BUSINESS COUNCIL
214 W. 15th Street
Cheyenne, WY 82002
Tel: (307) 777-2800 Fax: (307) 777-2838
www.wyomingbusiness.org

Memorandum

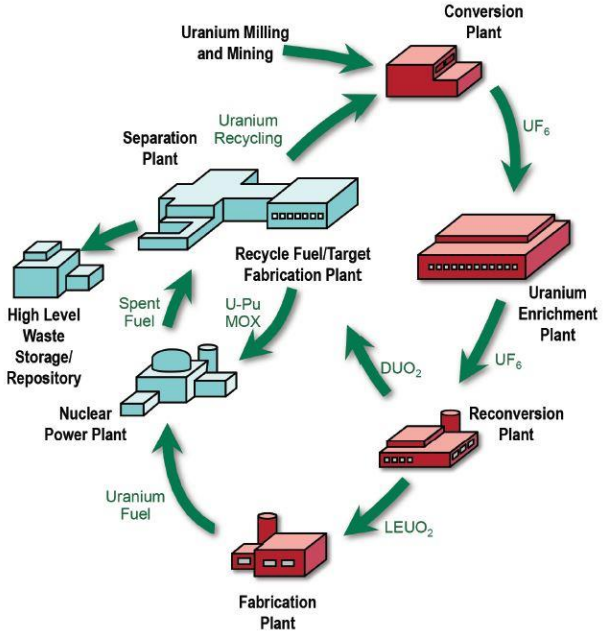
To: **Joint Minerals, Business and Economic Development Interim Committee**
From: **Shawn Reese, CEO**
Subject: **Uranium Conversion Project**
Date: **August 11, 2016**

Opportunities.

The Wyoming Business Council has been looking at opportunities for uranium conversion since 2013. We are in consultation with Jim Graham, Nuclear Fuel Cycle Consulting. Opportunities include:

- Add value to vast reserves of uranium ore that is currently mined in Wyoming.
- Wyoming has the second largest amount of reserves in the United States. Currently four mines are operating, producing approximately 4 million pounds per year of yellowcake.
- Depending on world demand Wyoming could be involved in all aspects of the fuel cycle.
- Wyoming has the potential to produce 15-20 million pounds per year of yellowcake.
- This production would take place in the Powder River Basin, Gas Hills, Shirley Basin, Sheep Mountain, and Green Mountain areas of Wyoming.
- In the 60s and 70s Wyoming had over 3000 uranium mining jobs (About 100 miners per 1 million pounds of annual production).
- WBC's Consultant has met with companies throughout the world promoting Wyoming as the location for a new modern uranium conversion facility

Uranium conversion. After the yellowcake is produced at the mill, the next step is conversion into pure uranium hexafluoride (UF6) gas suitable for use in enrichment operations. During this conversion, impurities are removed and the uranium is combined with fluorine to create the UF6 gas. The UF6 is then pressurized and cooled to a liquid. In its liquid state it is drained into 14-ton cylinders where it solidifies after cooling for approximately five days. The UF6 cylinder, in the solid form, is then shipped to an enrichment plant. UF6 is the only uranium compound that exists as a gas at a suitable temperature. (Source: US Nuclear Regulatory Commission)



Current Facilities. There is one conversion plant operating in the United States: Honeywell International in Metropolis, Illinois. Canada, France, United Kingdom, China and Russia also have conversion plans. All western conversion facilities are producing below normal capacity. Conversion market continues to be impacted by past and present events in Japan.

Global demand. There are over 60 reactors in some stage of construction now. It is estimated that there will be 100 new reactors worldwide within the next 30 years with another 300 proposed during this period according to a Cameco report. World requirements for UF6 under the Reference Nuclear Power Growth forecast are project to raise gradually from 59.9 million kgU as UF6 in 2016 to 93.4 million kgU by 2036.

WBC's Consultant has met with companies throughout the world promoting Wyoming as the location for a new modern uranium conversion facility

Potential Facility requirements

- cost @ $ 500 million in 2012 dollars
- employ @ 160
- minimum of 50 acres
- two lane highway is adequate
- rail spurs
- Substation supplying up to 55,000 MWh
- Water for cooling 650,000 m3, is recycled with 10% loss
- Natural gas
- Low level waste

Next steps

- In June 2016 consultant and WBC staff met with Wyoming DEQ. Information was provided by the consultant for DEQ to prepare a permit mapping process.
- Determine workforce/engineering pipeline
- Continue courting possible investors