemkin villages were false front villages built, along a route Catherine the Great was to travel, by Russian field marshal Potemkin, to make her believe the area was developed.

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three staff, who would be either military or civilian. You couldn't tell the difference since everyone on Rickover's staff wore civilian clothes – another symbol of his iconoclastic ways. Then the Admiral himself would interview us individually.

The preliminary interviews took 20 to 40 minutes each and I returned to the meeting room between interviews. Occasionally I glimpsed one of my fellow interviewees during this period as we shuffled from office to office. Surprisingly to me, these interviews seemed very reasonable and low key; not at all the inquisition I expected. The emphasis was on motivation, study habits, courses taken, grades, class standing, and so forth. I felt well prepared as a Nuclear Power Program candidate. I entered the Naval Academy with advanced placement in Math and English, so I skipped (the Navy term was "validated") the freshman courses in these subjects and started at the next level. I also took an extra "overload" course each semester. All of the overload courses I took were in Math, Science, and Engineering; including Nuclear Physics and Nuclear Engineering. My academic record was good – in the upper 25% of my class. My naiveté gave me a certain cockiness. Ah, yes. I soon learned another lesson from Admiral Rickover.

After the initial set of interviews, as I waited alone in the large room, I felt apprehensive, knowing that the next step was the big interview with "The Man" himself. Rickover's interviews had already gained notoriety for his unorthodox style. A man in a suit stepped into the room, and introduced himself.

"Captain ..." (a name I didn't catch, due to my anxiety), "I'm a PCO (Prospective Commanding Officer)⁷ attached to the Admiral's staff. When you enter the Admiral's office, go directly to the chair in front of his desk, and take a seat without talking. The Admiral will speak to you when he's ready. Answer directly and be concise. The Admiral doesn't like long-winded answers. I'll follow you in and I'll be behind you. Any questions?"

I had a few dozen questions running through my mind, but didn't dare to ask them. The PCO led me down the hallway to a door, knocked, and opened the door, ushering me in. With trepidation I stepped into an office that was even darker than the dim hallway; the only illumination came from narrow streams of sunlight angling downward through closed Venetian blinds in two windows behind Admiral Rickover's desk at the far wall. The slits of light highlighted dancing dust particles in the air. Piles of books and papers covering the Admiral's desk blocked my view of him until I reached the chair. As I strained to adjust to this weird lighting, (I'm sure this was part of his design to put interviewees ill at ease), his bald, domed head appeared in silhouette, leaving his face in shadow with the sunlight behind him streaming

⁷ Prospective Commanding Officer (PCO) an officer selected to command a ship, but not yet in command. Rickover required all nuclear-powered ship Commanding Officers to spend several months on his staff for training and observation before taking command of a nuclear-powered ship.

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into my eyes. A small man, with prominent ears and a large hawkbill nose, his head dominated his body; he presented a gnomish figure shrouded behind the desk in his nondescript gray civilian suit. Having heard about a chair with one leg cut short to make its occupants off balance, I pressed firmly back in the chair to steady myself. Admiral Rickover started by lambasting me in a piercing, nasally raspy tone.

"You've wasted your time! You haven't gotten anything out of your courses! What do you do on weekends?"

Grasping for an answer, I gathered myself and replied "The normal social things, Admiral. I attend sports events, and social activities – primarily dates with girls." (As a virile young male, I believed that dating was an essential of life). Abruptly, my Q&A with the Admiral ended.

At this point, I was out of the loop and he directed a five-minute barrage at the poor PCO Captain behind me. I'm sure the tirade was intended for my edification and I sat there grimacing, as I felt the salvos go over my head. Rickover laid into him for failing to brief me properly. Apparently, using the word "primarily" to qualify my answer constituted a major sin.

The Admiral reprimanded the PCO, "You're supposed to properly brief these guys before they get in here. I never want to hear a qualified answer like that again. They are to answer with direct, unqualified statements. Do you understand? Get him out of here!"

I rose and quickly marched out the door held open by the Captain. Now, being a mere Midshipman, any officer was impressive to me, and Captains were next to gods, (who were the Admirals). Witnessing a full Captain being chewed out like that was a totally unheard of experience for me. Furthermore, the Admiral chewed him out for my answers. The Captain and I marched in column, briskly and silently, with him in the rear and me in the van, back down the hall. I wondered if I should apologize to him for causing his chewing out. As we neared the large room, the Captain ordered, "Go on in."

I opened the door and entered the room; the Captain brushed by me and opened a door that led into a small bare closet. In this five feet long and three feet deep space sat a lone wooden chair. A porcelain ceiling fixture held a 40 or 60-watt bare light bulb. "Wait in here." The PCO shut the door and left me wondering what the hell was up – I hadn't heard about this particular wrinkle in the Rickover lore.

I sat there as thoughts raced through my mind. My apprehension and bewilderment passed into pondering. Why was I in here? What was I expected to think about? How long would this last? It felt like psychological warfare. I had obviously pissed off the Admiral and gotten a Captain chewed out. Two new – and not auspicious – accomplishments in my young naval career. As the wait lengthened in the barren cubicle, my pondering passed into annoyance. I'd answered honestly and forthrightly and I didn't feel I'd been disrespectful. I sat alone and continued my meditation. After what seemed like an interminable

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time, I got up the courage to open the door a crack and peek out to see if anyone was in the room. It was empty. I shut the door again, and continued my wait. I felt like I'd been placed in Purgatory to contemplate my sins, the exact nature and seriousness of which I wasn't at all clear.

Finally, I heard footsteps approaching and watched as the doorknob turned and the door opened. Another staff member, whom I recognized from one of my preliminary interviews stood there and ordered, "Come with me!"

I dutifully followed him out of my closet prison cell, through the room, and down the hall to his office.

"Sit down, Mister. The Admiral wasn't very happy with your answers, however if you agree to take another overload class this final term, promise to stand in the top 100 of your class, and not date for the rest of the year, you're in the Program."

I sat stunned, still peeved about my banishment to the closet. Filling my silence, the staff member asked, "Do you agree to this? That's all you've got to do and you're in the Nuclear Power Program."

