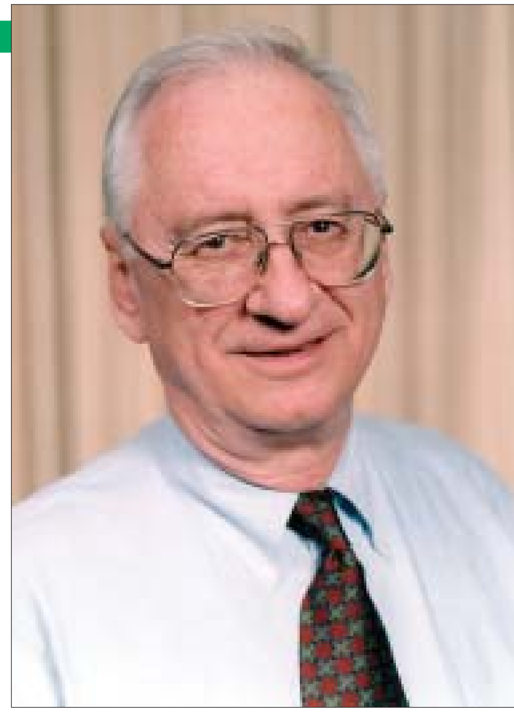
Profile

Foulke: Capping a career

Longtime Bettis staffer Larry Foulke brings his formidable technical and personal skills to a year-long term as the 49th ANS President.



2003–04 ANS President Larry Foulke

By Patrick Sinco

Fifty years ago, while President Dwight Eisenhower was en route to New York City to address the United Nations General Assembly and making last-second changes to the draft of his speech, Larry Foulke was a teenager whose life, like that of thousands of other engineers-in-the-making, would change on that day.

Eisenhower bought some time by ordering his pilot to circle the city for 30 minutes. His assistant wasn't able to type up a clean copy in time, and the secretary of state was among those tasked with mimeographing and stapling together fresh copies of the speech as they neared LaGuardia Field.

For a nation, a world still unsettled by the display of might less than a decade earlier in the dropping of two atomic bombs on Japan, as well as by the ensuing escalating arms race between the twin superpowers of the world and its possibility for creating worldwide holocaust, Eisenhower was preparing to announce what he called a "hopeful alternative." And for that he needed the extra half hour.

"The United States knows that if the fearful trend of atomic military build-up can be reversed, this greatest of destructive forces can be developed into a great boon, for the benefit of all mankind," Eisenhower said the afternoon of December 8, 1953, before the diplomats gathered in midtown Manhattan. "Who can doubt that, if the entire body of the world's scientists and engineers had adequate amounts of fissionable material with which to test and develop their ideas, this capability would rapidly be transformed into universal, efficient, and economic usage?"

The subsequent flowering of collegiate nuclear engineering departments across the country in the wake of Eisenhower's "Atoms for Peace" speech, as it was immediately referred to in press reports, touched on a university within a day's drive of Foulke's home. Within two years of Eisenhower's imploring of "the miraculous inventiveness of man," Foulke would be enrolled in the new program.

New ANS President

Today, Foulke—who last month began his one-year term as the 49th ANS President—is a consultant in reactor physics at Bechtel Bettis, where he has spent a quarter century of his career. Until recently, he had been a manager, either at Bettis or for the nuclear arm of Westinghouse Electric Co., since 1972. "With that career in management, I always had this concern that I lost my technical skills. And now I'm back in a position where I get to use my technical skills again. I'm pleased to say I haven't lost it," Foulke said recently, providing an example of his uncommon blend of assurance and humility, which brings equal readiness to his admissions of feat and fault.

He spoke to *Nuclear News* in the lobby of a hotel just outside of Washington, D.C., while he was in town for the ANS board meeting. Passersby—a former ANS president, a Latin American industry titan, the society's executive director—stopped to say hello to Foulke, a fit-looking, bespectacled, and altogether affable nuclear engineer in his mid-60s.

Politeness isn't the only evidence of Foulke's deep midwestern roots. He also peppers "Gee whiz" and "By golly" into conversations. And the occasionally loping modulations of his words can only spring from a source within a few state lines of the Mississippi River.

But don't let all of that fool you. Foulke possesses the kind of fierce intellect that brings the son of an agricultural partsman to the nuclear engineering doctoral program at the Massachusetts Institute of Technology, to the laboratory that designed pioneering reactor plants, to the leading edge of post–Three Mile Island nuclear plant operator training, to a one-year term as president of a scientific society.

