

Why Has It Taken So Long To Develop Fusion Energy?

by Marsha Freeman

Search for the Ultimate Energy Source: A History of the U.S. Fusion Energy Program

Stephen O. Dean
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Over the more than five decades that scientists and engineers have carried out theoretical research and conducted experiments to reproduce on Earth the energy of the Sun, there has been no argument on the part of policymakers that developing fusion energy is necessary. Not only are reserves of today's energy natural resources finite, thermonuclear fusion, as a qualitative leap, will create entirely new capabilities and applications in fields such as materials processing and space propulsion.

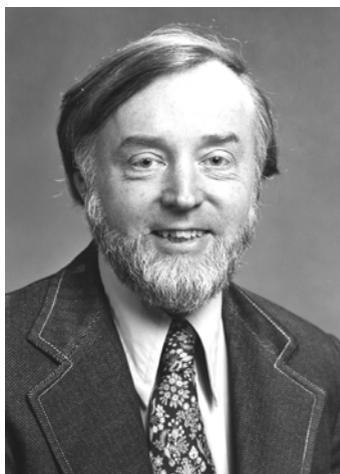
So, why has it taken so long to develop fusion energy?

There is no better person to tackle this question than Dr. Stephen Dean. With a scientific background, and experience in federal government fusion research programs—from the early 1960s Atomic Energy Commission to the multi-hundreds of millions of dollar fusion program in the late 1970s—through his present leadership in the

private Fusion Power Associates, Dr. Dean has been a tireless advocate for fusion research and development. In a field where very limited budgets have, at times, led scientists to pit their approaches to fusion energy against one another, in order to compete for funding, Dr. Dean has been a “disinterested” party, with no personal stake in any one program, and the personal integrity to evaluate projects on their merit.

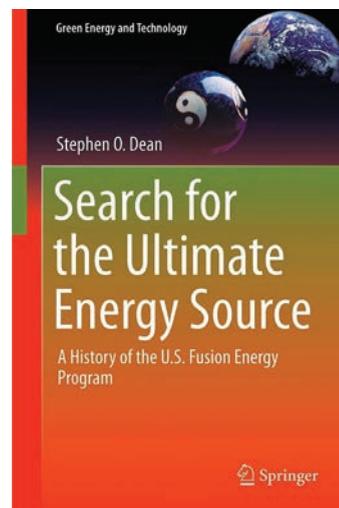
Search for the Ultimate Energy Source begins with a primer on fusion for the layman, and describes the rich history of

various alternative approaches to reaching the goal of fusion energy. But it is the succeeding chapters, which answer the question posed above, from the standpoint of one of the major players in fusion, which is a unique contribution. Dr. Dean's book describes the “glory years” of the 1970s, to the twists and turns through subsequent Republican and Democratic Administrations, which have, today, left the U.S. fusion program struggling for its very survival.¹ It is an insider's view of why fusion “is always 50 years away,” as critics opine, regard-



Stephen Dean, the founder of Fusion Power Associates, in Gaithersburg, Maryland.

1 “Scientists Launch a Fight To Save The U.S. Fusion Program,” p. 78, Fall/Winter, 2012-13, *21st Century Science & Technology*.



less of the progress that has been made.

It is a history in which the predecessor to *21st Century Science & Technology*, the Fusion Energy Foundation, played a major role in the late 1970s through the mid-1980s, bringing the science and technology of fusion to policymakers, and to the general public,² and which role this publication continues to the present.

As he should be, Dr. Dean has been recognized for his contributions to fusion. In 2004, he received the American Nuclear Society's “Senior Statesman of the Fusion Program Award.” The citation recognizes Dean for “stimulating the development of young scientists; maintaining a focus on the end product of fusion; keeping industry and utilities involved; and providing a platform for policy discussions.”

This is a book that should be in every library, and read by citizens and policymakers, alike. Due to the current irrational budgetary environment in Washington, there is no more important time to do so.

2 “The True History of the U.S. Fusion Program—And Who Tried to Kill It,” p.15, Winter 2009-2010, *21st Century Science & Technology*.