Suddenly my dream of nuclear subs was less appealing. This wasn't the friendly, close-knit atmosphere that the submarine crews had shown me. My isolation cell treatment hadn't made me amenable to Rickover's demands. "I'd like to take some time to think about that, sir." I replied. "I've taken every math, engineering, and science course available. The only things I could take are liberal arts and stuff" (An unworthy subject area for a red-blooded young naval officer). "What if I took Basket Weaving or something like that?"

"The Admiral didn't say anything about that; he just wants you to take another overload course."

"Well sir, I need to think this over... I am working hard now academically. I can promise to improve my class standing but I don't see how I can promise to be any specific number in my class. And as for dating, I don't believe it's distracting from my academic performance. In fact, I believe that it helps me to maintain a balance, and I don't overdo it." (I really did believe I needed some female companionship).

"Well son, you've heard what the Admiral wants from you; those are the conditions. It's up to you to decide to accept it. The Nuclear Power Program is very important."

"I'm going to have to go back and think about this, sir - if that's O.K."

"O.K. then, you can take a few days and then get back to us."

With that, the interview process ended. I left his office and found my class-

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mates waiting in the hallway. Not wanting to talk right there, we only nodded recognition and remained silent as our escort led us out the door and down the stairwell, now shrouded in foreboding shadows as evening approached. A Navy vehicle waited outside for our return trip to Annapolis. We made cursory conversation on the way back. Our Rickover experiences had left us all slightly stunned. No interviews had gone swimmingly. I seemed to be the only one of our small group that even had a chance of acceptance. We arrived back at the Academy just in time for the evening meal. We checked in at the Main Office in Bancroft Hall, the world's largest dormitory. I was ordered to report to the Commandant's Office at 0700 the next morning after breakfast. The Commandant, a senior Navy Captain, was second in command at the Naval Academy, and one-on-one meetings between him and a Midshipman were rare events.

That night my resolve to stand my ground stiffened. Although I had steeled myself for the unusual in facing a Rickover interview, based upon his reputation as an irascible maverick, my reaction to what I felt were illogical and unreasonable demands evoked a wave of resistance within me. In my view, Rickover was a maverick, but he was also perverse, arbitrary, downright uncaring, and mean. Later in my naval duty, I saw and experienced more of Admiral Rickover's capricious ways.

Early the next morning, I found myself in the Commandant's Office on the main deck of Bancroft Hall. The Commandant cordially asked about my general impressions of the interview process. He expressed genuine curiosity, not being a "Nuke" himself. He said, "I've heard a lot of strange things about Admiral Rickover's methods. Not everyone likes his style." His candor impressed me, and I felt more at ease. I summarized my experience, ending with the Admiral's requirements for my admittance into his program. I told the Commandant essentially the same things I told the last staff member at my interviews. "You're not being unreasonable in my view," the Commandant replied. "I won't tell you what to do. That's your personal decision. We'll get back to Rickover's people and see what they say. Thank you, and good luck." I thanked the Commandant, very much impressed and heartened by his empathy and interest.

Later that day I got a message from the Commandant's Office that Admiral Rickover stood firm and I had ten days to think it over and accept. I engrossed myself in studies and rugby and the ten days went by quickly. During that time, I felt more resolute in my position, and considered my other options. On the tenth day, I repeated my final decision to the Commandant who said he'd relay it to Admiral Rickover's office. As I left his office, the Commandant wished me well. A few hours later, the Commandant summoned me again. He said, "Admiral Rickover is holding firm, you either accept his conditions or you're not in the Nuclear Power Program."

I quickly replied, "Well sir, I'm not in his program then."

The Commandant commented, "I know of a number of officers who have had simi-

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lar situations and chose not to accept. The Admiral's program isn't everybody's cup of tea, and you'll do well, whatever you choose." His somewhat surprising support buoyed my spirits. I thanked him again and left his office, wondering what direction to take from here.

Once again, I considered the options open to me. I stood a reasonable chance of getting a shot at the type of duty I wanted. The Army or Air Force, although available options, didn't interest me. Going into the Marines held an allure but I felt that I would cheat some dyed-in-the-wool jarhead of an opportunity at one of the relatively few Marine Corps billets. My eyesight ruled out Flight duty, as well as submarine duty. Because I wanted to go into the traditional seagoing "line" navy, I decided against staff duty as a Civil Engineer Corps (Seabee) officer or a Supply Corps officer. Having experienced the formality of a cruiser on my Third Class summer cruise, the large aircraft carriers and cruisers felt too impersonal, and I thought I'd be lost in a crowd - maybe a reaction to being raised in teeming New York City. The smaller destroyers, the workhorses of the fleet, seemed to be more fun, exciting, and more like the tight-knit submarine crews. When the time came for service selection, I had a full menu before me. The thought of overseas duty seemed exotically attractive; after all, I joined the Navy, in part, to see the world. As I scanned the bewildering options, my eyes fixed upon a destroyer with an intriguing situation. She had been homeported in Japan and just finished a major shipyard modernization. Now homeported in Long Beach, California, her schedule took her for a deployment within the next year to the Far East, (WestPac, as it was called in the Navy). My eyes lit up as I realized this was the best of all worlds as far as I was concerned. I'd be on a reasonably up-to-date destroyer; I'd taste California and the Far East, perfectly new and exciting experiences for me. I quickly chose the *USS Eversole* (DD-789) as my duty station. I wrote to my new ship and got a reply informing me that I'd be assigned to the Anti-Submarine Warfare (ASW) division. My new ship's primary mission was ASW, so my assignment further motivated me. The thrill of fresh horizons and the prospect of my new duties set me aspiring to conquer my new worlds and diminished my lingering anguish and disappointment over missing submarine duty.

At graduation, I got more encouragement in a letter from the Chief of Naval Personnel⁸ that stated, "Upon satisfactory completion of your first tour of duty you can expect assignment to the Naval Postgraduate School in the Masters Degree program." This made me feel more secure in my decisions, and my dreams of nuclear power and submarines were replaced by visions of destroyers steaming across the seas.

