

NASA, Roscosmos to discuss nuclear powered rocketry

6 April 2011, by Bob Yirka

(PhysOrg.com) -- Anatoly Perminov, director of the Russian Space agency Roscosmos, has announced plans for an upcoming meeting between the Russian space agency, and its counterparts in the United States, France, Germany and Japan (countries with a high level of nuclear engineering capability) on April 15. The meeting is being held to discuss the possibility of cooperation between the nations in building a nuclear powered rocket.

Cooperation between the Russians and the United States in space exploration, is nothing new of course, dating back to the 1970's and the Apollo-Soyuz missions, and more recently with astronauts from the U.S. and many other nations riding up to the space station on Russian rockets. What is new is the possibility of not just a rocket powered by nuclear energy, but a joint international project based on a technology that causes people from most any country to feel a little fear. The idea of a nuclear powered rocket exploding in the air shortly after takeoff (Challenger) or burning up upon reentry (Columbia) and spreading radioactive material over thousands of miles below is an issue that won't go away any time soon.

This would not be the first time that a spacecraft has employed the use of nuclear power (Soviet Topaz spy satellites, etc.) but it would be the first time an actual nuclear reactor would be installed onto a rocket and sent into space.

Perminov, in his announcement, reiterated that [Roscosmos](#) has been working on nuclear powered rocket designs for quite some time and is now ready to move forward on developing an actual rocket, though there seems to be some discrepancies regarding the type of engine the agency has in mind. In earlier reports, it seemed the Russians were considering a reactor heat engine, but of late seem to be more of a mind to use the reactor to produce electricity to drive an ion or plasma type engine.

The idea of using nuclear power to drive a rocket is not unique to the Russians, [NASA](#) and likely other space agencies have been working on their own designs for a nuclear powered rocket, as most in the field agree that chemical based engines just won't work for long range space exploration. The sheer weight of the fuel along with the huge amount of cargo [space](#) required to hold it, prevent any serious thought of very long missions. Nuclear power on the other hand would require far less of both, plus it would require fewer moving parts.

At this point, though not stated specifically, it appears the only thing holding back the Russians is the money to pay for their project, with current estimates at or near \$600 million; and it's the likely reason that the Russians are looking to form a consortium. Whether the United States or any of the other invited guests is willing to sign on to such a partnership though, is anyone's guess.

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