

The Worldwide Uranium Boom and its Implications for Alaska

Curt Freeman, CPG

Avalon Development Corporation

In the last 5 years the worldwide demand for uranium has skyrocketed and with it the price of uranium. This demand is being driven by an increasing use of U235, the uranium isotope that is required for fuel to create electrical power. Enormous electrical power demands, both current and forecast, are a direct function of rapidly expanding economies in China, India, Russia, the EU and North America. This demand also is being increased by electrical suppliers' desire and/or need to produce more electricity with less environmental impact. In addition, the desire to create electrical power at a price that is insensitive to the commodity price of the fuel source is pushing producers to invest in nuclear power plant construction.

At present there are 435 operating nuclear power plants in the world generating approximately 16% of the world's total electricity. These plants consume approximately 42,000 tones of uranium metal annually. Over 75% of these operating nuclear power plants are located in the U.S., France and Japan. There are currently 28 new nuclear power plants under construction and an additional 64 new plants on order. Perhaps most important, there are 158 new plants that have been proposed but not yet approved, with China, India and Russia accounting for over 75% of this proposed new plant construction.

The spot price of uranium has increased over 1,000% in the last 5 years as demand for uranium has skyrocketed while production for existing and new mines has increased only marginally. The supply shortfall for the last several years has been met in large part by converting decommissioned nuclear warheads containing highly enriched uranium from the U.S. and Russia nuclear warheads that have been decommissioned by various treaties signed by these two companies. That supply is finite and efforts to enrich low grade waste nuclear materials to allow their use in nuclear reactors still does not create sufficient U235 for electrical generation needs. This supply short-fall is projected to grow over the next 10 years, thereby insuring higher prices for U3O8 from existing and new mine production.

Alaska's future role in supplying uranium to producers is uncertain at present but at least two uranium projects have become active in the last 3 years while numerous companies are looking at exploring and developing one or more of Alaska's 155 documented uranium occurrences. From a geological standpoint, several regions of Alaska are particularly favorable for hosting uranium mineralization. These favorable areas include southeast Alaska, southcentral Alaska, the Seward Peninsula and the Brooks Range. Alaska's complex accretionary history has left the state with a broad range of genetically different uranium occurrences including intrusive hosted, sandstone (roll-front) hosted, unconformity hosted, breccia hosted and contact metamorphic hosted prospects. Uranium resources have been loosely defined at two of these occurrences, both of which are under active exploration.

While there currently are no Alaska uranium deposits that are in production or in the advanced development stage, Alaska is likely to play a role in the future global uranium market place.