On my destroyer, I met a Lieutenant who was just finishing his tour as a department head and heading on to the Naval Postgraduate School in Monterey, California. About nine months later, I heard that Rickover had cut this Lieutenant's PG schooling off and "drafted" him and several others like him, into the Nuclear Power Program. This raised my resentment that I had felt when faced with Rickover's demands at my own interview. This latest episode foreshadowed my ongoing encounters with Admiral Rickover.

⁸ The Chief of Naval Personnel is the admiral in charge of naval personnel administration, which organization was at that time called the Bureau of Naval Personnel, or BuPers for short.

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I loved my destroyer duty. Operating out of Long Beach, I cruised to San Diego, Seattle, Juneau, Hawaii, and the Far East. Vietnam was just heating up and we played bumper cars with Soviet intelligence ship that was bothering our carriers off the coast of Vietnam. Entering the Sea of Japan, we also stirred up some Soviet destroyers and a jet off the Siberian coast. Our return to the states was delayed a few weeks by the Gulf of Tonkin incident, but we were up in Japanese waters when that happened. My ship won the "E" for excellence as the best destroyer, and we won the "A" for ASW excellence. Probably because of that, the C.O. nominated me for "CRUDESPEC Junior Officer of the Year" (CRUDESPEC stood for Cruisers-Destroyers Pacific Fleet). I made it through the first couple of rounds of interviews for my Destroyer Division and Squadron and got interviewed by the admiral who was in command of all the cruisers and destroyers in the Pacific Fleet; however, eventually someone else won. Happy and secure in my position, I went on. By this time, I figured out that being a "head and shoulders" standout officer in the normal navy, beat out swimming among a school of swift sharks in the nuclear navy.

About eight months shy of completing my initial two-year sea tour, a team of two officers from the Bureau of Naval Personnel, came to my ship to discuss career plans with the wardroom.⁹ When they got around to me, I told them that I anticipated getting orders to Naval Post Graduate School to get my masters degree in accordance with my letter from the Chief of BuPers. My C.O. and X.O. (Executive Officer)¹⁰ offered me the possibility of going to one of the first classes at the new Destroyer School at Newport, R.I., instead of graduate school. Destroyer School was the surface Navy's equivalent to Submarine School and Flight School. My C.O. also extended the option of "fleeting up" on my ship. This meant moving up from a Division Officer to a Department Head on the same ship. This was a way of recognizing and retaining up and coming talent, and I felt honored by his offer. The BuPers officers told me "With your record and academic background you should consider the Nuclear Power Program."

"I've been interviewed by Admiral Rickover, and he doesn't want me and I don't want his program."

They urged me to reconsider the Nuclear Power Program and before they left the ship, they met with the C.O. and X.O., and left applications for the Nuclear Power Program and Submarine duty. My C.O. and X.O. encouraged me to explore all my options, and after a little hesitation, I filled out the applications for the Nuclear Power Program and to volunteer for Submarine duty; although that career course had lost any serious attraction for me. The voluntary aspect applied only to submarine duty, since Rickover was "drafting" people into his program, as I had learned by the experience of my shipmate who had been pulled from graduate school. In view of my previous Rickover in-

⁹ The officers' dining room and lounge.

¹⁰ The Executive Officer (X.O.) is the second-in-command on a navy ship.

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interview, I didn't seriously think that he would show the least bit of interest, and I'd satisfy the BuPers detailers by going through the motions. I felt that this application process was a mere formality, and that I'd happily move on with my Navy career as a black shoe destroyer man.

Two weeks later, while at sea off the Southern California coast, I was surprised, when I received message orders to report to Washington, D.C. for interviews with Admiral Rickover's organization. Initially I thought about refusing the unexpected orders, but my Captain sweetened the pot by granting me "basket leave"¹¹ during my trip.

"Bill, take time to go home and visit your folks while you're on the East Coast, you won't be charged for leave. Just be back aboard before our next underway period."

That was about two weeks off, and the NR business would only take two or three days at most. I hadn't been home for almost two years and the free leave offer made me feel better about going off for another round with Rickover. When we got back to port, I made travel arrangements to fly back to the East Coast. The airlines offered a \$1.00 upgrade to first-class for those who flew on a government-paid ticket if there was space available, which I did, and I flew in style to D.C. Smugly, I felt I'd gotten one over on Rickover with a free trip home on him.

Rickover's offices hadn't changed since my last visit, except for two year's more wear and neglect. I went through the preliminary staff interviews with a consistent theme on my part.

"I'm happy doing what I'm doing in the Navy and I want to continue the course I'm on." Rickover's staff didn't debate me; they quietly made notes and asked relatively few questions. I felt they understood my position. After a bit of a wait, I once again found myself ushered by a PCO down the dim passageway to Rickover's office. I felt more at ease this time; having my previous interviews as a Midshipman under my belt, and having made my feelings clear to his staff this time. Things still seemed familiar and under control as I entered his office and took my seat.

Rickover immediately erupted with his unnerving, grating voice, "You're a wise guy! You were a wise guy the last time and you're still a wise guy!"

Taken aback, I nevertheless responded, "No sir, Admiral. I may be a bit cocky, but I'm happy doing what I'm doing and I feel I know what I want to do."

Rickover's response was short and to the point. "Get out of here!" he roared.

¹¹ Basket leave is the navy term for leave (vacation) time taken without being officially counted.

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I quickly stood up and marched out of his office. That ended my second interview with - the god of Naval Nuclear Power. I had to be setting records for the shortest Rickover interviews ever.

I marched back along the passageway, not waiting for the PCO. He remained in Rickover's office for a short time, but then I could hear his footsteps as he caught up to me. I thought, "Geez, I pissed off an Admiral, I wonder what that means. I hope I'm not in trouble." I also felt relief, with the thought, "Thank goodness that's over with." Just then, I felt a hand weigh on my shoulder and the PCO's sonorous voice,

"Congratulations son, you're in the Nuclear Power Program."

Flabbergasted, as he drew alongside, I blurted out, "But sir, I just got through telling you, the Admiral, and the other staff that I don't want the Nuclear Power Program."

