

EDWIN E. KINTNER (1920-2010)

# A Champion of Fusion and Fission

by Stephen O. Dean

**E**dwin E. Kintner, former head of the U.S. fusion energy program, died on May 7 in Exeter, New Hampshire, shortly after reaching his 90th birthday. He had a long and varied career in the energy field.

Ed received a B.S. in Electrical Engineering at the U.S. Naval Academy in 1942, and also received masters degrees at MIT in Naval Architecture and Marine Engineering (1946) and in Nuclear Physics (1950). At the time, he was a career naval officer, having served aboard a light cruiser in World War II.

By the early 1950s, Ed had joined Admiral Rickover's team, where he played a key role in the development, demonstration, and deployment of the nuclear reactor that powered the *USS Nautilus*, the first nuclear submarine. This experience profoundly influenced Ed's management philosophy. He recalled that Admiral Rickover rejected advice from the Atomic Energy Commission (AEC) labs that he carry out a lengthy research and development program, before building a conservatively designed nuclear test reactor, and before attempting to design and build a reactor that could fit in a submarine.

Instead, Rickover issued orders to his team that the test reactor ("Mark I") would be built immediately and be identical to the one that would power the submarine ("Mark II"). "Mark I equals Mark II," was Rickover's plan, according to Kintner. It worked, and Ed never forgot it.

Ed later retired from the Navy and joined the nuclear fission reactor development program at the AEC. There he was a senior manager over-



LANL

*Edwin E. Kintner in 1981.*

seeing at first the development of advanced light water reactors (which became the workhorse of today's commercial nuclear power industry)



AEC

*Edwin Kintner (center), at the Atomic Energy Commission in 1953, examining a model of the engine section of the Nautilus.*

and, later, the development of fission breeder reactors.

## From Fission to Fusion

In the mid 1970s, Bob Hirsch, then head of the U.S. fusion program, hired Ed as his deputy, hoping to instill some Rickover spirit into the fusion program. In 1976, when the Atomic Energy Commission was transformed into the Energy Research and Development Agency (ERDA) and Hirsch was promoted to Assistant Administrator, Kintner assumed the position of head of the U.S. fusion program. Hirsch had commissioned the preparation of a comprehensive fusion development plan that was completed in July 1976 (posted at [http://fire.pppl.gov/us\\_fusion\\_plan\\_1976.pdf](http://fire.pppl.gov/us_fusion_plan_1976.pdf)).

The Tokamak Fusion Test Reactor (TFTR) was already under construction at Princeton and the plan called for building a series of test facilities in the 1980s and 1990s, culminating in a Fusion Demonstration Power Plant around the year 2000. Kintner believed the plan was sound.

ERDA became the Department of Energy in 1978, and Kintner remained head of fusion, though Hirsch departed to Exxon. Kintner and others testified to a congressional hearing chaired by Rep. Mike McCormack that led to the passage of the Magnetic Fusion Energy Engineering Act of 1980. President Carter signed that Act into law on October 1980 (posted at [http://fire.pppl.gov/mfe\\_act\\_1980.pdf](http://fire.pppl.gov/mfe_act_1980.pdf)).

Carter lost the election to Ronald Reagan the following month. The new Administration opposed having the gov-



Rebecca Harrington

Kintner (standing at right) testifying at a Congressional hearing on fusion.

ernment build large energy “flagship” facilities or demonstration plants. The private sector would develop any needed new energy technologies was their view. Still, Kintner spent the next year trying to convince the Administration to implement the fusion plan. He believed that construction of new test facilities had to be the “strategic backbone” of any commercially successful fusion effort.

It soon became clear that the plan would not be implemented and, a year later, Ed resigned. In his letter of resignation he said he felt the Administration was making “a national error for which a price far greater than present savings will be paid at some future date.”

He said, “There is little more that I can do except to make clear by my leaving that I am not a party to that decision.” (See Fusion Power Associates Executive Newsletter, January 1982). Ed felt that the “strategic backbone” of the fusion program had been removed. He often reminded his staff of another of Admiral Rickover’s favorite mottoes: “Where there is no vision, the people perish.”

#### Back to Fission

In April 1979, one of the two nuclear fission power plants at Three Mile Island in Pennsylvania had had a meltdown, and the cleanup was not going well. Shortly after Ed left the DOE, the owners

of Three Mile Island, GPU Nuclear in New Jersey, hired Ed to be executive vice president and put him in charge of finishing the cleanup at Three Mile Island. He held that position until his retirement nine years later.

Ed, and his wife Alice, then moved to a beautiful house on the side of a mountain at the border of Vermont and New Hampshire, overlooking the Dartmouth University campus. For several years Ed gave seminars at Dartmouth. The Kintners later moved to The Ridge, a retirement home in Exeter, N.H.

Ed received the Secretary of the Navy Commendation Medal in 1959, the Fusion Power Associates Leadership Award in 1981, and was elected to the National Academy of Engineering in 1990. He also received other commendations, too numerous to list.

Ed had an outgoing and friendly personality that endeared him to all, even when he was taking a hard line on a tough management issue. Many will miss him greatly.

His wife, Alice, three sons, Eric, John and Peter, a daughter, Mary, and four grandchildren survive him. Condolences can be sent to Alice at eandakintner@comcast.net and to Eric at Ekintner@aol.com There will be a memorial service June 12, in Exeter.

*Dr. Stephen Dean is the director of Fusion Power Associates.*

## Letters

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is to stop the 37 other states not included in the proposed expansion but which have county dose averages greater than those of New Mexico to demand coverage? Illinois, for example, has a county dose average of 3.9 rads. The combined population of these 37 states was over 150 million in 1960. You can be sure that once these “downwinders” or their heirs become aware that they are more deserving than even New Mexico downwinders, they will demand coverage .

Of these 150 million, at least 30 million have had or will have cancers covered by RECA. Multiplying \$150,000 per cancer victim by 30 million yields a cost to the government of \$4.5 trillion—that’s six times the cost of the recently passed Health Care bill.

It will likely cost between \$100 billion and \$200 billion to cover the 7 million downwinders in the seven states included in the current bill (only about 150,000 downwinders are currently covered by RECA).

As is made clear in my book, *The Phantom Fallout: Induced Cancer Epidemic in Southwestern Utah* [See *21st Century*, Summer 2009, for excerpts] the original RECA law was not warranted; the downwinders’ cancer rates in Utah have been more than 30 percent below nationwide rates. The original RECA bill clearly had unintended consequences that could cost the taxpayers hundreds of billions of dollars.

**Daniel W. Miles**  
Washington, Utah

## Lance Endersbee Would Be Proud

### To the Editor:

I thought *21st Century* readers would like to know that Australia’s hated emissions trading scheme did not pass, and, in fact, failed spectacularly in December 2009. This was a resounding defeat to which the recently deceased Lance Endersbee directly contributed. [An obituary for engineer Endersbee and excerpts from an interview with him appeared in the Winter 2009/2010 issue of *21st Century*.]

**Robert Barwick**  
Citizen’s Electoral Commission,  
Australia