TERRAPOWER NUCLEAR POWER PLANT ANNOUNCEMENT

By Chairman Oscar Paulson, WMA Uranium Industry Committee

Uranium Industry Committee Members

Governor Gordon announced yesterday that "*The state will house the first Natrium reactor in a partnership with Gates' TerraPower company, the U.S. Department of Energy and PacifiCorp*…" It will be built "…within one of four retiring coal power plants…" **(Source)**

This is a positive step for Wyoming toward becoming a technology leader in the generation of nuclear power.

A video of the entire announcement (it is slightly over 43 minutes long and the first 9.5 minutes consist of footage prior to the beginning of the Governor's announcement) may be viewed at the **link here**.

The link to the *Casper-Star Tribune* article regarding the announcement is **included here**.

A link to TerraPower's press release can be **found here**.

The Wyoming Mining Association's (WMA's) press release is below.

WYOMING MINING ASSOCIATION RESPONSE

Wyoming Mining Association Executive Director Travis Deti responded to the announcement.

"This is an exciting opportunity for Wyoming to open a new chapter in the nuclear power industry. Advanced nuclear generation clearly fits the bill for zero-emission, reliable and dispatchable electricity necessary to power our country into the future. Wyoming is the nation's leader in the production of domestic uranium. Our producers stand ready, willing and able to safely and responsibly provide the vital fuel for America's next generation of nuclear power," he said.

The Wyoming Mining Association (WMA) is a statewide trade organization that represents and advocates for 28 mining company members producing bentonite, coal, trona (natural soda ash), and uranium, according to a press release. WMA also represents 120 associate member companies, one railroad, two electricity co-ops, and 200 individual members.

This small modular reactor (SMR) is a fascinating piece of technology. It is a Traveling Wave Reactor (TWR), though according to Chris Levesque, President and CEO of TerraPower the initial planned reactor will be operated as a High Assay Low Enriched Uranium (HALEU) reactor and not as a Traveling Wave Reactor (TWR). Subsequent larger units would be operated as Traveling Wave Reactors (TWRs). These reactors are liquid sodium cooled allowing them to operate at normal/ambient atmospheric pressure

eliminating the need for high pressure piping or other high-pressure infrastructure. In addition, in the Traveling Wave Reactor (TWR) mode, the unit due to its use of fast neutrons (~1.1×10^{24} fast neutrons (E > 0.1 MeV) per cm2 fluence -). **(Source)**

Will function as described below:
"The Traveling Wave Reactor design also operates at atmospheric pressure, which removes the possibility of a pressure-related destabilizing event. It will be capable of utilizing fuel made from depleted uranium – a waste byproduct of the uranium enrichment process – allowing it to gradually convert the fuel through a nuclear reaction without removing it from the reactor's core." **(Source)**

THE FOLLOWING ARE SOME LINKS TO TECHNICAL PAPERS ABOUT TRAVELING WAVE REACTORS (TWRS):

Traveling-Wave Reactors: A Truly Sustainable and Full-Scale Resource for Global Energy Needs
(**Click here**)

The Traveling Wave Reactor: Design and Development
(**Click here**)

It is planned to invite Chris Levesque, President and CEO of TerraPower to a (hopefully the next) Uranium Industry Committee meeting to discuss the TerraPower reactor technology in depth. Depending upon his availability and other scheduling issues, a single meeting devoted to the TerraPower reactor may be held.

Oscar Paulson
Chairman