

Joe Colvin: Continuing on with the agenda

The 56th president of the American Nuclear Society will continue his predecessors' agenda in promoting the society as a key and relevant player in the new-build era.



BY RICK MICHAL

THE “C” IN Joe Colvin’s name could stand for continuity. As the 56th president of the American Nuclear Society, Colvin says that he will continue the agenda set by his immediate predecessors—ANS presidents Don Hintz (2007–2008), Bill Burchill (2008–2009), and Tom Sanders (2009–2010)—to ensure that ANS is a key player in the nuclear renaissance and the new-build era.

At age 67, Colvin is “theoretically retired,” he said, having left the Nuclear Energy Institute in 2005 as its president and chief executive officer. But he is still on the go. Recently, upon his return home from a business trip, his wife, Bunny, said to him, “Do you realize you’re going to be gone 16 days this month?”

After his many years with NEI, Colvin remains very active in the industry. He is on the boards of Cameco Corporation, the world’s largest uranium company, and US Ecology, a hazardous and radioactive waste treatment disposal company. He also is on the boards of not-for-profit organizations such as the Foundation for Nuclear Studies, which was set up by NEI to help provide the U.S. House and Senate with information on nuclear technology.

Naval days

Colvin graduated from high school at 17. “I found high school quite uninvigorating,” he admits. “It was boring.” He considered going to college, but his family wasn’t well-off, and he didn’t have the grades in high school to earn a scholarship. “And I wasn’t really ready to go to college,” he said. “My



Young sailor Colvin

mental attitude wasn’t there.”

Colvin had grown up tinkering with anything mechanical—taking things apart to see how they worked. When he was 14, his parents bought him a 1935 Ford, using money out of his own savings account. “I was working by the time I was 10 years old,” he said. “I worked in local amusement parks, and when I was 12 I worked in a landscaper’s nursery. My parents bought me the car as a project. Over a few years, I ended up completely redoing the body with 19 coats of hand-rubbed lacquer. I rebuilt the engine. By the time I was 16, my friends and I were involved in quarter-mile drag racing.”

Colvin knew that he needed to develop a skill or a career, so he joined the U.S. Navy to become a pilot. His eyesight, however, wasn’t good enough to put him in the cockpit. “I could fly in the backseat,” he said, “but my theory was that if I was going to be on the plane, I was going to drive.”

The Navy suggested an alternative. “Since you can’t do that, how would you like to go in a submarine? You can fly underwater,” Colvin remembered. And so at age 17, he entered the submarine program and was sent for six months of training to Missile Technician “A” school in Virginia, where basic proficiency in electronics and missile guidance systems is taught. “The

training combined the nuclear weapons side of the business and the electronics, digital controls, and guidance systems side,” he said. “It had to do with engineering, and I knew I was cut out for that.”

His first assignment after training was on a diesel submarine equipped with a Regulus nuclear missile. Colvin said that during his first year on the sub, he figured out that the only difference between the officers and the enlisted men was the gold on the officers’ sleeves, and the fact that they had earned college degrees, while most enlisted men had not. “At that point I made a decision to finish out my Navy career and go to school,” he said.

In the meantime, however, the Navy established the Navy Enlisted Scientific Education Program, which in its first year selected 100 enlisted men to enroll in four-year programs at 22 colleges and universities in the United States. “It was total immersion—spring, summer, fall, winter,” he said. “Your job was to go to school. I was lucky enough to get picked for the program, and so I stayed in the Navy.”

Colvin selected the University of New Mexico (UNM), in Albuquerque. “It was one of the top schools for electrical engineering, which is what I wanted to major in,” he said. It also was his introduction to New Mexico, a state that would eventually become his home.

Colvin spent four years at UNM as an undergraduate, and then worked on his master’s degree in nuclear engineering until Adm. Hyman Rickover, the “father of the nuclear Navy,” told him to get back on a submarine and out to sea. During his university career, Colvin was promoted through the ranks to chief petty officer, which was such a rapid ascent that it is nearly unheard of even today, according to Colvin. For each of his career advancements, from chief engineer to commanding officer of a nuclear-powered submarine, Colvin was interviewed by Rickover, who hand-picked every officer for the Navy’s nuclear program.

While attending UNM, Colvin worked nights for Eberline Instruments, a company that made radiation detection equipment and other components. His job was to calibrate and repair the company’s digital equipment for Sandia Laboratory (which became a national lab in 1979) and Kirtland Air Force Base.

Colvin finished school in 1969 at age 27, and upon graduation he was sent to the Navy’s nuclear power school in Vallejo, Calif., for six months of training, and then to another six months’ training on a prototype reactor in Idaho. After that, he was assigned to a submarine

docked at Pearl Harbor, Hawaii.

