

New Energy Advocate Hal Fox Dies

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Harold "Hal" Fox, a cold fusion and new energy advocate for many years, passed away on August 20, just a few days shy of his 89th birthday. He was born in Vineyard, Utah on August 24, 1923. He is survived by his wife, Joyce, daughter Nancy Jane and numerous grandchildren and great-grandchildren. He was predeceased by three children and his first wife Lucy.

Fox served in the Army Signal Corps (World War II, Philippines) and was a meteorologist in the Air Force Weather Service. He was a missile systems engineer at Hughes, a member of the Advanced Engineering Department at Sperry and director of the first research laboratory at the University of Utah Research Park.

Fox mentions his entrance into the cold fusion field in his 1994 *Cold Fusion* (Issue 1) column "From the Great Salt Lake." He explained that "immediately after" he heard about the announcement of cold fusion, discovered at his alma mater the University of Utah, he felt he needed to get involved. He and a few friends in the Salt Lake area established the Fusion Information Center (FIC) by mid-April 1989. In that same issue, he wrote of some of the science world's inability to replicate the Fleischmann-Pons experiment: "Obviously, what took Pons and Fleischmann several years of work was not replicated in a few days by those unskilled in the art."

FIC began publishing the monthly newsletter *Fusion Facts* in July 1989. Mahadeva Srinivasan said, "The *Fusion Facts* newsletter played a very crucial role in the formative years of the field by providing a forum through which rapid communications on preliminary experimental results could be publicized." Edmund Storms also felt the importance of the newsletter: "Hal provided a dose of reality about what was happening, which helped unite the few people who were trying to discover the reality rather than reject what was becoming increasingly obvious." Robert Bush added that the newsletter, "helped to create an amazing sense of community among the various international cold fusion workers."

In late 1989, Fox started the first of his many technology companies, Future Energy Applied Technology (FEAT), which became ENECO in 1993. Fred Jaeger, former CEO of ENECO, recalled: "Hal gave chunks of FEAT stock to some of his friends, including Robert Bass, Ed Storms, Robert Huggins, John Bockris, etc. with the idea that it would be owned and controlled by scientists to perform cold fusion research and to avoid blatant commercial profiteering. By fall of 1992 it became apparent that the FEAT business model was unsustainable. About that time, Charles Becker wanted to invest, but needed a better business structure than what FEAT offered." Jaeger explained that ENECO changed the business model, creating a "mutual fund" for patents to ensure easy one-stop access for any cold fusion licenses." Fox



Hal Fox at ICCF4, Hawaii, 1993.

resigned from FEAT/ENECO to focus on publication.

In 1992, the FIC published Fox's book *Cold Fusion Impact in the Enhanced Energy Age*.

Fox added an additional newsletter, *New Energy News*, in mid-1993 (published by the Institute for New Energy, INE). His colleague Patrick Bailey, President of INE, said of Hal, "He was always a very positive individual and a great leader. He single-handedly formed the office of the *New Energy News* (NEN) in Salt Lake City. . . Hal and his staff at NEN will never be forgotten for their selfless devotion, hard work and positive attitude in getting their views of the physics out into the world and its mainstream media. Now called low-energy nuclear reactions, the science of cold fusion (or cold fission) is being replicated more and more, and is slowly being understood by more scientists in all countries of the world."

In January 1996, Hal and the FIC began publishing the important *Journal of New Energy*. Robert Bass published in the journal and recalled, "It was Hal Fox who urged me to admit that I was 'standing on the shoulders of giants' and call 'my' resonant transmission theory the Turner/Schwinger/Chubb&Chubb/Bush/Lamb&Parmenter/Kim/Bass theory instead of the Bass theory." The journal became an important publishing resource for researchers in new energy.

Fox was also very involved with the INE-sponsored international symposiums on new energy (ISNE). He published numerous articles in *Infinite Energy* in its early years.

One of Fox's major contributions to new energy and cold fusion work, aside from the stellar publishing endeavors, was his support of researchers and his quest for new technologies. Mitchell Swartz said, "Hal Fox was certainly among the first to petition our political leaders and members of the business community to support this new fledgling field." Mahadeva Srinivasan recalled, "He used to provide opportunities to Russian and Eastern European physicists to visit Salt Lake City and his lab. I stayed at his home near Salt Lake City during one of my visits, on his invitation."

Patrick Bailey said that Fox was excited to see the "Good Morning America" segment of June 11, 1997, which featured CETI. Bailey said, "[It] showed a video of a cold fusion cell that reduced the amount of radioactivity from an alpha emitter radioactive material, as expected. He also sponsored research and hoped that a similar effect could be found that would reduce the amount of gamma ray emissions from

radionuclides, such as from Cs-137 or Co-60. Some tantalizing reports were published. Such methods could then be used to eradicate nuclear waste." Edmund Storms added, "Hal spent much of his own money supporting the field while being forever optimistic that some big deal or a wealthy patron would come forward. In spite of many failures to obtain financial support, Hal continued his research, focusing on the electron charge cluster discovered by Ken Shoulders. Unfortunately, Nature was not kind to his efforts so that an expected working device never materialized."

