

## Trash-can size nuclear generator can power bases on Moon and Mars.

"Three recent tests bear out that nuclear surface power systems could be an important source of energy for exploration on the moon and Mars," said Mike Houts, project manager for nuclear systems at Marshall Space Center. "This power system could provide an abundant source of reliable, cost-effective energy and may be used anywhere on the lunar surface."

For this particular test series, the Marshall reactor simulator was linked to a Stirling engine that converts heat to electric power. The Marshall reactor simulator included a specialized pump and a coolant loop filled with a mixture of molten sodium and potassium to provide heat to the Stirling engine at conditions very similar to an actual fission-based surface power system.

NASA's current plan for human space exploration is to return astronauts to the moon within a few years on expeditions that could lead to a permanent outpost for exploring the lunar surface and testing technologies that could aid a manned mission to Mars.

"A small fission-based nuclear reactor coupled with a Stirling engine could provide up to 40 kilowatts of usable energy, enough to support a moon base or Mars outpost," said Houts. That's about the same amount of power needed to supply eight houses on Earth.

Includes excerpts from [Science Daily](https://www.sciencedaily.com)

Info: [shpr.fyi/trashcannuclear](https://shpr.fyi/trashcannuclear)



## Four Big Solar Projects Proposed East of Yakima

Four big solar projects in the permitting process are proposed east of Yakima and Moxee mostly north of State Route 24 on south-facing "sagebrush" land that is only very minimally useful for grazing, mostly currently apparently unused.

A few grazing sheep will help keep the little land not under the panels mowed.

The projects will be close to the big Bonneville power lines and Hanford Nuclear Reservation.

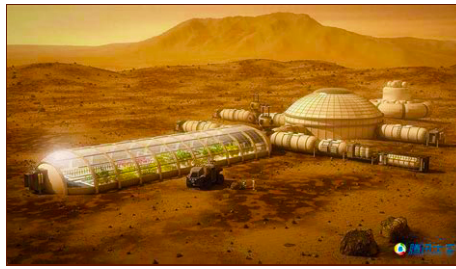
The permitting processes began about four years ago.

The goal is to have the facility running by the end of 2024.

If all constructed, the projects would provide enough power for about 68,000 homes

1. **Goose Prairie**, 80 megawatts, 264,000 panels, 625 acres.
2. **Black Rock Solar**, 94 megawatts, 264,000 panels, 1,060 acres.
3. **High Top Solar**, 80 megawatts, 264,000 panels, 1,564 total acres in High Top and Ostrea projects.
4. **Ostrea Solar**, 80 megawatts, 264,000 panels

Info: [shpr.fyi/3NHwmqU](https://shpr.fyi/3NHwmqU)

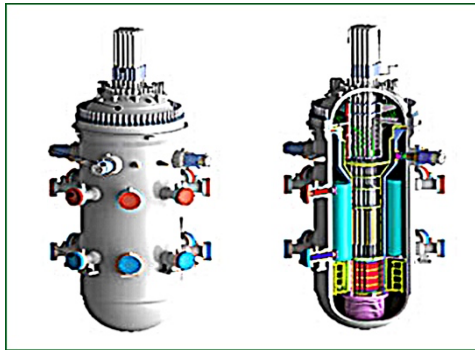


## Solar Beats Nuclear at Many Potential Space Station Sites on Mars

Apr. 27, 2022 — While most missions to the moon and other planets rely upon solar power, scientists have assumed that any extended surface mission involving humans would require a more reliable source of energy: nuclear power. Improvements in photovoltaics are upending this calculus.

A new study concludes that a solar power system would weigh less than a nuclear system and would be sufficient to power a colony at sites over nearly half the surface.

Info: [shpr.fyi/solarbeatsnuclear](https://shpr.fyi/solarbeatsnuclear)



## New "Smart" Reactor supplies power and water for 100,000 people

**Safely generates power and, as a by-product, desalinizes sea water into fresh water.**

The "Smart" Small Nuclear Reactor (SMR) refers to a small nuclear reactor, which has a power output of no more than 300Mwe and features that give it a clear advantage over conventional nuclear reactors found in large-capacity power plants. Such advantages include greatly enhanced safety and greater flexibility regarding the possible installation sites and power output, which is why the SMR is receiving worldwide attention these days as a viable alternative energy source to rely on to achieve carbon reduction.

SMART reactors are targeted toward seaside communities in need of power and fresh water, for whom Smart will be a huge blessing.

Development of the SMART reactor, a project being jointly pursued by South Korea and Saudi Arabia, was initiated in 1997, with the pre-project engineering work having been carried out during the period of 2015 to 2018. Currently, they are working to obtain the Standard Design Approval for the reactor. Once the Standard Design Approval has been acquired, construction of the initial SMART reactor will start in earnest.

Smart uses "Passive Safety" meaning it automatically shuts down needing no operator or active power source for emergencies, but by natural gravity and cooling the unattended reactor simply falls into an inactive natural state.

Info: [shpr.fyi/smartreactor](https://shpr.fyi/smartreactor)

**Check out this week's Bible Readings on page 6** which includes Peter speaking to the Pentecost crowd, *"Some, however, made fun of them and said, 'They have had too much wine.' Then Peter stood up with the Eleven, raised his voice and addressed the crowd: 'Fellow Jews and all of you who live in Jerusalem, let me explain this to you; listen carefully to what I say. These men are not drunk, as you suppose. It's only nine in the morning! No, this is what was spoken by the prophet Joel: 'In the last days, God says, I will pour out my Spirit on all people.'" Acts 2: 12-17 NIV*

Dave Bunting, May 30, 2022

Credits in links below items.

See these columns on my blog

[daverant.com](https://daverant.com)