The PCO led me to his office. "Let's talk." We sat down across his desk. "You volunteered for subs, so you can choose to go to Sub School first, or start with Nuclear Power School." He methodically explained the options, even though I knew most of the details. "You can go to Sub School in Groton," (which took six months). "Or you can start with Nuclear Power School - and you can pick the site you start at." This sort of selection was a little unusual for what I knew to be a program famed for its arbitrary ways. I felt they were trying to soften me up. Nuclear Program training had two phases, each a nominal six months. The first "schoolhouse" phase, Nuclear Power School, focused on theoretical and academic knowledge at one of two Nuclear Power School sites. The second phase, Nuclear Power Prototype Training, focused on practical, hands-on experience, training on actual prototype reactors at three other sites. "Just let me know where you want to start and we'll have you in the next class." If this tedious explanation was supposed to placate me, it wasn't working. His litany sounded like a used car salesman's pitch, and all I wanted to do was to leave. This was a major and somewhat unexpected turn of events. I felt resistance and resolve surge within me. I held fast.

"I want to get back to my ship and talk to my C.O. about leaving my ship. I'm happy in the destroyer navy, I'm doing well, and they're happy with me. I'm not ready to agree to anything right now."

The PCO started to say more, hesitated, and then said, "All right. Take some time to decide which way you want to go. We'll follow up with you, when you get back to your ship. Best wishes and welcome aboard."

"Thank you, sir. May I leave now?" I didn't like the sound of his "Welcome aboard."

"We're through for now, you can go." With that, he stood up and I followed

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his lead as he gave me a handshake and said, "Congratulations."

I had left my "B-4" bag¹² and attaché case at the office, where I picked up my endorsed orders so I could continue my journey. With these in hand, I caught a taxi to Union Station to board a train to New York City and my parent's apartment. On the train, I had time to reflect about this turn of events. Rickover's acceptance of me after our first go-around surprised me. I had outsmarted myself. I had thought that I'd just go through the motions, like going down a checklist, so I could say to myself and others that at least I tried. I also looked at this as a free trip home. I still held out hope that I could avoid Rickover's grasp and go on my merry way in the old school navy. I determined to put this dilemma aside until I could talk with my C.O. In the meantime, I decided to focus on enjoying my time at home. This was my first time home since I'd left for California and a stream of relatives dropped by to visit or invited us over. I spent a busy and enjoyable week and a half at home catching up on family news and telling sea stories. I tried to dismiss most thoughts about nuclear power and Admiral Rickover.

I returned to Long Beach via D.C., again flying first class. Upon my return to my ship, I explained how my interview went and repeated my intention to continue in destroyer duty. A few weeks later, we received notice of my acceptance to the Nuclear Power Program and preliminary papers for my detachment orders. My C.O. supported me and declared me "mission critical" to the ship. This quashed my detachment orders. He didn't have anyone slated to relieve me, and my job as ASW Officer was essential to the ship. I heard nothing from the NR folks for a couple of months. Then BuPers contacted my C.O. telling him either to train someone on board or to request BuPers to detail a qualified replacement for me. The X.O.'s previous tour had been at BuPers and he knew people there. So he made some calls, along with the C.O., and stalled the process some more. One of the officers in the wardroom was a family friend of U.S. Senator Chuck Percy from Illinois, and he offered to help me. Senator Percy made an inquiry on my behalf to sound out the situation. The response relayed to me was "Rickover's office says you either accept orders to Nuclear Power Training or if you continue to fight it you can expect your next orders will be as Recreation Officer on the most remote Aleutian Island they can find." This didn't sound too promising to me, although the Senator said he'd go to bat for me if I desired. He could probably get my Nuclear Power selection stopped, but the consequences didn't look good to me. I called off the political dogs. My X.O. made one more call to D.C. and found out that my service jacket¹³ was no longer at BuPers, but had been shanghaied to Admiral Rickover's office. Only Naval Reactors personnel had access to my records. Within a few days, another letter came from BuPers saying that Nuclear Power was non-voluntary, but I could withdraw my volunteer request for submarine duty. This would limit me to duty aboard aircraft carriers and other nuclear powered surface ships - a relatively small number of ships.

¹² "B-4" bags were government-issued navy blue soft-sided luggage bags.

¹³ Service jacket is the navy's term for an officer's official file record.

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Stymied, I sought my C.O.'s advice, which was to accede to Rickover and go the submarine duty route, since I did like subs. I drafted a letter in which I committed to serve at least twenty years if I could stay in destroyers and not be forced into the Nuclear Power Program. I added that if I was denied my choice, all thoughts of a career in the Navy would be erased, and I would resign at the earliest possible time. I stood firm in my resolve, but added that if forced into nuclear power I chose to begin my training with Submarine School; it definitely was not the standard Navy "Aye Aye, Sir!" response. My C.O., after counseling me on the strong feelings I expressed, gave my letter a favorable endorsement supporting me. Within weeks, I had orders to Submarine School. Not long afterwards, I stood at the end of the Long Beach Naval Station jetty watching with tear-filled eyes as the *Eversole* steamed out to sea without me. My career dreams were once again dashed against the rocks. I determined to make the best of the situation.

Sub School went by quickly and I did well. When it was over, I had my choice of Nuclear Power School sites, and I chose the West Coast site at Mare Island Naval Shipyard in Vallejo, California. I made a memorable drive across country, from Connecticut to California, over the Christmas - New Year holidays, fighting a blizzard near Chicago where even the tollbooths weren't manned. Going over Donner Pass in another blizzard, I passed the remains of the Donner Party's cabins and thought of their horrible five-month ordeal, stranded in the worst winter in the history of the Sierra Nevada. I felt a strange kind of kinship in the bleak setting. I related to the Donner Party's battle with fate and circumstance. Their dreams of a bright new life, like mine, suddenly altered by fate. I wasn't looking forward to the Nuclear Power School grinder.

On my first day of Nuclear Power School at Mare Island, the C.O., Commander Hale, asked me to report to his office. I did so, and soon stood facing him. He had some papers in his hands and referred to them as he calmly said, "I understand you don't want nuclear power and don't want to be here. You have more fleet experience than most of my students and you're more senior than they are, so they will look up to you as an example. I expect the best out of you, Mister. You are to give your best effort. You will not fail this course."

I responded, "Yes, sir. I have no intention of bilging out and you'll get good effort from me."

