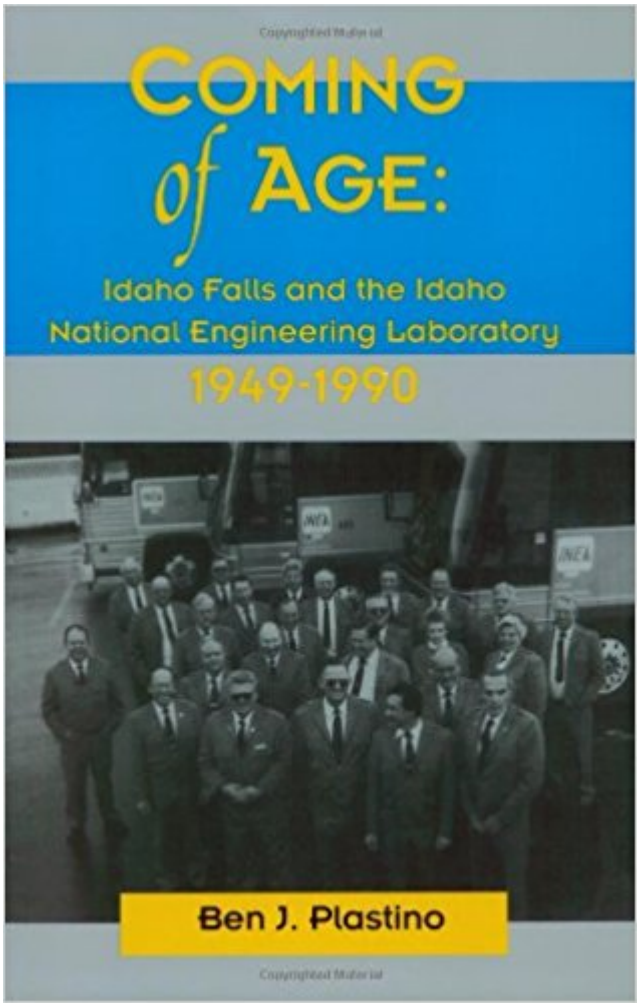
Coming Of Age: Idaho Falls And The Idaho National Engineering Laboratory 1949–1990



Synopsis

Idaho Falls and the Idaho National Engineering Laboratory grew up together. Which one benefited the most is arguable since this truly was a symbiotic relationship. The details of this courtship and ensuing life together are chronicled by longtime Idaho Falls newspaperman Ben J. Plastino. From his perspective in 1990, he traces the creation of the INEL project and highlights the local and national personalities that charted and maintained its success from 1949 until 1990. This task included interviews held in 1989 and 1990 of more than one hundred persons, including early NRTS arrivals, present and past members of Idaho’s congressional delegation, governors and many other political leaders, Idaho Atomic Energy Commission and Department of Energy operations managers, contractor supervisors, and others who had a prime hand in the site’s operation. A person who greatly enjoyed people, Plastino focuses on the human aspects of the "site" and its inseparable relationship with the progressive community of Idaho Falls. A long-time observer of both the INEL and Idaho Falls, he pays tribute through this book to the innovation, fortitude and brilliance of those responsible for the success that began in 1949.

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Highly important to AEC employees working at the site was the completion of what then was called the Twin Buttes Road, now known as Highway 20, for 41 miles between Idaho Falls and Central

Facilities, and its connection with Highway 26 to the west. It was dedicated October 8, 1951, near its intersection with Highway 26. Among those participating were Joe Call, Idaho Falls Chamber of Commerce president, as master of ceremonies; Johnston; W. Fisher Ellsworth, Idaho Falls, auto firm owner and new member of the State Highway Board, who cut the ribbon; Roscoe Rich, Burley, State Highway Board chairman; Lt. Governor Edson H. Deal, representing Governor Len B. Jordan; and State Senator O. J. Buxton, Driggs. One of the humorous aspects of this ceremony was the unscheduled appearance of a Butte County cattle truck. The astonished driver saw the paved road ahead and rumbled past as dignitaries watched with mouths agape. Kirby Whitham had a long and notable career as a chemical engineer but when the flicker of lights glowed in four globes at Experiment Breeder Reactor I on the afternoon of December 20, 1951, it forever cemented his mark in his chosen fields. An ANL team headed by Zinn had brought the historic reactor to criticality (a controlled, self-sustained chain reaction with a core) on August 24. The scientists were embarking on a new field and they were enthralled at what was happening. They continued to toil on low-power operations while they studied their new creation. Then on that historic day four months later, the reactor started up and gradually increased over several hours. At 1:23 p.m., the first electricity ever generated from nuclear heat began flowing from the reactor's turbine generator. Whitham was one of the pioneers and his name is one of sixteen chalked on the wall of the generator room to commemorate the historic occasion. "We were all exuberant but we also were too busy with the equipment to give it much thought," recalled Whitham, who was retired in Idaho Falls. "I know it was in the late afternoon and we were so happy to demonstrate that we could generate electricity." It wasn't until that evening the elated scientists took time out to celebrate in a small way. "I know we had some champagne but we didn't drink much. You must remember that this was classified," he said. Dr. Zinn then announced the achievement to Argonne's main office at Chicago. The scientists lived in a state of euphoria for some time but they were too busy to pursue their success in a project that was the forerunner to the worldwide nuclear electricity of today. Whitham laughingly recalled that day, adding, "Dr. Zinn probably saw the significance more than we did, but we were busy trying to get the turbine going and tending to other equipment." When Ray Haroldsen, a Bonneville County native and electrical engineer, flipped a switch at about 11 p.m. July 17, 1955, at BORAX III, world nuclear power for peaceful use established a notable landmark. That's when nuclear power streamed over the lines to light up Arco, a forerunner of the nuclear power generated in much of the world today. As Haroldsen recalled it, some 500 kilowatts went to Arco, 500 to the BORAX facilities and 1,000 to Central Facilities. Even today, Arco boasts it is the first city in the world to be lit by atomic power. BORAX, of which there were eventually five, was the classified name given to the

