

## **Aerojet tests advanced rocket engine injector**

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*Staff -- Test & Measurement World, 10/1/2003*

Aerojet (Sacramento, CA) recently announced the successful hot-fire test of a full-scale Tri-Fluid Injector. The Tri-Fluid injector is a component of the Advanced Reusable Rocket Engine (ARRE) that Aerojet is developing for the Air Force's in-space reusable propulsion and maneuvering requirements. This main combustion device enables the closed-cycle configuration of the ARRE, which provides for higher performance and greater throttling capability. Injector combustion is accomplished by mixing nontoxic hydrogen peroxide and jet fuel with ARRE's decomposed peroxide turbine exhaust.

The test, which consists of the full-scale Tri-Fluid Injector, a workhorse chamber, a turbine simulator, and a 98% hydrogen peroxide catalyst bed provided by General Kinetics, was performed under sea-level conditions.

Aerojet is conducting the Tri-Fluid Injector test in its new hydrogen peroxide engine test facility, which was built for development of rocket engines containing environmentally friendly hydrogen peroxide propellants. This facility, which is also being used to test NASA's Integrated System Test of Airbreathing Rocket injectors and other Aerojet research and development efforts, is capable of testing rocket engines with up to 100,000 lbs of thrust and provides both sea-level and altitude test conditions. <http://www.aerojet.com>.