Eugene Grecheck: Looking to the future

By Tim Gregoire

The 61st president of the American Nuclear Society has a long history of taking on difficult tasks and finding solutions that lead to real action.

If he had listened to his father, it is unlikely that Gene Grecheck would have spent his life dedicated to nuclear power. He likely would not have enjoyed a 38-year career as a nuclear engineer with Dominion Generation. Nor would he have joined the American Nuclear Society to eventually become its president. That is because Grecheck's father discouraged him from becoming an engineer.

"When I began college, I originally started out as a physics major, to be a scientist as opposed to an engineer, because my dad felt that engineers were not in charge of their own lives, that other people always told them what to do, and that is not what I should be doing with my life," Grecheck said.

What makes the elder Grecheck's advice surprising is that he himself was an electrical engineer. A little history of the Grecheck family, however, may shed some light on his dissatisfaction with his chosen profession.

Grecheck's parents grew up in Eastern Europe. His father, Joseph, was born in Poland, and his mother, Tatiana, was born in Ukraine. They were both young people when World War II erupted across the continent. By the time Germany invaded Poland, Joseph had earned a degree in electrical engineering and was working at a coal-fired power plant. "The Germans

Grecheck at age 1 with parents Joseph and Tatiana.

The Grecheck family picnics in upstate New York in 1966.

needed to keep the power on, so they kept that power station running, and my dad spent the entire war working in that plant, basically as a prisoner of war," Grecheck said. "He had interesting stories of what happened to station staff when the plant went off line."

After the war, both Joseph and Tatiana found themselves in southern Germany. Tatiana, having witnessed the brutality of the Russian communists, was eager to seek a better life away from the growing Soviet state. When Tatiana was about 14 years old, the Soviet police took her father into custody. The family never saw him again. It was, Grecheck said, like a scene from a movie, with a knock on the door in the middle of the night and the secret police hauling him away.

"When she met my dad, and they were thinking about getting married and moving on with their lives, my mother's main objective was to get as far away from the encroachment of communism as possible, and that meant coming to the United States," Grecheck said.

In 1947, the Grechecks, along with many other European immigrants, landed in New York. As an electrical engineer, Joseph knew of General Electric Company's large plant in Schenectady, N.Y., and the couple soon moved upstate to settle there. It wasn't as easy, however, as knocking on GE's door and being offered a job. Grecheck said that it took his father nearly a decade before GE would hire him, as at the time no one would recognize his college degree from Poland. Fortunately, there was a burgeoning Polish community in Schenectady, and Joseph was able to support his family by working in a Polish bakery. "He eventually did get a job working in GE's turbine generator facility, first as a draftsman and later as an electrical engineer," Grecheck said.

Becoming an engineer

Eugene Grecheck, Joseph and Tatiana's first son, was born on May 14, 1953. A second son, Christopher, would be born 10 years later. In junior high, Gene tried out for the school spelling bee in an effort to build his self-confidence in speaking in front of an audience. Not only did he win the school spelling bee, he went on to win the Schenectady regional spelling bee and represented the area at the National Spelling Bee in Washington, D.C.

In high school, Grecheck graduated as the class valedictorian. He also was active in school activities, becoming editor of the student newspaper and literary editor of the yearbook, serving on the student council, and landing a lead role in the senior class play. And while his father tried to steer him away from the life of an engineer, hoping his son would become a lawyer or businessman (his mother had wanted him to become a doctor), Grecheck was the type of boy who was always interested in seeing how things worked. "I was always taking things apart to see how they worked, much to the consternation of my parents," he said.

After high school, Grecheck enrolled at Rensselaer Polytechnic Institute as a physics major. By his second year, however, it was becoming clear that the role of a theoretician was not for him. One indication of his true calling came when he took a summer job at the GE plant in Schenectady. Working in the plant alongside engineers, Grecheck realized that he liked the hands-on aspect of the job. "It was an important lesson in recognizing that I liked what these engineers were doing, and I realized that it was something that I could do, too."