Before I could continue, he broke in. "You may not understand me completely. You will not fail, because you cannot fail. No matter what you do or don't do, you will pass Nuclear Power School."

I almost blinked as I realized I had just received a free pass through Nuclear Power School - something I had never heard of before or since. "I understand you sir, but if you believe I'm more mature and experienced than most of the other students, I propose that I be treated accordingly and decide for

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myself how much study I need to do. If you want me to maintain a positive attitude, allow me to decide if I need "stupid study." ("Stupid study" consisted of mandatory study hours for all hands in the evenings and weekends under supervision. You just had to be there and appear to study). "If I want to go off for R&R¹⁴ to maintain my sanity, as long as I'm ahead of the curve, I'd like to be able to do that, and you won't have any problems from me, sir." The "curve" meant staying above failing throughout the course.

He thought for a moment or two, and said "O.K. we've got a deal. I expect good things out of you."

I figured out that with me already having completed Sub School, Rickover feared that I would purposely flunk Nuclear Power School and try to go conventional submarines. I hadn't given serious thought to intentionally flunking Nuclear Power School, but I had chosen Sub School as the first phase, so that if I didn't make it through my nuclear power training, I'd hopefully have the option of conventional submarine duty. So began my nuclear power training.

I studied diligently; I did O.K., but found the studies more difficult than I expected, despite my undergraduate advanced Math, Nuclear Physics, and Engineering courses. The first time I skipped stupid study time, the staff instructor got on my case until I asked him to check with the C.O., from then on, I set my own study schedule. I managed to get away on weekends to San Francisco, Muir Woods, Carmel, and camping in Yosemite.

The next phase involved prototype training, and once again, I had my choice of locations. I chose Idaho, having developed a liking to the West. Just before completing Nuclear Power School, I bought a new MGB sports car decked in British Racing Green. I loved it. Though it lacked power, it was a joy to handle.

I had a couple of weeks travel and leave time between Nuclear Power School and prototype training, so I checked out some camping gear from Navy Special Services at Idaho Falls and took a trip through Glacier-Waterton National Parks in Montana and on up into the Canadian Rockies. The highlight was being chased by an angry bull moose when I got his attention for a picture by tossing a clod of mud into the water by him. I tested my little MGB's acceleration making my escape.

Relaxed by my respite from the grind, I reported for prototype training. The C.O. once again invited me in for a personal visit. It seemed Rickover's concerns about me had not been dispelled by my efforts. In an eerie repeat of the Nuclear Power School C.O.'s meeting with me, the prototype C.O., Captain Nicholson, held some familiar-looking papers and repeated virtual the same litany. I repeated my script, informing the Captain of my agreement at Nuclear Power School. As at Mare Island, we came to an understanding.

¹⁴ R&R - Rest and Recreation.

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The Atomic Energy Commission owned the sprawling test site covering hundreds of square miles of Idaho's high desert scrubland that was punctuated by the Twin Buttes, extinct volcanic cones that rose from the desert plain; with Mount Borah, the highest peak in Idaho, casting its distant shadows. The Big and Little Lost Rivers really did disappear into the arid ground of the test site. The complex had several reactor test areas, separated by many miles. The area the Army had used was shutdown due to a serious reactor accident that had killed some workers. Another site in the distance conducted experiments to develop an aircraft nuclear reactor and spacecraft power plants. Several areas were dedicated to developing advanced reactor designs for civilian nuclear power plants.

I rode one of many AEC-operated buses from Idaho Falls out the site. Civilian employees paid a nominal monthly bus fee to avoid the wear and tear on their private vehicles. Military personnel got free rides – a real treat. The AEC had a fleet of buses going to and from the various areas and the towns of Idaho Falls, Pocatello, and Blackfoot, seven days a week around the clock. The tedious ride out to the Navy area took almost an hour each way. In the early spring and fall freezes and thaws, the highway bulged and the buses slowed to a lurching 25 to 35 mile per hour pace to minimize further damage to the road, lengthening the trek. I'd wait at a bus stop just down the block from my apartment in Idaho Falls. (There wasn't any government housing). Eventually a caravan of buses would wend their way west out of town into the rolling desert. Buses would peel off from the column to head for the various areas. (The Navy area, one of the most remote, was fifty miles from Idaho Falls).

The Navy site had several prototype reactors on it. These semi-ship sections in the middle of the desert seemed out of this world. The incongruity of replica parts of navy ships sitting out in the middle of the desert intrigued me. In a strange way, the rolling desert landscape and the roiling seas had parallels. The Nautilus prototype reactor, dubbed S1W,¹⁵ was housed in a large industrial type building. The prototype served as the engineering test bed to confirm the Nautilus's nuclear reactor design and to test its operation before putting a copy to sea. On the floor of the building, a large long tube-like section of a submarine hull protruded out either side of a large cylindrical tank of water. The reactor compartment sat in the middle hull section within the tank, with the engine room on one end and the auxiliary equipment room at the other end. The water tank provided shielding from the reactor's radiation, as well as adding some realism. The largest Navy building had a rectangular windowless tower section and housed the A1W¹⁶ prototype reactors. This consisted of a two-reactor complex that served as the engineering test

¹⁵ S1W, Submarine, 1st generation, Westinghouse design

¹⁶ Aircraft Carrier, 1st generation, Westinghouse-design.

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bed for the nuclear aircraft carrier, *USS Enterprise* (CVN-65)¹⁷. A third prototype area under construction housed a new submarine reactor plant design, and even more realistically than the *Nautilus* prototype, a submarine hull section floated in a large tank of water, in which it could be subjected to pitching and rolling motions. An administration building and a couple of Quonset hut barracks completed the complex. Chain link fences topped by barbed wire surrounded the area in the midst of the vast desert.

Wild antelope ranged through the scrub desert land. They were wily and tame enough to come right up to the fence line where some green grasses grew. I could slowly walk right up to them feeding on the other side of the fence, with just a foot or two of separation. They'd give a casual glance and, as long as I didn't make any fast motions, they would calmly continue grazing. However, if I approached one of the fence gate sections, even though it was not open, they'd bound away, white tails flashing. Their intelligence in identifying where humans had access to them amazed me.