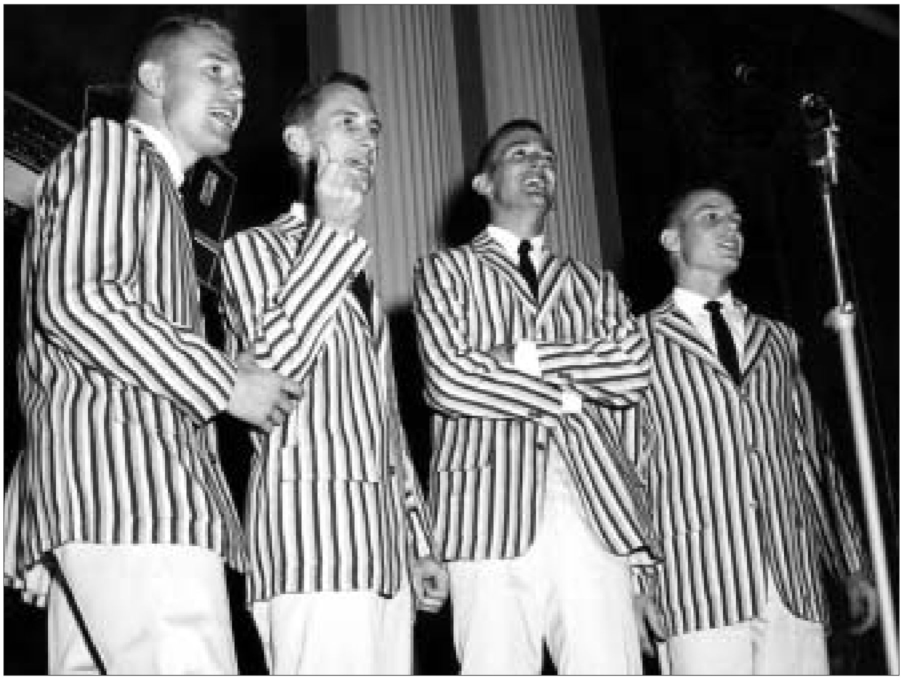
Young partsman

Larry Foulke was born in south-central Kansas in the years leading up to World War II. His mother, a registered nurse, retired after giving birth. Foulke's father worked for International Harvester as a partsman and bookkeeper. The family moved around a bit, living in several communities throughout Kansas and Oklahoma, before settling into Kiowa, Kans., a dusty farming community of around 1400 people, when Foulke was around eight years old.

Growing up, Foulke was what he called the youngest partsman for International Harvester in the United States. Hired out by his father for 10 cents an hour beginning in the third grade, Foulke would work behind the counter and, when called on, replace the gasket in a fuel pump of, say, a Farmall WD9 tractor.

As he got older, Foulke worked the same summer jobs available to all young people

Cheeeeese: Foulke in Pratt, Kans., in 1939 ("Ready for Sunday School," the back of the photograph reads in fading ink).



Foulke singer: The Four Delts (Foulke second from left) entertain at the Big Eight Talent Show, circa 1959.

at the time in southern Kansas: riding tractors, working harvests, lifting hay bales. By the time he reached high school, he knew he wanted no part of that life. Foulke boasts of being the only boy in his graduating class who was not a member of the Future Farmers of America. "I just didn't want to farm," he said. "I wanted to do other things."

Although slight at 130 lb, Foulke lettered in four sports and quarterbacked his 11-man high school football team—which he said he managed because there were only 25 kids in his class. He also took to vocal music and the trumpet, which he played in the school swing and marching bands. By the time he was a senior, Foulke was offered a music scholarship to attend Wichita State University. He turned it down. "Oh, I would've ended up being a secondary school teacher," Foulke recalled. "I didn't want to teach music. I love music. But that just had no allure.

"I was a good student in high school. And I was encouraged to go into engineering and science."

Aces and social graces

Although Kansas State University humbly formed a nuclear engineering department in the late 1950s with all of two faculty members, by 1964 it would become the first accredited program in the United States to offer a bachelor's degree in the field.