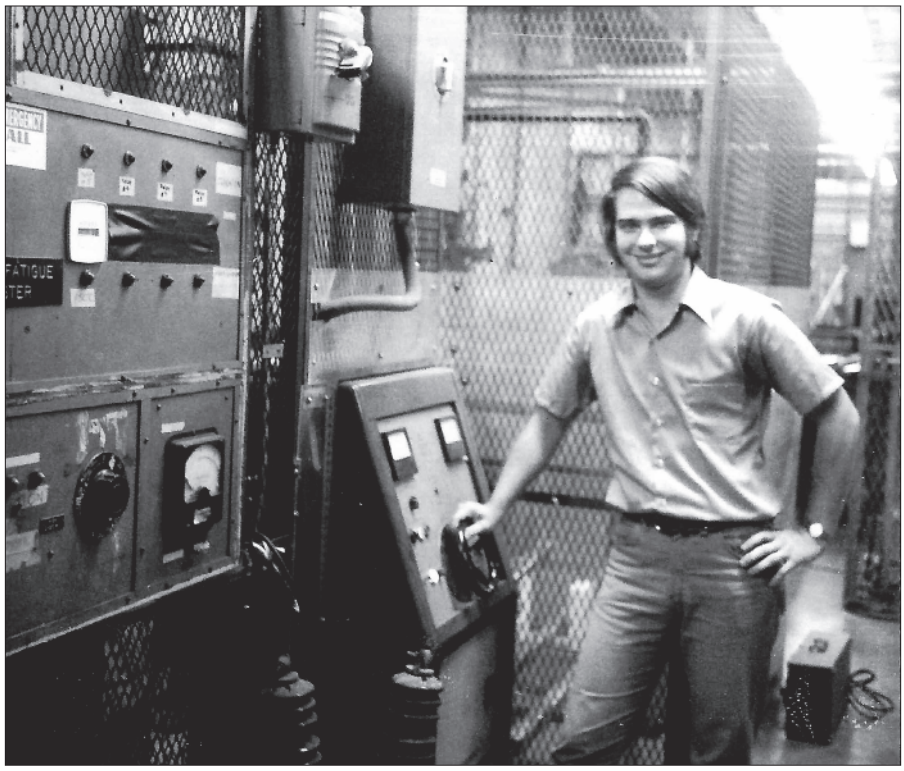
The deciding moment, however, came in the fall of his junior year at Rensselaer, he said. It was the first day of one of his first upper-level physics courses. While his previous courses had been more general and filled with a mix of students, this was the first class where almost all of the students were physics majors. "I still remember looking around the room that morning and realizing that I didn't really have much in common with my fellow students," he said. "Here were all these very smart and eager physics students, and I had a revelation that there was something wrong and I was making the wrong choice." The subject material was interesting, he said—it was just the personal dynamics that turned him off.

His impressions were confirmed by his roommate, an electrical engineering student, who agreed that being a physicist was not for Grecheck. "He said, 'You are an engineer and you ought to just acknowledge it,'" Grecheck said. It just so happened that his roommate had done undergraduate research for a nuclear engineering profes-

Grecheck takes a break from his undergraduate studies at Rensselaer Polytechnic Institute in Troy, N.Y.

sor. So, following his roommate's advice, Grecheck went to see the professor, and together they worked out a curriculum whereby Grecheck could still get his bachelor of science degree in physics, while at the same time taking nuclear engineering courses. This allowed him to earn his master's degree in nuclear engineering from Rensselaer in just one year. Grecheck graduated from Rensselaer with a BS in physics in 1974 and an MS in nuclear engineering in 1975.

Of course, coming from a physics background, the transition to nuclear engineering was an easy one for Grecheck. And growing up in GE's headquarters city as the son of an electrical engineer, it may seem as if he was destined for a career in the power industry. But moreover, Grecheck said that even at a young age he was aware of the drawbacks of using fossil fuels to generate electricity, drawbacks not associated with nuclear power. "I remember thinking that anything that requires burning stuff to produce electricity, whether it's coal or oil or any fossil fuel, seemed wrong to me. Nuclear appeared to me as a way to address what I could tell would be an extraordinary future demand for electricity without the environmental effects of combustion."



The nascent engineer at a summer job at GE in 1974.

Road to Dominion

Out of school, Grecheck began his search for his first job. As anyone who has spent a winter in upstate New York can appreciate, Grecheck looked toward warmer climates to begin his career.