I was not at all sure how I'd feel about life in the Idaho desert, being raised in New York City. However, I grew to enjoy the openness and feeling of freedom. I loved watching the sunrise behind the distant Teton Mountains on the eastern horizon, over a hundred miles away. These jagged peaks formed black spikes silhouetted by the morning sun. The changing play of light and shadow on the undulating desert sea mesmerized me. Winter snows blanketed the earth in a new look, blinding bright on sunny winter days. The desert bloom of green shrubs and bright flowers in the spring rains amazed me. A land of extremes, and arid for the most part; temperatures soared to close to 120°F in the summer heat, to arctic-like 15 degrees below zero, with blizzard wind and snow, in the winter. Through it all, we wore the same basic uniforms – thin khaki shirts and trousers. A memory that remains strong is huddling in the dark, buffeted by 40 to 50 knot blizzard winds, and pelted by driven snow in 15 degrees below zero temperatures waiting for an AEC bus at 5 a.m. I bought a civilian parka to wear over my thin uniform, since the Navy didn't issue us any winter clothing.

I was second senior student in a class of twenty or so officers. Two of us had fleet experience and had made Lieutenant, junior grade (LTJG). The other JG came from a diesel boat background. All of the rest were Ensigns who had completed Sub School and Nuclear Power School right after college. With our submarine career track in mind, we were assigned to train on S1W. Prototype training consisted of brief lecture classes on systems and procedures, followed by practical application, tracing out piping and wiring systems, and operating the equipment. Westinghouse employees and Navy staff assigned by Rickover's offices supervised the operations. The trainees, mixed with a supervisory cadre, stood 8 hour watches around the clock. We worked on a rotating shift basis, that consisted of 4 to 5 days of day shift, a day off, then a similar period of swing shift, a day or so off, and then into a grave-

¹⁷ CVN for Carrier Vessel, Nuclear; prefix for nuclear-powered aircraft carriers in the

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yard period, ending in a longer, 4 day rest period. We trainees worked a longer schedule than the staff. We spent several days at a stretch to study onsite without returning home during our "off hours." We didn't get the full rest periods off between shift rotations; instead, we had to study, study, study. For our extended stays out at the site, we'd bunk in one of the Quonset hut barracks. Typical of Admiral Rickover, it was cramped and Spartan. Jammed with bunk beds and lockers, it only lacked a dirt floor for that real homey feel. No question of radios or TV's for entertainment in Rickover's world. A section of the Admin Building housed a small cafeteria with limited hours of service (and equally limited menu). We quickly adopted the practice of most of the staff and brought lunch boxes and Thermoses for our bivouacs.

Due to my "understanding" with the C.O., I managed to take periodic advantage of the rest periods and although they discouraged trainees from driving private vehicles out to the site, would find occasion to drive my little MGB out the beeline highway to the site for a fast getaway to Yellowstone and the Tetons. I'd put my MGB into overdrive and floor the accelerator. The perky little car would top out at just over a hundred. The highway from Idaho Falls to the Tetons wended its way along the well-named Snake River, a fun drive in a sports car. An alternate secondary route cut away from the river into the mountains and went over Teton Pass. I preferred the road less traveled. At the pass, I'd find a spot to park and then wander the mountainside to find a quiet viewpoint, where I would sit beholding the expanse before me. I could see for over hundred miles. The Snake River glistened in the broad valley, fed by shiny tendrils of streams. Swathes of dark green forest broken by patches of tawny open rangeland spread before me under clear western skies. After a few hours of hiking and solitary meditation, I'd reluctantly return, reinvigorated for another run in the Rickover reactor rat race. The combination of these periodic respites and submerging myself into the daily routine and challenges of mastering the intricacies of nuclear reactor systems enabled me to set aside my resentment of Rickover's autocratic decisions.

These all too brief getaways meant a great deal to me, so much so, that I made a return pilgrimage twenty years later. This nostalgic return gave me a surprise insight into the working of my mind and memory. As I retraced my route, I recalled every twist and turn of the road; all of it still familiar after all these years - so I thought. I turned off from the river route to my favorite cutoff over Teton Pass. Soon I found myself on an unfamiliar stretch of highway that made me think I'd lost my way. I couldn't recall this part of the drive. The road ran straight and level for 8-10 miles through the small town of Driggs. Then it began an again familiar winding climb over the Teton Mountains. Evidently, in a mental quirk, I'd erased this relatively mundane and unchallenging section from my memory. Just as I used this route as a mental escape from my Nuclear Power routine, I "spaced out" this, to me boring, stretch of highway. Only the fun sections of the drive had registered in my memory. A bit of selective recall, this left me wondering where my attention was when I drove that section many years ago, and questioning the accuracy of

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memory.

When we started, the S1W reactor core was being refueled, and the plan was to have the work finished in time for us to complete our qualifications. Most of the plant could operate with alternate sources of steam, water, and power, and we did our training without actual reactor operation. As officer trainees, we had to complete the requirements for all watch stations and enlisted jobs, as well as Engineering Officer of the Watch (EOOW)¹⁸ qualification. About 4 to 5 months into our training, we had completed most of our qualifications. Our final hurdles were operating the reactor itself as Reactor Operator and EOOW. The staff completed the reactor refueling itself and only needed to install the heavy lid and seal it. This was expected to take only a few days. Fate stepped in, as some of the civilian workers went on strike; notably, the crane operators. Hoping for a fast resolution, the staff kept us practicing things that didn't require actual operation of the reactor itself. To keep to the schedule, management decided to seat the reactor vessel top using Westinghouse engineers in lieu of the striking crane operators. A fine plan, except that the reactor cover, (which weighed several tons), "bounced" into place. Everything came to a screeching halt. When Admiral Rickover got the word (a phone call away) he hit the stratosphere. I can imagine his reaction and the ensuing ass chewing. I pitied the folks - on the receiving end of that nuclear explosion.

The next day, Friday, my class assembled in a classroom with the senior instructor who calmly told us, "Due to the problem with getting the reactor operational, we're re-evaluating the options and you've got the weekend off. Everyone report back Monday morning for day shift and we'll have more word for you."