The department was established by William Kimel, fresh from attending Argonne National Laboratory's International School of Nuclear Science and Engineering. The Argonne school played a key role in declassifying nuclear information under the emblem of the Atoms for Peace program. Eisenhower told its inaugural class in March 1955, "You represent a positive accomplishment in the Free World's efforts to mobilize its atomic resources for peaceful uses and the benefit of mankind."

Around that time, Foulke was deciding whether to pursue a career in engineering, medicine, or ministry. "The thing that settled it was that I got a $200 scholarship to go to Kansas State University and enter this new program called nuclear engineering," Foulke remembered. "That was the right decision because I can't stand the sight of blood and my faith is not what it would take to become a man of the church.

"And at that time, of all the engineering disciplines, nuclear was the one that was brand new and sexy and it was attracting all the best students. So that sounded like the most exciting thing to get involved with."

In an attic apartment in his first semester at K-State, Foulke put in extra hours of study to keep up with the city kids from Kansas City and Wichita. He earned a 4.0 grade-point average that fall, and so decided to pledge a fraternity.

"My high school friends had warned me that if I went to college I'd be drinking beer within a year. And, during high school days, beer was the most horrible stuff imaginable. Couldn't stand the smell of it. But I did join a fraternity and, indeed, within a year I learned how to play bridge and I was drinking beer. I was learning the social graces," Foulke said.

He began singing in an a capella quartet of fraternity brothers, the Four Delts, that performed on campus and in talent shows throughout the Big Eight conference. Foulke also chaired the campus entertainment committee. And it was in this capacity, while emceeing a show by the Kingston Trio, that Foulke bummed a backstage smoke off the most popular folk ensemble in the world at the time.

But Foulke did have more on his mind than the extracurricular goings-on. He said his strongest memories of the time are of Kimel (who was later elected ANS President), while teaching a class on reactor theory, deriving the diffusion equation and then performing solutions to the derived equation. "I just found that so fascinating to try to understand neutron behavior in reactors as a function of space and energy and angle," Foulke said. "It was just fascinating."

So much so that Foulke stayed at Kansas State for a master's degree in nuclear engineering.

Toto, I've a feeling . . .

The Massachusetts Institute of Technology awarded its first doctorate in nuclear engineering in 1956, and the graduate program's headcount a dozen years later had

S.S. Stavangerfjord: Foulke and his wife Janice shove off out of New York Harbor for Norway in June 1961.

grown to 130. In that time Foulke, the kid from the small town who went off to a big state school, was now living in the Boston metropolitan area as an MIT graduate student, competing with the finest young scientific minds in the country.

Not that he was lacking in self-confidence. He began his coursework at MIT in the winter semester, skipping over the fall semester and Nuclear Physics I. It turned out, however, not to be such a good idea. "I found it very hard," Foulke said. "The students were of exceptional caliber. And I was starting a lap behind."

The difference in city culture on the eastern seaboard from the more plainspoken and friendlier traditions he learned back home was also a challenge for Foulke. After arriving at MIT, he walked up and down the hallways of his new residence saying "Hi" and "Howdy" to anyone who would listen. "People just kind of gaped and said, 'What in the world is this?'" Foulke recalled. "I was from a friendly area and the students at MIT, at least the undergraduates, were of a different breed."

By that summer, Foulke, who enlisted in the Army ROTC while an undergrad at Kansas State and was attending MIT on a graduate deferment, was murmuring to himself, "I wish the Army would take me."

"That was the low point of my life in terms of becoming discouraged about being able to continue," he recalled.

But instead of the Army, Norway's Institutt for Atomenergi gave Foulke a break from MIT. He had been awarded a Fulbright Fellowship as part of the educational exchange program Congress had established following World War II to encourage cooperation between nations. And in the fall of 1961, Foulke and his wife Janice—whom he had met on a blind date during his freshman year of college and married in January 1960—set off by ship out of New York harbor for Norway. The opportunity was, as Foulke said, "a graceful way out of MIT for the time being."

The Institutt for Atomenergi, established in 1948, represented Norway's first organized incursion into the realm of nuclear energy. Foulke had arranged to perform some kinetics experiments on the new NORA reactor at the institute (currently the Institute for Energy Technology), located in Kjeller, just northeast of Oslo. He looked forward to putting his years of book learning to concrete use.

