

# PUBLIC SUBMISSION

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## Submitter Information

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## General Comment

Docket Number: NRC-2013-0230

Dear NRC,

I am writing to support inclusion of nuclear power from Thorium, in particular from LFTR (Liquid Fluoride Thorium Reactor), in your Strategic Plan. Compared to present nuclear reactors based on LWR (Light Water Reactors using Uranium/Plutonium), I have listed below some key advantages of thorium reactors based on LFTR (comparisons based on production of equal amount of electricity):

- 1) Years of reserves on planet: 100 years of Uranium vs. minimum 100.000 years of Thorium
- 2) Total Efficiency for production of Electricity: 1% for LWR (Uranium) vs. 35% to 50% for LFTR (Thorium)
- 3) Mass of ore needed for mining production: 4.000 times LESS ore needed to produce Thorium.
- 4) Radiotoxicity of atomic waste: 10.000 times LESS radiotoxicity from LFTR
- 5) Mass of radioactive waste – 200 times less for LFTR
- 6) Mass of radioactive waste requiring long-term storage (more than 10 years) – LFTR produces 1.000 times less than LWR
- 7) Storage time of long-term radioactive waste: 10.000 to 1 million years for LWR vs. only 300 years for LFTR
- 8) Safety – LFTR is far safer with no risk of explosion or release of radioactivity. The LFTR has “walk-away” safety with no need for emergency cooling, pumps, water or other emergency measures
- 9) Nuclear proliferation – LFTR cannot make good nuclear bomb material
- 10) Cost of electricity production – electricity from a LFTR is cheaper than any other source we have today including coal and natural gas

All primary energy sources (oil, coal, gas, wood, uranium) used today worldwide could be replaced by mining 1

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football field per year (5 meters deep). Where very high grade ores can be found (southern India), mining only one-quarter of a football field (5 meters deep) per year would supply all the world's energy needs.

This technology is a MUST for the United States. It is the cleanest, most efficient and most environmentally friendly source of energy available. It is very revealing that the most prestigious environment prize in Europe (Green Tec Award) was won last year by a nuclear reactor design (DTR – Dual Fluid Reactor) which has many similarities to the LFTR, in particular a liquid core in which fission takes place. This is the first time that the most prestigious environment prize in Europe has been won by a project based on nuclear energy.

Kind Regards,

Kevin Devine