Robert Bass noted that, after the 1993 *Popular Science* story on cold fusion, the Cincinnati Group "visited Hal Fox to ask him how to get started in LENR electrolysis, and he advised them to try to achieve radwaste remediation reaction (RRR) instead of energy production, which in my opinion they did. . . Once posterity wises up to Cincinnati Group's RRR to eliminate nuclear fission radwaste, they may regard this suggestion as Hal's most enduring legacy."

Mitchell Swartz was assisted by Fox in one of his battles with the U.S. government about patenting cold fusion. Swartz said, "Hal Fox fought for all the right things—America, the science of clean energy, and against the abuse of U.S. scientists." Fox wrote in his summary: "From this [cold fusion] research, many invention applications have been filed, especially by Japanese and American scientists. Over 100 low-energy nuclear reactions patents have issued in Japan and many more in European countries. . . By contrast, no patents have been allowed to issue in the U.S. An estimated 300 patent applications have been sent to the U.S. Office of Patents and Trademarks by inventors using these systems, but no patents have issued citing the prior art. It is not credible that hundreds of scientists and inventors are all mistaken in their experiments and data, or that only the patent examiners are sufficiently educated to point out the faults of these inventions. Therefore, the Office of Patents and Trademarks has been denying inventors their constitutional rights to the protection of intellectual property. . . The end result of the above activities has been the following: Lack of education in the United States because few, if any, accurate articles on 'cold fusion' have appeared in any major publications except *Fusion Technology*. Lack of intellectual property development in the United States because although many 'cold fusion' patents issued abroad, no patents were allowed to be issued in the U.S. Lack of science and engineering development because little research and development is occurring at major U.S. universities, few corporations have invested heavily in low-energy nuclear reactions, and there is still no official DOE support. Lack of security of the United States."

Fox's contributions to the cold fusion and new energy fields will have a lasting effect. Some of his colleagues offered some general statements about his impact:

Charles Becker: "I think Hal's greatest contribution during the early days of cold fusion research was his tireless ferreting out of the details of new experiments and discoveries in low-energy nuclear reactions and other forms of new energy research. He amassed and reported an enormous amount of data from researchers over the years and expended his own resources to keep his, and the dreams of others, alive through his reporting. He tirelessly countered the scientifically inept news media by compiling, cataloging and dis-

seminating a continuous stream of scientific reports that many times showed encouraging results from careful experiments. Not many people would make such an altruistic commitment. When the final bell has rung at the completion of success in the race for LENR, I hope those from this era who are still around, and those in the future, will remember Hal as an important catalyst in the field. He cared."

Mitchell Swartz: "Hal was always a gentleman, friendly and a never-ending torch holder for this new, developing energy, cold fusion. As importantly, Hal was one of our first true friends in the cold fusion community. He was a very special man, part of a dwindling breed, but who fortunately left a beautiful mark with the world. We will always miss him and the dedication he showed to this field."

Patrick Bailey: "Hal always believed that the foundation and start of the quest for the new sources of potential energy for worldwide use would come from Utah, even perhaps from Salt Lake City. It could be true that we have had important guiding angels watching over us and steering our actions and research into uncovering the secrets of Nature to carefully apply them to society in the world today. Hal loved this work and we will all miss him and honor his work. His memory will animate and strengthen our resolve to succeed in our quests."

Robert Bush: "Hal was in the top four or five in terms of his importance for cold fusion. I will never forget his positive attitude, and the importance of his encouragement for Eagleton and me. We, along with Randall Mills, were named as the first of his "CF Researchers of the Year" in *Fusion Facts*. At the time I couldn't have felt more honored had I received a Nobel! I am happy that he got to see part of the turning of the corner lately with developments around the world. He was unique, and will be sorely missed."

Robert Bass: "Hal Fox has been my greatest benefactor. He was not only on the side of the angels, but in my case he was my angel."

John Bockris: "I first got to know Hal Fox in the very early days of the battle and it was just in the most torrid days of criticism and fighting and complete rejection of a new truth. Hal was on the side of the new truth and he went at it in a reasonable way, publishing newsletters and journals. *JNE* carried the Proceedings of the Second International Conference on Transmutation held in College Station, Texas, because the Texas A&M University forbade the discussion of new scientific facts. . . He was a hero who died in the battle for truth and science."

Thomas Valone: "Hal Fox was a true pioneer who supported all forms of new energy and proved it by editing the wonderful *JNE*. My wife and I will always be grateful to him for publishing our Proceedings of the First Conference on Future Energy (COFE) in 1999 as an issue of his journal."

Edmund Storms: "It's too bad Hal, like Martin Fleischmann, did not live long enough to see success finally being achieved, unfortunately by other people. Hal will be remembered as a good man who was on the side of the angels."