Boiling Reactor Experiment. "The idea for the experiment grew out of an unplanned nuclear excursion that happened at a critical assembly at Argonne National Laboratory in Illinois," said Haroldsen. In 1952 at Chicago's ANL, one of the operators of the critical assembly (a zero-power mockup of the reactor for the first nuclear submarine), without thinking, manually yanked a control rod out of the critical assembly. The result was a nuclear excursion that caused an explosive steam bubble to form in the bottom of the critical assembly. At the first operation of BORAX in June 1955, there followed a series of transient experiments in which the BORAX reactor was purposely slugged with excess reactivity, causing spectacular geyser-like eruptions from the top of the reactor tank. "These streams of water reached between 50 and 150 feet high," said Haroldsen. "In fact, there were humorous reports from startled tourists traveling on Highway 26 claiming that they had seen something like Old Faithful erupting on the horizon in the Arco desert." Next was a rush to locate a suitable steam turbine generator to connect BORAX. One was wanted to run on wet steam, not the widely used new dry steam model. It was found in an abandoned state at a remote sawmill near Albuquerque, New Mexico, of 3.75 megawatts which had been manufactured by Westinghouse in 1925, and barely acceptable. It was a contrast that such a decrepit generator was used to help boost power to the nuclear age, Haroldsen mused. "Here we were, the forefront of knowledge, trying to get the old 1925 turbine going," said Haroldsen. Utah Power and Light employees gave their help, and without them, said Haroldsen, lighting Arco would have been almost impossible. They found a desperately needed transformer in a stockyard near Central Facilities. It was loaded on a Morrison Knudsen-Ferguson flatbed truck, hauled to BORAX and wired without unloading. "It was a transmission line that caused the lighting of Arco to be delayed about two days," said Haroldsen. "We also lost about as much sleep. Engineers blew out several lines before successfully lighting the town. Those two sleepless days are something we will always remember." When the idea of a nuclear submarine was hardly considered, J. William (Bill) Jones, Jr., was an apprentice for $14.50 a week at Electric Boat, a division of General Dynamics in Groton, Connecticut. He was born at Corning, New York, attended public schools at Flint, Michigan, and received a bachelor of science degree in mechanical engineering from Lehigh University in 1933. "It was the Great Depression then," he said, "and any kind of a job was welcome." Jones, in many ways, though, was fortunate. He had a close but frequently rocky relationship with Hyman Rickover, who he described as a cantankerous but brilliant father of what is now America's nuclear Navy. Jones still had a merry twinkle in his eye as he recalled his first meeting with Rickover. When Electric Boat was asked to pick 10 names to come to remote and little-known Idaho to build the Nautilus prototype in 1950, Jones did so, then added his own name. Only he and another person who was director of

operations were chosen to go. The other man didn't want to go, so Jones took the trip alone. That was December 1950, and it wasn't exactly a pleasant experience. His plane was stuck at Rock Springs, Wyoming, by a winter storm. Rickover met him at Logan, Utah, and they traveled by car to Salt Lake City to check out a company that built structures of some 33 feet in diameter for the submarine prototype. "He was a stiff-necked guy, all business," recalled Jones of Rickover. They flew from Salt Lake City to Idaho Falls during that severe winter day and what Jones saw at the NRTS was not exactly imposing. EBR-I, the first NRTS structure built at the site, was near completion but there was only a hole in the ground at what was to become S1W, the Nautilus prototype. "Rickover was very nasty and liked to upset people," said Jones. "We had a working relationship for 17 years, but it was never one of warm friendship. He often called meetings on weekends, early in the mornings, or other difficult times. I can't ever remember him going to or enjoying himself at a social function. It was all work for him." Jones remembered one early meeting with Rickover in 1951 at a stormy luncheon at the NRF cafeteria. He aggravated me so much that I called him an S.O.B.," said Jones. "I thought then it would take him less than 15 minutes to make a telephone call and get me fired. Instead, as he left he said, 'Yeah, Jones, but they never called me a dumb S.O.B.' " Jones even now asserted Rickover was the right man in the right place for the nuclear submarine and later nuclear ships. "Without him, our country would have taken 20 years longer," he said. "We took the lead and still hold it."

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