The reactivity oscillation experiments amounted to essentially perturbing the reactor with a sinusoidal frequency and noting the response. "That work, in a heavy-water–moderated reactor like the NORA, gave rise to some very interesting space-time phenomena, in that you wiggle something here, but the reactor behavior over there where the detector was responded with some sort of time delay. And the response was a function of where you put the detector," Foulke explained. "So, I thought that I had developed a space-dependent transfer function."

Rising in the ranks: Foulke after receiving his Army captain's bars at Fort Belvoir, Va., in 1968, with wife Janice, Rikke, and Andy.

By August 1966, Foulke had finished his coursework at MIT and earned his Ph.D. in nuclear engineering, using the research on space-time kinetics that he conducted in Norway as the basis for his thesis. ("Foulke, you didn't understand what you were doing in Norway," his graduate advisor at MIT told him. "Go figure out what you really did and straighten it all out for your thesis.") But the graduate deferment that held the Army at bay for six-and-a-half years had ended.

For much of the Cold War, the U.S. Army pursued a nuclear power program, with the primary aim of supplying electricity for remote applications. In the 1960s, the Army Corps of Engineers had deployed portable nuclear power sources at such far-flung places as Greenland and Antarctica. The Army also operated the SM-1, a 2-megawatt pressurized water reactor at Fort Belvoir, in Virginia, that began operations in 1957 and was among the first reactors connected to a commercial power grid. It was also among the first national nuclear training facilities for military personnel.

The Army selected highly qualified officers and enlisted soldiers to take part in the year-long reactor operator training course at Fort Belvoir. Foulke was among those assigned to be trained as a nuclear plant engineer on the SM-1. His first task was six weeks of shift work to learn the ins and outs of plant operation. Before long, Foulke, who had limited exposure to nuclear reactors throughout his student years, was kicking the pumps and doing fast scram recoveries from the control room.

Origins of a laboratory

By December 1953, when Eisenhower gave his Atoms for Peace address, his administration had already decided to build what was to become the nation's first full-scale electrical generating plant using nuclear energy. "It is not enough to take this weapon out of the hands of the soldiers. It must be put

Pig roast: Foulke prepares to feed the Pittsburgh-area physics community at a Bettis Atomic Power Laboratory picnic.

into the hands of those who will know how to strip its military casing and adapt it to the arts of peace," Eisenhower stressed at the U.N. The plant, built around a large-scale pressurized water reactor, was to be a glittering example of this new approach to the atom.

Westinghouse Electric Corp. had been chosen that summer to design, develop, and build the reactor plant for what would become Shippingport atomic power station. The company was a natural selection, given its ongoing seminal work on reactor development for the Navy. Within weeks of Eisenhower's speech, the first nuclear-powered submarine, *Nautilus*, with its Westinghouse-designed pressurized water reactor, was launched, and naval warfare was forever changed. ("It is not generally understood that pre-*Nautilus* submarines were in reality just surface ships that could operate under water for only brief periods—as little as 30 to 40 miles at full power," wrote John Simpson (a past ANS President), who was in charge of design and construction of the nuclear propulsion plant for *Nautilus,* in his book *Nuclear Power from Underseas to Outer Space* (1995). "The *Nautilus,* on the other hand, could circumnavigate the world submerged.")

Shortly after winning a contract for work on development of the *Nautilus* in the late 1940s, Westinghouse had formed a new section, the Atomic Power Division, that would have no responsibilities at the time except work on the nuclear submarine. In finding a site to house the new division, Westinghouse looked for a facility with about 150 000 square feet of floor space—enough for 600 or so employees—and preferably located in the Pittsburgh area, near the company's research facilities. There was an old airport 13 miles southeast of downtown Pittsburgh, in West Mifflin, with a couple of hangars and an administration building that could be used until more buildings were added: Bettis Field.

A job taken

Larry Foulke had good reason to be interested in space-time kinetics. In the 1960s, describing the space-time dynamics of neutrons in reactors was becoming more crucial because of the trends toward building larger and larger power reactors, for which space-time effects could be a limiting design consideration. And the discipline was facing new possibilities for providing detailed descriptions of space-time effects with the increasing use of digital computers.

When he was looking for his first professional job in the late 1960s, Foulke was attracted to Bettis Atomic Power Laboratory because of a scientist there who was a giant in the field of space-time kinetics. While researching his doctoral thesis on reactor space-time kinetics, he noticed there was one man whose name kept reappearing in scientific literature on the subject. His name was Allan Henry.