Fortunately, opportunity arrived for Grecheck from a warm part of the country: Richmond, Va. It happened that Virginia Electric and Power Company (VEPCO), which would later become Dominion Generation, had just gone on line with its Surry station, a two-unit Westinghouse pressurized water reactor plant near Gravel Neck, Va., and was constructing North Anna, another two-unit PWR station near Mineral, Va. In 1975, VEPCO hired Grecheck and started him working on issues at Surry, whose Unit 1 reactor had started up in late 1972 and Unit 2 the following year. Grecheck said that he initially spent about a month at the plant becoming familiar with the operations of a nuclear power station. "It was a very valuable experience for me because I had a great education in the theory of nuclear power, but very little exposure to the practicalities of how a plant operated," he said. "So I spent time really getting to understand not only the equipment but the organizational structure and how the plant departments worked together."

Grecheck spent the next year and a half at VEPCO's corporate office in Richmond, providing licensing support to Surry, before being moved over in 1977 to the North Anna licensing project, which was nearing the end of its construction phase. North Anna-1 received its license in early 1978, and Grecheck spent several months at the plant as part of the startup team resolving last-minute technical problems before the unit began operations.

Back in Richmond, Grecheck became the lead engineer for the licensing of North Anna-2, which was about 18 months behind Unit 1. The company was just a few months from loading fuel into Unit 2 when the accident at Three Mile Island occurred. That was in March 1979. "That brought everything to a full stop," Grecheck said.

The TMI event, and the myriad regulations and modifications it engendered, greatly influenced Grecheck's career as a leader. It not only provided him with early management experience, but also steeped him in the regulatory processes and the workings of the Nuclear Regulatory Commission. "That was the first real opportunity I had to be in a leadership position, managing big projects and being responsible for getting work done," he said.

VEPCO would spend the following months making all of the TMI modifications required by the NRC in order to start North Anna-2. By the following year, the company was confident that the reactor was ready for startup. The NRC, however, was not ready, Grecheck said. "In order to support the post-TMI process, the NRC had reorganized the agency, and it was having difficulty getting back into the mode for licensing a new plant," he said. Additional work was needed to develop the framework

Driving off with his new wife, Barbara, on their wedding day in July 1977.

Grecheck's children: Michael, age 7, enjoys a moment with younger sister, Lauren, age 3.

for licensing plants under the new regulations, which required Grecheck to work directly with the NRC at its headquarters in Washington, D.C. By the summer of 1980, North Anna-2 became the first reactor following the TMI accident to receive NRC approval to begin operations.

"It was a very intensive time. At an early point in my career I found myself engaged in some high-level, groundbreaking work, working closely with the NRC staff creating policy and process," he said. "It became very important to me in my later career."

At the same time, Grecheck was furthering his formal education, enrolling in the master of business administration program at the Virginia Commonwealth University School of Business in 1978. The decision to earn an MBA made sense to Grecheck, as he was working in a commercial enterprise. "Even in my mid-20s I could see how, as engineers, we would make technical recommendations or decisions that in many cases would be revised due to various economic factors, and I wanted to be able to better understand those economic factors and to be able to more fully contribute to those decisions," he said. Later, he had the opportunity to further develop his business management acumen by completing the Executive Program at the Darden School of Business at the University of Virginia.

Grecheck would spend the next 30-plus years with the company that would become Dominion Generation, moving into roles of greater responsibility until finally becoming vice president of nuclear engineering and development. His career spanned work at three of Dominion's nuclear stations, including being licensed by the NRC as a senior reactor operator at Surry. Among the positions he held were corporate engineering manager, plant manager at North Anna, site vice president at Surry, and vice president of nuclear operations during the transition following Dominion's purchase of the Millstone power station in Connecticut. Following that assignment, he returned to the Richmond nuclear headquarters to provide executive leadership of nuclear services for the entire fleet, including training, licensing, emergency planning, security, and operational programs, and later, all nuclear engineering activities. Significantly, he was also asked to lead Dominion's investigation of the potential for building a new nuclear unit at the North Anna site.

In 2011, Grecheck assumed leadership of Dominion's response to the accident at the Fukushima Daiichi plant in Japan, interacting with the public and news media concerning the implications of the accident for Dominion's plants and developing the company's responses to new requirements from the Institute of Nuclear Power Operations and the NRC. In August of that year, just five months after the earthquake and tsunami in Japan, a magnitude 5.8 quake struck central Virginia, with its epicenter only about 11 miles from the North Anna power station. The station's two reactors both automatically shut down following the tremor. Investigations in the days after confirmed that no safety-related equipment had been damaged, but that the measured accelerations due to the earthquake exceeded the licensed design basis for the plant, resulting in a requirement that the NRC approve the restart of the units. This had never before happened at an operating nuclear unit in the United States, however, and the NRC did not have an established process for providing that approval.

