

# ThorConPower

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Ms. Cheryl Moss Herman  
U.S. Department of Energy, Mailstop B-409  
Office of Nuclear Energy  
19901 Germantown Rd.  
Germantown, MD 20874-1290

Dear Ms. Herman,

I am CEO for Martingale, a US company developing a thorium based molten salt reactor called ThorCon (if curious see [ThorConPower.com](http://ThorConPower.com)). We are one of several advanced nuclear startups using thorium. One of our big concerns is where to get the enriched fuel. Our reactor is a thermal reactor using a mix of thorium (80%) and uranium enriched to 19.75%. U238 in the fuel generates plutonium and other transuranics which is a concern for many. Further, the U238/Pu239 fuel cycle is less fuel efficient than the Th232/U233 fuel cycle. While the reactor can operate on lower enrichment doing so means we have more U238 and less thorium in the reactor. This results in more transuranic waste and higher fuel consumption.

A reliable supply of 19.75% enriched uranium is important to us. I believe a supply greater than 5% is important to every advanced reactor vendor. It may be possible to acquire such fuel from the Chinese or Russians but this makes us dependent on our competitors for fuel - a situation that is most unattractive.

While current suppliers have the capability to install and operate equipment to create 19.75% enriched fuel they require a sizable, known market to make the investment and it will take time. By limiting down-blending to 19.75% the US DOE can bridge the gap and be a reliable supplier enabling the US advanced nuclear industry until enrichment companies have installed capacity and gained the licenses to produce the fuel.

Indeed, it would be most cost effect to limit down blending of all HEU to 19.75% since the fuel will have a higher value then. Otherwise, it is down blended only to be re-enriched later on.

Our plans include a need for 13 tonnes LEU20 in 2019 for a first of a kind reactor and then 80 tonnes per year and climbing starting in 2023. This is based on initial

agreements to install 3.5 GWe nuclear power plants in Indonesia. We anticipate demand will ramp up to 250 tonnes/year by 2026.

Sincerely yours,

Lars Jorgensen

CEO Martingale/ThorCon