Henry had joined Bettis Atomic Power Laboratory as a senior scientist in 1950. While at Bettis, he worked on developing mathematical models to describe neutron behavior in reactors and was part of a lab team that presented a paper on space-time reactor dynamics at the third Atoms for Peace conference in 1964. For his work on space-time kinetics, Henry won the Atomic Energy Commission's Ernest Orlando Lawrence Memorial Award—one of the first awards set up to honor exceptional contributions to the field of nuclear energy (and which is today a $25 000 prize).

"In 1967, while I was in the Army, I started doing interviews for a job. I had all sorts of opportunities," Foulke said. "But the thing that attracted me to Bettis was that was where Al Henry was. And Al Henry was to me the foremost figure in research in space-dependent kinetics, space-time kinetics. He was my hero.

"So, when Al said to me, 'Larry, would you come work for me?' well, I couldn't refuse that."

Out of the cocoon

Larry Foulke's first assignment at Bettis would provide an object lesson into the unique decision-making processes of the Navy's nuclear program.

Foulke had hired into the reactor theory and methods group at Bettis, which was managed by Al Henry. His first assignment was to design a kinetics experiment that would exhibit dynamic spatial effects. The experiment would be used to qualify the group's ability to do calculations of space-dependent kinetics effects. A similar test was under way at Bettis's sister lab, General Electric's Knolls Atomic Power Laboratory. After working on the assignment for most of a year, Foulke and his colleagues were one week away from achieving criticality. It was then that Adm. Hyman Rickover, head of the Navy's nuclear propulsion program, cut the Bettis experiment, leaving the one at KAPL intact.

"In an effort to cut costs, the admiral decided there would be one experiment," Foulke said. "And so, like a Texas ranger—one fight, one man, one gun—I was sent off to KAPL to help determine which experiment we should go forward with. . . . Of course, you can guess who won in the competition for the experiment."

In the postwar years, Rickover had pushed for the establishment of both laboratories with just such scenarios in mind—two groups working on similar projects and pushing each other to excellence through the human desire to outperform rival peers. "From day one, Rickover set up these two laboratories to be captivated, dedicated laboratories to the naval program," Foulke said. "And their job was to compete with each other. That made the program strong.

"From day one, KAPL and Bettis were competitors. And we bashed each other. We tried to one-up each other. Any time that I thought I could say, 'Our Monte Carlo program is the best in the world—take my word for it,' there was Knolls Atomic Power Laboratory that could show me they were faster. So, we were always spurred to leap-frog each other to continue to become better. And that's what made the program so strong."

The decision to cut the program, however, was not as bad as it seemed at first.

Foulke's next assignment—coming after the disappointment of learning Al Henry had decided to leave Bettis to become a professor at MIT—was to justify why space-dependent kinetics calculations were so important. In order to do the project, Foulke had to break out of his R&D cocoon and become acquainted with other staffers at Bettis. "That got me to recognizing a lot of the real problems that those people were facing in reactor physics," Foulke recalled. "Space-time kinetics was not their biggest problem. That got me very much engaged in the more relevant applied research, to the things that the Bettis laboratory needed."

By the early 1970s, Foulke had become frustrated with being unable to publish research because of the sensitive nature of his work. Three or four papers in a row were not cleared for publication, and he was thinking about leaving the lab. Then his boss asked him if he would like to become a manager. "No way. I want to publish papers and teach," Foulke replied. (He was also teaching part-time at the Bettis Reactor Engineer School, where the Naval Reactors program sent its recruits.) But he thought it over. He had a good friend who had left research to become a manager and had enjoyed it. And Foulke changed his mind.

From 1972 to 1981, he held a series of management positions at Bettis. Foulke oversaw the performance analysis group that had responsibility for the *Enterprise* and *Long Beach*, the first nuclear-powered surface ships, as well as Shippingport station. He led the group that put together the environmental statement and safety analysis report for installing the light-water breeder reactor at Shippingport. And he held an administrative position managing a physical security department at Bettis, which Foulke did not enjoy and led him to think about other career options.

Not long after the accident at Three Mile Island occurred in 1979, Foulke sought a position within the commercial division of Westinghouse. It was an area where, as Foulke put it, "after Three Mile Island there was a lot going on."