Under Grecheck's leadership, Dominion teams developed an extensive restart readiness program and licensing strategy, including very detailed walkdowns and inspections of plant equipment and rigorous analyses. Grecheck's understanding of NRC regulatory processes, developed over many years, as well as relationships with key people both at the NRC and in the industry, were critical to the success of this effort. "We were initially told to expect that the review of the restart could take up to two years," he recalled, "but we were able to complete the testing program and answer all of the NRC staff's questions to permit the restart authorization in just 80 days."

One of Grecheck's final acts before he retired from the company certainly must remain a bittersweet memory for the longtime utility man, and that is having been in the control room of Wisconsin's Kewaunee nuclear power plant on the day it closed, May 7, 2013.

It would be bitter because Kewaunee was a plant in excellent working order, the best performing unit in Dominion's nuclear fleet at the time it was shut down, and the reason it closed was solely due to economic factors. Being in the control room when the plant was finally powered down was a very emotional day, Grecheck said. The experience, however, was tempered by the exemplary conduct and performance Grecheck saw exhibited by the reactor operators and staff. They were professional through to the end, he said.

"It was an incredible experience. But as I left the plant that day and saw the steam coming out for the last time, it was difficult to accept," Grecheck said. "The world needs more nuclear, and here was an excellent energy resource being shut down."

Involvement in ANS

Since retiring from Dominion, Grecheck remains active in the nuclear industry, both as a private consultant and as an American Nuclear Society leader. While he has been a member of ANS since the start of his career, he admits that he has not always been a very active member. "For the majority of my career, I was like most other utility members in that ANS represented a good source of information, but utility people as a whole tend not to fully participate in the society," he said. The simple reason is that the demands of working for a utility just do not allow being involved beyond attending the odd meeting now and then. There just isn't enough time. "The nuclear utility business is pretty much an all-consuming job," he said.

That began to change for him, however, starting in the early 2000s. At the time, the nuclear renaissance was looking as if it would become a reality, and Dominion was looking to expand its nuclear fleet. The company also was at the forefront of exploring new technologies and developing processes for siting and licensing new nuclear power plants. This included involvement in the Department of Energy's Nuclear Power 2010 Program, which aimed to bring new Generation III+ plants to market. Grecheck also noted that Dominion was one of the first utilities to apply to the NRC for an early site permit, for an expansion of North Anna, and was the only company to participate in all phases of the Nuclear Power 2010 Program.

"This was a new phase in my career, because after spending years internally fo-

Hiking the ruins at Machu Picchu, Peru, with Barbara.

cused on improving the operation of our plants, which was very much an inward-looking activity, now I found myself in an outward-focusing situation," Grecheck said. This meant interacting with companies and individuals across the nuclear industry, as well as with the DOE and its national labs. Grecheck was now regularly attending ANS meetings as an invited speaker, discussing issues related to new construction and licensing. He also assumed leadership positions with the Nuclear Energy Institute, as chair of the New Plant Working Group and a member of the New Plant Oversight Committee, and with the Electric Power Research Institute's Nuclear Power Council. He was also named a U.S. representative on the Senior Industry Advisory Panel for the Generation IV International Forum.

That involvement and exposure to nuclear fields outside the U.S. power industry eventually led to Grecheck's being elected to the ANS Board of Directors in 2011. As Grecheck explains it, it was a call from ANS past president Ted Quinn (1998–1999) that triggered his run for the board. Quinn, who has been active in ANS's Operations and Power Division (OPD), was concerned because there were no board candidates from utilities that year. "They had a whole slate of candidates for the board, but there were no candidates who represented the power sector," Grecheck said. "So OPD was contemplating a petition drive, and Ted asked me if I would be interested in putting my name up for nomination through a petition." Along with Steven Arndt, of the NRC, who is the newly elected ANS treasurer, Grecheck was elected to the board after being nominated by petition.

Serving on the board, Grecheck said, was a learning experience. As an ANS member and active speaker at national meetings, he was aware of the society's reputation and its work in all fields of nuclear. He said that up until his time on the board, however, he was not familiar with the nitty-gritty details of the internal operations of the organization.