My fellow trainees erupted with cries of delight at this unexpected treat, but not me. Free time didn't exist in Rickover's world where excellence was barely satisfactory and he always demanded more effort. I smelled a rat. When the instructor exited, the guys let go with even greater glee. I quietly stood up and walked to the front of the classroom to get their attention, and calmly said, "Enjoy it while we can guys. Something's fishy here. This isn't the Rickover way. Be prepared for tough news Monday. Till then, have fun." My words sobered the group as an edgy wariness tempered the short-lived elation.

Sure enough, on Monday morning we heard, "Gentlemen, due to the delay in getting S1W operational, you're shifting over to A1W to complete your qualifications. You will qualify dual plant (both reactors). You'll restart your quals immediately and you'll be on a fast track schedule, which I'm passing out, along with your new crew assignments."

I thought the guys were going to reenact "*Mutiny on the Bounty*" in the desert of Butte County. Further exacerbating the situation, they expected us to

¹⁸ Engineering Officer of the Watch (EOOW) (pronounced "Ee-ow"). The officer in charge of the engineering plan for a watch section.

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start from scratch, as if we were brand new trainees, ignoring our four months of work. The carrier *Enterprise* had eight identical A2W reactors, operating in pairs, to power its four shafts. The A1W prototype had two reactors, but each reactor and associated auxiliary equipment had different versions – to test out alternative equipment designs. They expected us to qualify on two differently designed reactor plants in about half the usual time!

I got with the other JG and we proposed to request the C.O. to grant the class credit for items that were common or transferable between S1W and A1W. We organized the guys and combed through the qual sheets, identifying those items. We quickly developed a list of items that covered at least one-third of the quals, plus some less obvious items for possible consideration. We got our audience with the Captain. We pointed out that his mission meant qualifying us as soon as possible and getting us out to the fleet. We argued that the Navy qualified us on prototypes, which differed in varying degrees from the ship reactors. In many cases, people initially qualified on surface ship prototypes and went to submarines, as they now planned to do with us. Captain Nicholson accepted our proposal and even challenged his staff to identify more items for full or partial credit.

We returned to our classmates with that bit of better news, easing the crisis. I found it ironic that the guy that Rickover went to pains to ensure wouldn't contaminate other students with a jaded attitude, acted as cheerleader for the group and exhibited the most "can-do, we shall overcome" attitude. I thrived under the circumstances and improved my class position, ending up as one of the earliest to qualify in my class.

Possibly, because of the S1W refueling problems, the grand old man decided to make an inspection tour of his ships in the desert. The place was a beehive of frantic cleaning and polishing and off-crew rest periods were cancelled. The area was normally shipshape, and this effort brought it to its Sunday best. On the day of his inspection, the thin high desert air filled with tension. As we sat in a classroom, the door suddenly swung ajar. We got a jack-in-the-box glimpse as that gnomish head popped into view, swiveled right and left, and just as quickly popped back out of sight as the door snapped shut. That was it.

As time passed, the pressure to get us qualified grew, leading to yet another "Rickoveran" quirk. We were needed in the fleet ASAP as more nuclear subs, especially SSBN's, entered the fleet in rapid succession. As I mentioned, when we shifted to A1W they expected us to qualify to operate both the "A" and "B" reactors. The staff increased our pace (something we hadn't thought was possible). They notified us of a major progress review at the end of the week, with stern orders to get sign offs on as many items as physically possible by 4 p.m. Friday afternoon. Guys busted their humps in a frenzy, afraid of the consequences. Some practically elbowed others out of the way to get one more checkout signature down to the last possible minute. Then we turned in our qual cards for the review. We waited in dreaded anticipation as the

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staff poured over our records. At about 8 p.m. they called us for a meeting where, with typical Rickover program logic, they announced that everyone past a particular point would continue their dual plant track. Anyone not up to that point would qualify "single plant" (working on one of the reactors only). The gnashing of teeth was palpable as guys who had elbowed their way to their latest checkout found the guy they beat out getting a half workload from this point on. Those who lost the race to the line cutters probably stifled a smug smile over the warped justice of the Rickover world and their competitive classmates. I hadn't felt the crush as much as most of the others, as I was well ahead of the curve, and I needed only to stand a few watches as EOOW on each reactor to get my last signatures.

They "graduated" us individually as we completed our qualifications. I was more than ready to leave the prototype, get to a sub, and back to sea. We selected our next duty station from a list of ships in the C.O.'s office. We could select any available ship on that list. When my turn came, I spied a diesel boat down the list of nuclear subs. It was unusual, but not unheard of, to assign a nuclear trained officer to a diesel boat to get his gold submarine officer's dolphins. I jumped at this stroke of good fortune and left the C.O.'s office with a broad smile. Later that day, the C.O. summoned me to his office again. I thought it was to wish me goodbye. As I entered he said, "You'll have to reselect your ship. I have to submit all ship selections to Admiral Rickover and he wants you to reselect from this list."

I furrowed my brow in confusion. Hadn't I just made my pick this morning? I quickly scanned the list for "my" diesel boat. It had disappeared from the list. The list contained only nuclear subs. "What happened to the diesel boats on the list, Captain?"

"They've been removed from the list, you've got to select from the boats listed there now. Admiral Rickover says you can't go to a diesel boat."

As I pondered this turn of events, I realized that Rickover reveled in his reputation of an iconoclast, but he didn't tolerate independence by his minions. Rickover was riding herd on one of his rebels and keeping me in his corral was important to him. Frustrated, I scanned the list, frowning and tight-jawed the whole time. The Captain left me alone in his office as I leaned over the table scrutinizing the list. After a few minutes, I selected a Polaris sub home ported in Groton, Connecticut. I liked the Groton area and looked forward to duty in the Atlantic Fleet. From the information provided, I knew the ship physically operated out of Rota, Spain.