The Foulke clan: (Left to right) Son Andy, daughter Rikke, wife Janice, Italian exchange student Paola Mazzucchelli (whom Foulke said "became part of our family"), Foulke, and daughter Larra.

In the mid-1980s, when Foulke's boss told him the company needed to generate $12 million in training sales in the coming year, Foulke was frank in his reply. "The business is not there," he said.

Simulator market realities

After a six-month investigation into the accident at Three Mile Island, the commission President Jimmy Carter had formed to make recommendations on preventing future nuclear accidents concluded that the industry had to change on its most elementary levels. The Kemeny Commission's report noted the need for "necessary fundamental changes" in the organization, procedures, practices, and attitudes of both regulators and the industry. As part of these changes, the commission urged establishment of training institutions for nuclear power plant operators, and specifically named simulators as an effective way to train plant personnel.

"Each utility should have ready access to a control room simulator," the panel wrote in the final report. "Operators and supervisors should be required to train regularly on the simulator." In fact, acquiring an operator license, the commission said, should be contingent on performance on a nuclear power plant simulator.

Seeking to capitalize on this emerging market, Westinghouse, which was already the number two supplier of nuclear plant simulators in the world, created its Strategic Operations Division in 1980. Among other missions, the new division would oversee development of the company's advanced control room training simulators, as well as train plant operators. As a keystone, Westinghouse built the $10-million, 135 000-square-foot Instrumentation Technology and Training Center, outside of Pittsburgh. The center would be the company's headquarters for operator training and would house a SNUPPS (Standardized Nuclear Unit Power Plant Systems) plant-replica control room simulator. As noted in the trade publication *Public Utilities Fortnightly* at the time, Westinghouse, with the establishment of the Strategic Operations Division, was the first company to make nuclear power plant training the concern of a single organization.

In 1981, Larry Foulke was hired as manager of the training section of the Instrumentation Technology and Training Center. With more than 100 employees devoted to full-time teaching, the section trained some 500 to 700 employees each year. "We effectively ran that simulator 24 hours a day, seven days a week, training crews from utilities," Foulke said.

The new venture was working—almost too well. Between the time of the accident at Three Mile Island and the end of 1986, Westinghouse had been awarded 20 contracts to build new plant training simulators, both in the United States and abroad. In all, around 50 new contracts were awarded to all six domestic simulator vendors in the several years immediately following Three Mile Island. The advice of the Kemeny Commission was indeed being followed: The market was becoming saturated.

So, in the mid-1980s, when Foulke's boss told him the company needed to generate $12 million in training sales in the coming year, Foulke was frank in his reply. "The business is not there," he said. That was not what his manager wanted to hear.

"The strategy of the utilities was to build up their own training capability and not pay the Westinghouse fees," Foulke said recently. "And they were starting to succeed at that plan. So I bluntly told the general manager, 'It's not there.' What did he do? He relieved me from my job.

"I now know that what I should have said was, 'Boss, if you want to get $12 million from training next year, I'm the most qualified person that you have to deliver those sales to you.' But I didn't say that. Clearly, from his perspective, I had an attitude that was saying it can't be done. And so much of what you do at that level is attitudinal."

Of greater concern to the career of Larry Foulke and thousands of others, Eisenhower's address formally opened the door to the civilian nuclear energy program.

Foulke was transferred into the replica simulators section at Westinghouse, and was soon made manager of the mathematical modeling group for simulators. He said he liked being closer to technical work again while still being able to travel the world chatting up potential customers.

"I had the technical background to be able to talk with company reps who had Ph.D.'s. And I had enough of the salesmanship and extroverted characteristics that I could also feel comfortable with the vice presidents of engineering who made the decisions," Foulke said. "So, I was able to live in the world of marketing and technology—and traveling on a Westinghouse expense account all over the world. I loved it."

But by 1991, the simulator market had dried up for good. Foulke at the time was still living in the same neighborhood he lived in when he worked at Bettis Atomic Power Laboratory. One day both he and a neighbor, a Bettis employee, were raking leaves. "Larry, would you ever be interested in coming back to Bettis?" his neighbor asked. "I thought, Gee, maybe that's a pretty good idea. Because I didn't know what was going to happen to me in the commercial end," Foulke recalled. He was soon hired back as manager of the reactor methods group—occupying the same seat that Allan Henry had occupied more than two decades earlier when Foulke first came to Bettis.