Grecheck said that as ANS president, he intends to continue the initiatives aimed at getting utilities more involved in the society, many of which began under past president Donald Hoffman (2013–2014). But he said he also intends to focus on individual members and how ANS can help them in their professional careers and lives. Grecheck noted that what ANS can do for someone just beginning his or her career may be different from what it can do for those in the middle or at the end of their careers. "We need to work much harder on identifying the added value that we can provide, communicating that added value, and then reaching out to prospective members and saying, 'Here is how we can help you,'" he said.

Focusing on individual members means addressing the needs of all members, Grecheck said, whatever their background. He added that just because he comes from a utility background, that doesn't mean he is going to focus solely on the power sector. "There is a tremendous amount of diversity and a broad spectrum of activities throughout the nuclear science and technology fields, and I think that ANS has a role to play in all of them," he said. "We need to remind all nuclear professionals of the importance and value of participation in our professional society—ANS."

Family life

It would be fair to assume, now that he has retired from the demands and heavy workload of being a vice president at a large utility, that Grecheck would take it easy—maybe find a comfortable spot by the pool and sip cold beverages. But in addition to his consulting business and the duties of being an ANS leader, Grecheck and his wife, Barbara, who is a retired rehabilitation counselor, are using their newfound time to explore the world.

"I was fortunate to be able to visit some interesting parts of the world as part of my new plant activities, but Barbara was gener-

The Grechecks celebrate Lauren's graduation from her PharmD program on a sunny spring day along the James River in Richmond, Va. From left: Michael, Barbara, Gene, and Lauren.

ally not able to go along, due to family and work obligations," Grecheck said.

Already the couple has traveled through Greece and Turkey, and this year they spent the entire month of February in South America, traveling from Peru, south around Cape Horn, until finally reaching Buenos Aires. They are planning further adventures for the future.

This month the Grechecks will celebrate their 38th wedding anniversary, and how they met is rather remarkable, as Gene explains it. In essence, it was a marriage arranged by Grecheck's neighbor.

"A neighbor of mine in Richmond had been Barbara's roommate at the University of Maryland, and she told me that I simply had to meet this girl, because she was the one for me," Grecheck said. "So she spent a great deal of time setting up social events for us to meet."

Following their first meeting, they both agreed that the other was a nice person, but they didn't give it much more thought. Barbara, after all, was living in Maryland, and Grecheck was more than 100 miles away in Richmond. The neighbor, however, wouldn't take no for an answer, and eventually the connection clicked. "Later on we found out that she was working both sides of that equation, basically telling both of us that we were meant for each other and that this is the way things had to be. Even as silly as it seemed at the time, she was probably right," he said.

The couple married in July 1977, and Barbara continued her graduate work in rehabilitation counseling at Virginia Commonwealth University (VCU) in Richmond. After earning her master of science degree, she began working with the Virginia Department of Rehabilitative Services before moving to the Department of Veterans Affairs Medical Center in Richmond, where she worked until her retirement in May 2014.

The Grechecks' first child, Michael, was born in 1985. Michael was the first to break the Grecheck mold of becoming an engineer, studying art at VCU. Today Michael is a glassblower, creating fantastical and elaborate glass sculptures at his studio, under the name G-Check Glass. He is in the process of moving his studio to New York state this summer. The couple's second child, Lauren, was born in 1989 and has maintained the family's more science-oriented heritage. Lauren received a doctorate in pharmacy from VCU this spring and has moved to Denver, Colo., to begin her residency at the University of Colorado Hospital.

While life has slowed down (somewhat) for the man who was urged not to become an engineer, Grecheck still has his eye on the future, and the curious kid from Schenectady is optimistic about the role of nuclear in our lives. If the world is going to be able to provide the benefits of electricity to all of its inhabitants, no matter where they live, he said, it is going to need nuclear power. It is a certainty reflected in the theme Grecheck has adopted as ANS president: "The world needs nuclear; nuclear needs ANS."

The challenge is to meet the world's nuclear needs in a safe, responsible, and economical manner, and that, Grecheck said, may take a change in technology. It could even mean moving away from the large light-water reactor model that has been the standard for the past 50 years, he said.

"I think the overall industry is overdue for a major technological advance, and that is where the entire membership of ANS—whether we work for a supplier or a national lab or in academia—can work together to come up with what can be that next big breakthrough that allows us to advance to the future," he said. NN