The Navy turned out to be “a great path” for Colvin, he said, adding that it was tremendously hard work, but rewarding. The biggest difficulty was the family separation. “There were times when I was gone for a year at a time without coming home,” he said. “I would come home to Hawaii and would be there for a month. The next thing you know I would come home at night and say, ‘Honey, I’m leaving in the morning.’ ‘Where are you going?’ ‘I can’t tell you.’ ‘How long are you going to be gone?’ ‘I don’t know.’ It was really hard, especially on the family.”

Musical roots

Colvin was born in November 1942 in a small town in Oklahoma, where his family was in the business of bottling the Dr. Pepper soft drink. When Colvin was three years old, he and his mother traveled by train to California to visit his father, who was serving in World War II. On the way, Colvin played with a little girl who became violently ill during the trip and had to be taken off board. Two weeks later, Colvin came down with polio, and he was paralyzed from the waist down on his right side for about three years. “I was in the hospital for about six months, and in the pool every day for therapy,” he said. “I got shots every day, and I wore braces for several years. I’m really lucky to have come out of it.”

Colvin grew up in California’s San Fernando Valley, in the Toluca Lake–North Hollywood area. His entire family—his mother,



Baby Joe in 1943 taking first steps to a big future

father, stepmother, stepfather, aunts, uncles, and brother—were performing artists, either actors, actresses, dancers, or musicians. His father was a musician for Paramount Studios, and his mother played the marimba. And the man who became Colvin’s stepfather, Earl Hatch, was known as the unofficial “father of the marimba” in the United States. Hatch brought the marimba into prominence, and for many years he worked for Disney, doing percussion for the movies *Fantasia*, *Snow White*, and other classic Disney films. Colvin’s sister was a harpist, and his brother played the upright bass.

Colvin’s parents required that he take piano lessons. “We lived in the back of a large music studio,” he said. “Every morning I would get up an hour earlier than any of my friends and go into the studio to practice classical music on a concert grand piano. My stepfather would lie in the back with his eyes closed, critiquing every note I played.”

Colvin took piano lessons for nine years, and although he can read notes well, he admits that he plays mechanically, not artistically. His brother, on the other hand, studied piano for only one year, but he became a professional musician, playing with the band Three Dog Night and artists Madonna and Dan Fogelberg, among others.

Colvin himself also rubbed elbows with Hollywood celebrities. He helped cut the grass at the home of Bob and Dolores Hope, and he grew up around the corner from Annette Funicello, who was a good friend.

His wife’s real name is Carole Anne, but she goes by “Bunny.” She was born around Easter time, and when her parents brought her home from the hospital, her older brother said, “She looks like a little bunny!”



Wedding day in 1962 for Bunny and Joe

The name stuck. Bunny grew up in the South, and everyone in her family has a nickname. Her older brother is Bubba, her sister is Treatie, and another brother is known as Fella.

While Colvin was going to the Navy's "A" school in Virginia, he worked part time at a race track that featured go-karts that traveled 60 to 70 miles per hour on the straightaway. He got to know a family that frequented the track—a husband and wife with two young children. Another occasional visitor that Colvin chatted with was a blond teenage girl who drove a Karmann Ghia. One night the family invited Colvin to their home for Sunday dinner. After they finished dinner and he was about to leave, the blond girl walked in the door. It turned out to be Bunny, the family's oldest daughter.

Colvin and Bunny started dating, and they married in 1962, when he was 19 and she was 16. They have been married 48 years.

Two months after their wedding day, Colvin went to sea for about three months. It was mid-October 1962, the time of the Cuban Missile Crisis, a confrontation between the Soviet Union, Cuba, and the United States. In September 1962, the Cuban and Soviet governments had begun to surreptitiously build bases in Cuba for a number of ballistic nuclear missiles with the ability to strike most of the continental United States. The United States announced that it would not permit offensive weapons to be delivered to Cuba and demanded that the Soviets dismantle the missile bases under construction or completed in Cuba and remove all offensive weapons.



Bunny and Joe in Hawaii in 1974



Young dad Joe with daughter Melissa in Albuquerque in the mid-1960s

"I was out at sea, and my new wife was back at home," he said. "At that point, it was really tenuous. We figured that if we had to launch missiles, we would survive, but no one else would. Psychologically, it was a troubling dynamic."

The Colvins have two adult children. Daughter Melissa lives in Washington, D.C., and is the head of sales and marketing for Urenco, the European uranium enrichment company. She and her husband, Chris, a marine biologist who works for the Pew Foundation, are the parents of the Colvins' 13-year-old grandson, Devon. The Colvins' son, Bob, lives in Boulder, Colo.

