



T R A N S A T O M I C

TRANSATOMIC POWER RELEASES DETAILS OF INNOVATIVE NUCLEAR REACTOR DESIGN

CAMBRIDGE, Mass. – July 6, 2016 – Transatomic Power Corporation today released a new technical white paper detailing its ground-breaking nuclear reactor design, an unprecedented step for an early-stage nuclear reactor developer. The paper, which was posted to the company’s website, provides an in-depth look at the science underlying the core design, and further demonstrates its multiple advantages over existing power generation technologies.

“This design is the result of years of open, clearly communicated scientific progress,” said Dr. Leslie Dewan, Transatomic’s Chief Executive Officer. “Our research has demonstrated many-fold increases in fuel efficiency over existing technologies, and we’re really excited about the next steps in our development process.”

The news follows last month’s announcement that the company was awarded a \$200,000 grant from the U.S. Department of Energy’s Gateway for Accelerated Innovation in Nuclear (GAIN) Nuclear Energy Voucher pilot program to perform high-fidelity modeling of its reactor design in partnership with the Oak Ridge National Laboratory (ORNL).

“These are truly remarkable results, and represent a major step forward for advanced nuclear technology,” said Ray Rothrock, a veteran Silicon Valley venture capitalist, MIT-trained nuclear engineer, and Chairman of Transatomic. “Transatomic’s design is the key to a future of carbon-free electricity with minimal environmental impact.”

“Transatomic is defining a new era in nuclear energy, and we’re proud to support their mission and work toward an operating reactor,” said Scott Nolan, Partner at venture capital firm Founders Fund. “A better future needs nuclear power, and nuclear power needs Transatomic’s breakthroughs in order to be viable.”

Transatomic is developing a next-generation Molten Salt Reactor (MSR) based on technology first demonstrated at ORNL in the 1960s, and has been completing reactor core performance analyses as part of its technology development work. The company released results that show promise for an economical power plant that can generate carbon-free baseload power and even extract energy from traditional nuclear reactors’ so-called “spent fuel.”



Traditional “light water” nuclear reactors, named for the material that they use to control their nuclear chain reactions, are limited in the amount of energy they can extract from their solid uranium fuel. The Transatomic design, which instead uses a liquid uranium-salt mixture, does not have the same performance constraints as light water designs. It can therefore extract twice as much energy from its fuel and use nuclear waste as a fuel source.

Such a capability allows the company to directly address one of nuclear energy’s biggest environmental challenges: the generation of nuclear waste that remains radioactive for hundreds of thousands of years after it is removed from a plant.

Dewan pointed out that solving the nuclear waste problem requires two big-picture steps. “First, the industry has to reduce the rate at which waste is produced. Otherwise, we’ll run into an insurmountable long-term storage problem,” she said. “Second, nuclear innovators must work to design reactors that can tap the remaining energy in the waste, and ensure that the reactor has a ‘net-negative’ waste profile, where the reactor produces less waste than it takes in.”

The company’s data show that it has cleared the first hurdle.

“Right now, we’ve calculated an 83% reduction in the waste the reactor generates annually as compared to existing reactors, using only uranium that regulators consider ‘low-enriched’ [in uranium-235, the primary fissile isotope],” noted Transatomic’s Chief Technology Officer, Mark Massie. “Even under the current fuel supply chain, which doesn’t enrich fuel past 5% U-235, we still reduce annual waste production by over 50%.”

The company also says that its reactor is capable of achieving a net-negative profile, and that subsequent design work will focus on maximizing the energy it can extract from spent nuclear fuel. The work will include developing new tools to model other reactor physics phenomena, and completing the overall design of its nuclear power plant.

About Transatomic Power Corporation

Transatomic Power is the world’s leading technology innovator in the field of liquid-fueled nuclear reactors. The company is based in Cambridge, MA, with the majority of its funding coming from the private sector.

The company’s novel reactor architecture is based on inventions developed by Dr. Dewan and Mr. Massie while graduate students in the Massachusetts Institute of Technology (MIT) Department of Nuclear Science and Engineering (NSE). The reactor’s use of liquid fuel makes it possible to generate power at atmospheric pressure, greatly reduce the creation of long-lived nuclear waste, and improve safety and cost. The basic approach was demonstrated in the 1960s, and now the company has developed key material and design improvements that could transform the nuclear industry.

More information, including a technical overview, is available on the company’s website. Visit <http://www.transatomicpower.com/>.

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