



Annual Report – 2021 EMD Uranium (Nuclear and REE) Committee

Michael D. Campbell, Chair, Supported by Vice Chairs and Advisory Group.

This is a summary of the [2021 Annual Report](#) of the EMD Committee on Uranium (Nuclear and Rare Earths), aka UCOM. During the past year of the Pandemic, UCOM personnel began to learn about preparing and producing *Zoom*, *PowerPoint*, and *YouTube* virtual presentations ([more](#)).

Based on the UCOM personnel reviews over the past months, we have determined that:

- ❖ A significant rise in [uranium prices](#) has been underway since early 2020, but the major anticipated rise has not yet arrived (late May, 2021). Without a significant rise in yellowcake price, the U.S. uranium mines remain shuttered. However, many uranium companies are beginning to resume drilling their properties to expand their resource base and a number of mines in the U.S. ([Texas](#), [Wyoming](#), [South Dakota](#), etc.) are either on stand-by or are available for rapid development of operations.
- ❖ Senior U.S. uranium industry personnel indicate that recent activities concerning [Section 232](#) requesting protection of the U.S. uranium mining industry from overseas foreign government-supported uranium mining are underway with support in Congress and by President Biden, but he is sending mixed messages of support ([more](#)).
- ❖ Numerous discoveries continue to be reported of [high-grade uranium deposits](#) have been made in Canada and new low-grade deposits are under development in [Argentina](#) and [Peru](#). The main Australian uranium mines are preparing for operations.
- ❖ Additional work is underway on an undeveloped, new uranium “roll front” district that has been identified in the [eastern Seward Peninsula of Alaska](#) with alkaline source rocks containing high concentrations of uranium, thorium and rare-earth elements occurring around the eastern periphery of the basin.
- ❖ Many hard-rock uranium deposits also contain associated REEs to the extent that [co-production of raw REEs, thorium](#), and other [critical metals](#) are underway for stockpiling, awaiting shipment to processing sites around the world ([more](#)).
- ❖ 93 nuclear power plants remain in operation in the U.S., a few are scheduled for retirement on the grounds of economics and low-priced natural gas, but two new reactors are near completion, and President Biden has vowed to maintain the current nuclear plants and perhaps unshutter some of those that have been closed prematurely ([more](#)). The State of Wyoming, [TerraPower](#) and Rocky Mt. Power have begun to build a SMR to replace a coal plant.
- ❖ Following a 30-year period during which no new reactors were built in the U.S., it is expected that other new plants will be begin construction soon, which has resulted in 16 [license applications](#) made since mid-2007 are proposing to build 24 new nuclear reactors, most of which are of the new small modular reactor ([SMR](#)) design.
- ❖ Recently, [coal production & burning](#) is decreasing in the U.S., but not in world; although coal may be useful [without burning](#) ... [graphene](#) and [REE](#). Natural gas may also be useful without burning ... [hydrogen](#).
- ❖ The UCOM has concluded that:
 - Coal-burning power plants should be the primary target for shuttering operations in the U.S. and the world. China will be limiting coal for generating electricity replaced by nuclear over the next 10 years.
 - The current stampede into large-scale renewable (wind and solar) projects should fade as the fundamental economic failings become apparent because of 1) the under-estimation of the O&M costs during their design phases causing increasing cost of electricity, 2) their power intermittency, and 3) their need for batteries, requiring grid power for back-up.
 - Nuclear power (large- & SMR-scale plants) will continue to emerge to replace the burning of coal, then replacing natural gas, and then wind & solar over the next 20 years ([more](#)).
 - Uranium resources are available from U.S., Canada, Australia, and other friendly countries to meet demand for a hundred years, until large-scale fusion plants are built to power the electrical grid.