NEI involvement

In the early 1980s, as Colvin's Navy career was winding down, he interviewed with Stone & Webster Engineering in Boston, but he leaned more toward working for the new Institute of Nuclear Power Operations (INPO) because it seemed to be a natural fit for him. During his final two and a half years in the Navy, Colvin was on the Nuclear Propulsion Examining Board, a group of 16 hand-picked officers who went out in teams to evaluate the safety of every U.S. Navy nuclear ship, submarine, and shore base around the world. Colvin says it was a great experience.

"It was interesting to me because nuclear submarines—the reactors and the operations—are very standard," he says. "And yet, you would go onboard this ship versus that ship and you could see how differently they were operated, how successful or unsuccessful they were. It was all basically because of management. It was all because of the people. The differences had to be the people, because the processes, procedures,

and manuals were all very strict. That was eye-opening to me."

The examining board was feared by the rest of the Navy, Colvin said, because it had total autonomy. "If we thought a ship or submarine was not operating safely, we would have it returned to port and shut down, and typically the commanding officer would be relieved," said Colvin, adding that the board was essential to preserving the safety of the operations of the ships.

After the Three Mile Island accident in 1979, the nuclear power industry decided it needed something similar to the Navy's board to look at the safety of nuclear plant operations and increase the level of operations above that required by government regulations. That effort led to the formation of INPO, headquartered in Atlanta, Ga. "I went to work there in the early

stages and helped get INPO off the ground, running the Operations Division," he said. "We'd look at the operations of a plant, the senior reactor operators, reactor operators, and all that side of the business." Later, he took over the Technical Support and Design Engineering side of INPO, which involved the engineering work process. After that, it was over to the Construction Project Evaluation Division.

By 1984, the interface between the industry and the government regulators—the Nuclear Regulatory Commission in particular, according to Colvin—mainly involved the vendors—"the Westinghouses, the General Electrics, and the Babcock & Wilcoxes"—with little participation from the utilities. Yet, Colvin said, in the aftermath of



Officer Colvin of the U.S. Navy



Bunny and Joe in Hawaii in 1995

the TMI accident, the utilities were being asked to do things at nuclear power plants that didn't make sense. "It was a flood of requirements and changes," he said. "One change would be ordered, but then another course was set soon after that. It was just dragging the industry down."

So INPO helped set up a group called the Nuclear Utility Management and Human Resources Committee (NUMARC), which consisted of a representative (usually the president or chief executive officer) from each of the 55 nuclear utilities that existed at the time. "We got all 55 of them together and said, 'We have to take charge of our destiny,'" Colvin said. It was the beginning of the industry's becoming responsible for its future.

The effort worked so well as a committee that it was decided in 1986 to set it up as a permanent organization, also called NUMARC, in Washington D.C. Colvin established the new organization and was charged with running it. Other industry initiatives also were changed—the Atomic Industrial Forum was dissolved and the U.S. Council for Energy Awareness (USCEA) became more of a public group. Then in 1994, NUMARC and USCEA were combined into the new Nuclear Energy Institute. Colvin was named executive vice president and chief operating officer. Phillip Bayne, a utility CEO, was named president. In 1996, Colvin took over as president and CEO of NEI, and he stayed there until his retirement in 2005.

The highlights during his time at NEI include the work done to find a solution for high-level waste—the now-canceled Yucca Mountain repository; the involvement in license renewal for power plants, doing all the analytical work along with the Electric

Power Research Institute to get the plants ready to extend their lives; promoting new reactor designs in anticipation of the new nuclear build, including the changes to legislation and the regulations in 10 CFR Part 52, which spells out the licensing procedure used for all the new build; and improvements in the regulatory processes between the industry and the NRC.

Most of Colvin's time in his later years at NEI involved working with the political system, talking with senators, congressmen, and various committees. "I probably spent 75 percent of my time dealing with the administration or on Capitol Hill, looking at how to bring about positive change to the industry," he said.

One major change for the industry will come when new reactors are built. Colvin said that he thinks that utilities are going to line up for new plant orders after the first one is constructed in the United States. "Once the decision is made to build the first plant and we show some real success in that we can actually make these regulatory systems work efficiently, then there is going to be a tremendous queue," he said. But, he added, everybody wants to be second. "They don't want to be first, because of the huge risk."

A new nuclear plant will cost \$8 billion to \$12 billion to bring on line. If a utility has a market capitalization of \$35 billion, investing in the new plant will take one third of it. "The decision for the utility's board is going to be a tough one," he said, "which is why we need the incentives that the government is offering, such as loan guarantees."

Regarding new reactors, Colvin said that ANS supports all of the new reactor designs. "It's not up to the society to pick a technology or reactor size," he said. "We need to provide the technical and scientific

support so that all the designs have an opportunity to be successful."