I readapted to shipboard life, progressing rapidly in my qualifications. My C.O. selected me as the Sea Detail and Battle Stations Officer of the Deck (OOD). This meant that I was OOD whenever the ship departed and entered port or went to General Quarters. I served in every nuclear Engineering Department billet. I was one of the two EOOW's for our Nuclear Power Examining Board (NPEB), a grueling week of drills, tests, interviews, and inspections by a

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senior group from Rickover's offices. The NPEB was likened to the Spanish Inquisition. We passed the ordeal with flying colors. Yet Rickover denied my C.O.'s recommendation to qualify me as Ship's Nuclear Engineer Officer. This would have been my next step after submarine and nuclear EOW qualifications. I also filled in as Acting X.O. when the Executive Officer went on leave.

As an example of Rickover's control of the Naval Nuclear Power Program, we had a problem with our nuclear reactor while my sub was in Spain, readying for a patrol. We reported the problem and soon received a reply message telling us to make a classified telephone call to Rickover's staff offices at a specific time. Rickover's rules banned having outside telephones in the Engineering spaces. My C.O. stationed himself aboard the sub tender that we were moored alongside. He was on a telephone connected to Rickover's staff in Washington, D.C. He also had another Navy phone connected to our ship's wardroom, where our X.O. sat; the phone to the C.O. to one ear and our internal ship's phone to his other ear. I was back aft in the Engineering Control Room, on the other end of the line with the X.O. I relayed the orders I got from the X.O. to the watch standers and reported the results back to the X.O., who passed it up the chain. Compounding the cumbersomeness of this bizarre communications chain, each of us followed Naval Reactors protocol and repeated the information back verbatim to get confirmation before passing it on or carrying it out. We kept this up for over an hour until the NR people had enough information.

I shook my head at the contradiction in conducting operations of one of the most technically advanced and complex ships in the world in this manner. The rules were made by Rickover's staff, why didn't they waive the outside phone rule for this special circumstance and establish direct communication between D.C. and our engineering control room? Instead, the two most senior and experienced nuclear-trained officers on my ship, the C.O. and X.O., acted as expensive telephone operators, rather than directly supervising the operation. What a way to run a high-tech organization!

I had become much more philosophical about my time in submarines and nuclear power. I enjoyed the camaraderie and the high level of competence of my shipmates. With my experience in destroyers, I found myself telling my shipmates that those sailors they "disqualified" from submarines and nuclear power would be welcomed in the fleet as above average sailors. In retrospect, I realized that those times were amazing in the confluence of elite talent and ability in a group whose ages spanned less than twenty years. I had learned a great deal about myself and how hard I could push myself. I felt confident about my abilities. Immersed in the daily routines, I sometimes found myself examining my surroundings and feeling a sense of Buck Rogers's atmosphere. Life undersea seemed a bit like what I imagined life on a space ship would be.

I only saw Rickover once during those years, and then I was in a command performance audience as Rickover swept into Groton to get fleet feedback on the

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design of the new Los Angeles class attack submarine. All nuclear-trained officers in the area were assembled in the Sub Base auditorium for the presentation. A brave soul or two stood up and spoke out that the feedback was a farce. They argued that the ship's design was set by Rickover's office and the size of the nuclear plant, leaving the rest of the ship as an after-thought. Rickover cut them off at the knees. One C.O. broached a different topic, complaining publicly that some of his junior officer were being paid more than him due to Rickover's program of bonus payments to retain needed nuclear-trained junior officers (J.O.'s).

Rickover's response was brutally direct. "I don't need old guys like you! I've got four or five waiting who'll leap to get your job. I need J.O.'s. So sit down and shut up!"

There was an audible gasp from the assembled officers, and such open talk ended with suppressed murmurs. I was impressed that anyone would openly dispute Rickover, and I wondered about the fate of those who had the audacity to speak out.

Due to submarine school and nuclear power training, my obligated duty was extended an equivalent time so that the Navy could recoup its investment in me. As soon as my obligated time was up, I submitted my resignation from the Navy. In my resignation letter I echoed my previous words about having been willing to commit to twenty years if I wasn't forced into nuclear power. Rickover's reply letter refused my resignation, "You serve at the pleasure of the President. Your resignation is on indefinite hold, based on the needs of the Navy." My C.O. pressed several times for my formal designation as Ship's Nuclear Engineer Officer. Admiral Rickover had a good tickle file or a great memory; he held fast and told my C.O. "only if he withdraws his resignation." This stiffened my resolve to resign from active duty. In the meantime, my C.O. made me "Acting Nuclear Engineer" in charge of the ship's Engineering Department for a refit period, but that was obviously only a temporary designation. However, after an almost two-year additional involuntary extension, my resignation was accepted and I transferred to the Naval Reserve.

I went on to get my MBA and the civilian world. Once again, I found that despite a desire to stay away from Rickover's world he continued to intrude into my life. My naval nuclear power background was too valuable an asset to throw away and I took a job with a company that made the nuclear reactors for the Navy. I rationalized this as making the best of things and that as a civilian I could always quit and find a new job. I ran into Rickover a few times over the next several years. I remembered him, although he showed no signs of recognition. He hadn't changed his often-fickle ways, and seemed to relish keeping people off balance. Rickover's power grew over the years, he defied Chiefs of Naval Operations, the head admiral in the Navy; even presidents loathed to take him on. President Reagan wanted to retire Rickover, but decided that the effort wasn't worth the political capital it would take to accomplish his ouster. Rickover did many good things for the Navy and the

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country, but he was a prime example of staying in power too long. After far too many years in power, Admiral Rickover finally was forced into retirement, with the extraordinary perk of a Navy-furnished office. The Navy learned its lesson, and since has limited the terms of admirals as the head of the Naval Nuclear Program.

My moment of repressed retribution came many years later when I'd finally made my four stripes as a Navy Captain in the reserves. My reserve duties sent me to D.C. and I had business at the Washington Navy Yard. The Yard functioned as a base for several Navy commands, the Navy Historical Center, and Naval Museum, as well as providing official housing quarters for Navy HQ brass. Walking through the Yard, a reserved parking space sign caught my eye. A civilian car occupied the spot. I did a quick once around periscope sweep and the coast was clear. I stepped up and loosed a salvo of three energetic kicks to the car's tire. I felt good, being bad, and marched off with a smile, leaving the sign in my wake. Its bright gold four stars and lettering on a dark blue background read "ADMIRAL RICKOVER."