

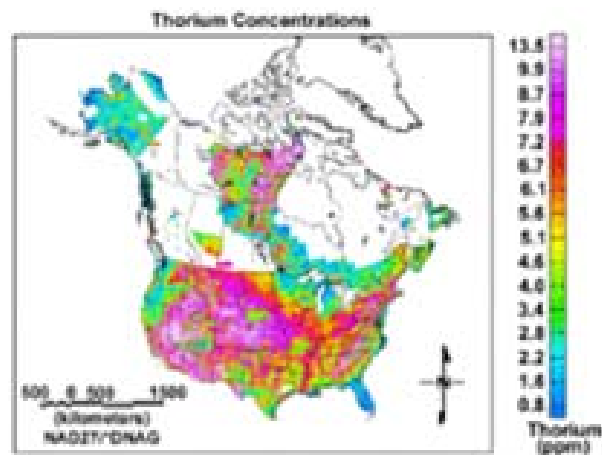
THORIUM MOLTEN SALT REACTORS TMSR



BENEFITS:

- Safety – No meltdown risk
- Waste – Decays in 200 years vs current decay rate of Uranium; Requires smaller quantities of material vs requirements of Uranium
- Not able to be weaponized

AVAILABILITY OF THORIUM: 4 times more abundant than Uranium. Thorium is a byproduct of Rare Earths.

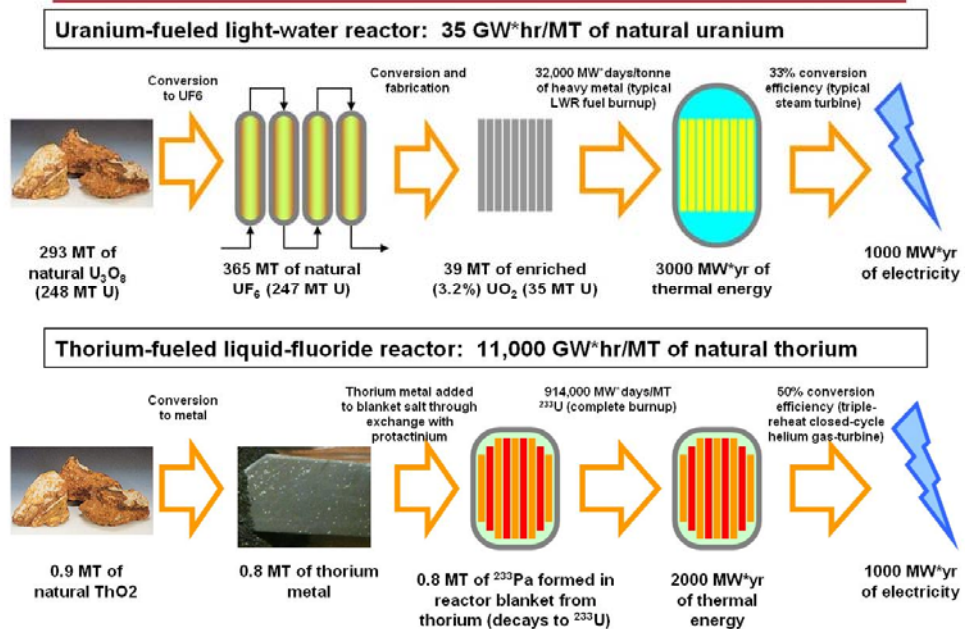


China will be building TMSRs over the next 20 years.

Demand for power in China, India, and South Korea is stimulating construction of new Nuclear Power plants. TMSR is recognized as safer, cleaner, and more cost effective than Uranium driven nuclear power.

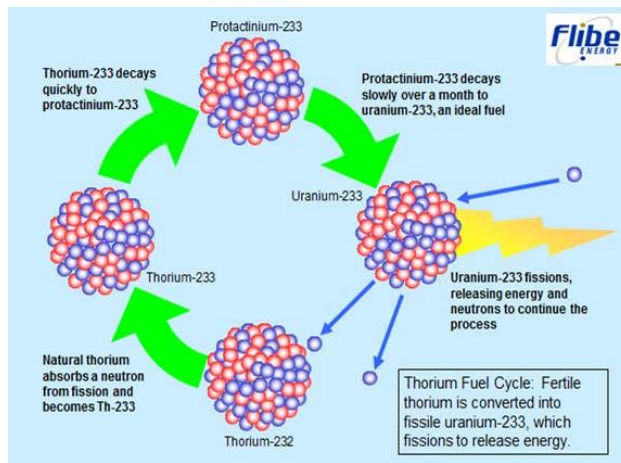
If a Thorium Molten Salt Reactor is So Great, Why Now and Not Earlier?

Energy Extraction Comparison



Uranium fuel cycle calculations done using WISE nuclear fuel material calculator: <http://www.wise-uranium.org/infc.html>

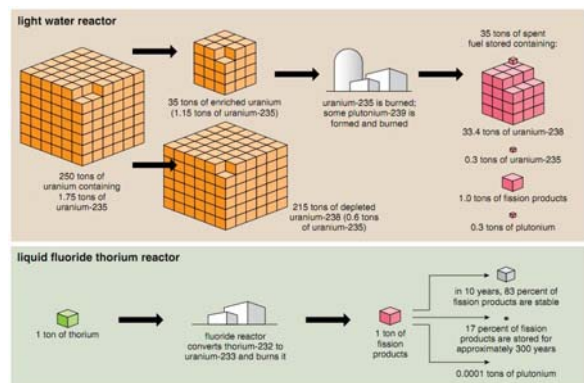
- Oak Ridge National Laboratory explored and developed a Molten Salt Reactor in the 1960's.
- The project was abandoned primarily due to the pressures of the Cold War for Plutonium (residue from Uranium) for nuclear bombs.
- China is building upon the ORNL research and developing TMSRs to meet their country's growing energy demand.
- US Nuclear Corp has received its first order for radiation detection and monitoring instrumentation for a TMSR from China.



- Thorium Molten Salt Reactors (TMSR) do not require the intricate containment infrastructure currently in use today with Uranium fueled Nuclear Power Plants.
- The Nuclear Spring generated by the meltdown of Fukushima in 2011 was a direct result of a failed cooling mechanism. TMSRs are cooled by Molten Salt not by water. Cooling failures are not possible.
- TMSRs eliminate some key issues such as corrosion caused by fluoride as seen in research with Liquid Fluoride Thorium Reactor research (LFTR).
- TMSRs can be smaller facilities. In some cases manufactured off site and transported.
- Energy output is dictated by size of facility.
- The abundance of Thorium provides an inexpensive fuel source.
- Thorium is not a material suitable for weapons and limits the proliferation risk



Steam Release – not Cooling Towers



Thorium versus Uranium