Colvin said that he is confident that the lack of a national repository for spent nuclear fuel is not going to be an issue for the new reactor builds. "We can store this material safely at the sites," he said. "Most of the people I talk with at the utilities don't see that as a significant issue."

He said that there is an interesting dichotomy in shutting down the Yucca Mountain Project and at the same time needing more nuclear power plants because of climate change. "Nuclear has a great opportunity today because of the recognition of its importance to climate," he said. "I think that's going to overshadow a lot of what is going on regarding the waste issue concern."

Also a boon for nuclear is the prospect of the tax base and the jobs created in local populations through the construction of new nuclear plants. "If you take Calvert Cliffs in Maryland as an example, they are talking about building a U.S. EPR. There are going to be 4000 construction jobs over a period of about six to seven years in that area, and about 400 to 500 permanent jobs," he said. "Calculate the economic benefits to that community. The people who live in the area already see it because of the existing Calvert Cliffs plants. Hearings were held about the new reactor build in that area a while back. Antinukes who came in from outside the local area were shouted down by the public. The people said, 'This is our plant. This is our area. You go home.'"

Colvin said that for every population center around the existing plants, public sentiment is the same. "We're going to build all the first new plants at existing power plant sites," he said. "I'm very optimistic. In my view, the local population is going to be very supportive and is not going to have an issue that would cause the new plants not to be built."

In the 1960s and early 1970s, ANS played a major role in the licensing of the current fleet of nuclear power plants, Colvin noted. "The nuclear expertise resides in the industry," he said. "All of our scientists, engineers, and technical people that are involved are the heart of the society. In the early days, those people were called upon to support the society, and they were very active in supporting it. Recently, however, this hasn't been the case because new plants haven't been built."

Colvin said that he remembers being visited by various ANS presidents over the years when he was with NEI, and each one would have a different agenda for what they intended to do while in office. Then came Don Hintz, ANS's 2007–2008 president, who established ANS's Utility Integration initiative to get utilities more involved in the society. Since then, for continuity's sake, each of the succeeding presidents—Bill Burchill, Tom Sanders, and now Colvin—

has agreed to maintain society programs and activities in a continuum.

ANS has to be viewed as the “go-to” place for independent scientific and technical input, Colvin said. “ANS can’t be political, and it shouldn’t be,” he said. “ANS’s views can be heard by the policymakers, but they should be independent views.”

Colvin thinks that there is an opportunity to ratchet up the involvement of ANS’s local and student sections. “I go to local section meetings and ask the attendees when was the last time they invited the city’s mayor. It usually turns out that the mayor was never invited, nor were the local officials or the newspaper editors,” he said. “They should be invited, not to twist their arms on something, but to put a positive face on the industry.”

Current day

Now residing permanently near Santa Fe, N.M., Colvin loves being outdoors. He and Bunny go hiking and walking, and he plays tennis and golf. “I’ve played tennis all my life,” he said, including on the UNM men’s team when he was a student at the university. “I really love it. I can go out and play two or three hours at a pop and feel great.” He had one of his knees replaced a few years ago and it got him back to top form again. “Probably the best thing I ever did was to fix that problem,” he said. “I had a



Grandpa Joe and grandson Devon in the late 1990s

chronic knee problem all my life. I was injured playing high school football.”

Bunny, for the most part, raised the family for all the years that Colvin was out at sea. In 1982 she became involved in the fitness business and joined a group of women in Atlanta to start a step-aerobics program. When the Colvins moved to Washington, D.C., she

and a friend opened two fitness centers in Annapolis, Md., where the Colvins lived. Bunny has given up the aerobics business, but she is active in the arts in Santa Fe.

New Mexico was attractive to the Colvins because of its lack of humidity and mosquitoes. “And we love the culture and the food here,” he said. “We started spending more and more time in Santa Fe and finally decided that we should relocate.”

The thing that probably tipped the scale in favor of settling in New Mexico was the house that the Colvins eventually purchased. Someone had mentioned that there was a house for sale that had an indoor tennis court. The house turned out to be a historic compound made up of adobe-style buildings, including a full indoor tennis court, that is listed on the National Register of Historic Places. It was built in 1918 by Portuguese artist Carlos Viera, who is credited with defining Santa Fe’s pueblo revival-style architecture, which is mandated for the city’s historic district. The site needed some work, and the Colvins were up to the challenge of renovating it. Today, when Colvin isn’t busy playing tennis, he rents out the courts to teaching pros in town.

But when the court isn’t rented out and Colvin isn’t traveling, he can usually be found on the court, hitting tennis balls, one after another, to keep his game sharp—and for continuity’s sake. **IN**