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Subject: FPN14-47 Fusion Program Notes - Fusion Pioneer Tihiro Ohkawa Passes, Age 86

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Tihiro Ohkawa, a pioneer of the U.S. and world fusion energy program died September 27 at age 86 in LaJolla, CA. Ohkawa was the long-time leader of the fusion program at General Atomics in San Diego.

He received his Ph.D. in physics from the University of Tokyo. He joined General Atomics in 1960. General Atomics was founded in 1955 as a subsidiary of General Dynamics and began a non-government fusion program in 1957, jointly funded by General Dynamics and the Texas Atomic Energy Research Foundation (TAERF). Many of the top scientists of the era went to work there, including Marshall Rosenbluth and Don Kerst. Ohkawa work for Kerst doing experiments on "multipole" configurations and soon became recognized for his intellect and innovative contributions. He and Kerst published a landmark paper "Multiple Magnetic Field Configuration for Stable Plasma Confinement" in 1961. Ohkawa took over the multipole effort at General Atomics in 1962 when Kerst left to accept a position at the University of Wisconsin.

TAERF decided to transfer its fusion effort to the University of Texas starting in 1967, causing all the senior fusion scientists, except Ohkawa, to obtain posts at other institutions. The Russian tokamak plasma confinement breakthrough of the mid to late 60s began a world trend toward that magnetic configuration. In 1969, Ohkawa proposed a kidney-shaped plasma tokamak. Tokamak plasmas were all circular in cross section to that point in time. He christened it "Doublet" for "double tokamak" and built a very small one with company funds.

During the 1970s, the U.S. fusion program underwent a large expansion. Ohkawa proposed building a major new tokamak at General Atomics called Doublet III. The project was funded. The group at General Atomics was very small at the time but soon grew in size as the project was completed. Under Ohkawa's leadership, the group at GA became recognized as among the world leaders in fusion research. The facility has since been upgraded several times

and is still in operation, now known as DIII-D and producing outstanding scientific results.

Tihiro retired from General Atomics in 1994 and formed TOYO Technologies. Ten years later he formed, with Masano Nishikawa, Nano Fusion Technologies where he continued to conceive of new approaches to fusion and applications of fusion technology up to the time of his death.

He published more than 170 scientific papers, holds more than 50 patents, and was the recipient, in 1979, of one of the American Physical Society's most prestigious awards, the James Clerk Maxwell Prize for Plasma Physics. He received Fusion Power Associates Leadership Award in 1984 and its Distinguished Career Award in 1998.

Expressions from the community may be sent to his wife, Yoko.