Industry beginnings

Just after his election in 1952, Eisenhower was informed that the United States only days before had secretly detonated a hydrogen device, setting off a 10-megaton blast that destroyed the remote test island Elugelab and created a mushroom cloud that reached the top of the stratosphere within five minutes. The following August the Soviet Union had tested its own thermonuclear device.

To promote the peaceful use of nuclear energy, Eisenhower proposed setting up an international bank of fissionable material to which nations, including the United States and the Soviet Union, would contribute. The proposal led directly to the formation of the International Atomic Energy Agency in 1957. Although elements of his plan have been seen as naive (worldwide caches of weapons-grade nuclear material, of course, remain as foreboding as ever), Eisenhower's intent of taking small, measurable steps to slow the one-upsmanship was prescient. It paved the way for the Limited Test Ban Treaty and the Non-Proliferation Treaty, among other inroads against nuclear war that have so far proven successful.

Of greater concern to the career of Larry Foulke and thousands of others, Eisenhower's address formally opened the door to the civilian nuclear energy program. He informed the world of the potential benefits of the atom and assured Americans that the nation's atomic resources were not being put only to deadly use. "[T]he United States pledges before you—and therefore before the world—its determination to help solve the fearful atomic dilemma—to devote its entire heart and mind to find the way by which the miraculous inventiveness of man shall not be dedicated to his death, but consecrated to his life."

With that, Eisenhower laid the foundation for an entire industry.

Dream job

Two days after the Atoms for Peace address—at the conclusion of which the delegates, even those in the Soviet bloc, broke into an enthusiastic applause that was unprecedented at the United Nations, according to reports—a small group of engineers and scientists from the atomic energy field met in New York City. They were to consider forming what they were calling an Institute of Nuclear Science and Engineering. Such an organization—they would write in the invitation for the next meeting—would, in part, stimulate the declassification of nuclear information, in line with Eisenhower's plan. The following October, after a heated discussion, the group settled on a name: the American Nuclear Society. In June 1955, the first ANS Annual Meeting was held in State College, Pa., and Walter Zinn, who several years earlier helped design the first nuclear reactor to produce electric power, was installed as president.

Seven years later, Larry Foulke joined the society as a student member while at MIT. He became a full member in 1966, when he began active duty in the Army. In the early 1980s, amid researching the possibilities for accrediting Westinghouse training programs, Foulke made his first entry into ANS governance, sitting on the Accreditation Policy and Procedures Committee. (Accreditation would become a dear subject to Foulke, and, in 1993, he would be named a Fellow of the Accreditation Board for Engineering and Technology, or ABET.) He was elected to the ANS board of directors in 1999, and said he was genuinely suprised by his election to ANS president last year. Nonetheless, despite being of retirement age, Foulke is fired up for the coming year, having already visited more than a dozen student sections and seven local sections while president-elect.

"I was concerned about my retirement," Foulke said. "I wanted to remain professionally active, engaged. And my dream job as a retiree, after having already traveled all over the world for Westinghouse, was to travel all over the world, all over this nation talking to groups about nuclear science and technology and all the wonderful things that nuclear science and technology do for humanity. If somebody would've offered me a job to go do that, I would've accepted it without asking what the pay is. Well, I know what the pay is as a volunteer for the American Nuclear Society. But the opportunity to do the things that I get to do now thrills me."

Of course, Foulke isn't retired yet. But his responsibilities for Bechtel Bettis have shifted with his election. Having been taken out of the kinds of work commitments that require day-to-day attention, Foulke has been freed to devote more attention to his duties as ANS president.

When he does retire, Foulke said he plans to stay in Pittsburgh, where he continues to make his home with Janice, his wife of 43 years. Foulke unselfconsciously spoke of her with affection numerous times that morning in the Washington, D.C.–area hotel.

With the ANS board meeting 15 minutes away, Foulke let it be known that his time that morning was drawing short. The gathering—the 152nd meeting of the ANS Board of Directors—was to begin at noon. What later transpired was, more or less, the process of routine organizational decision-making: voting on passage of a society position statement on a waste management issue, considering the possibilities for developing cooperative relationships with other professional societies, developing measures for determining the health of the society's professional divisions, deciding whether to approve another scientific society's admittance into ABET, voting on the extent of society participation in a recent United Nations initiative—in other words, still 50 years later, the machinations of atoms for peace. NN