

Managing used nuclear fuel deep underground

By Greg Plain, Senior Engagement Advisor, Aboriginal Relations, NWMO.

This is the third of six columns.

In the last installment, I talked about how Canada arrived at its plan to safely manage the country's used nuclear fuel.

The plan involves isolating and containing the used fuel in a deep geological repository in an area where the rock is extremely stable and where people nearby, including First Nations and Métis communities, are well informed and willing to host a major infrastructure project.

In this column, I'll describe how a series of engineered and natural barriers deep underground will work together to safely contain and isolate used nuclear fuel.

The first barrier is the fuel pellet. Fuel pellets are a ceramic, made from highly durable baked uranium dioxide powder; they are stored end-to-end in long tubes made of a strong corrosion-resistant metal.

The second barrier is the fuel bundle, which contains a number of these tubes.

The third barrier is a copper-coated container. The containers are engineered to resist corrosion, and to keep the used nuclear fuel completely isolated until its radioactivity decreases to safe levels.

The fourth barrier is a buffer box made of highly compacted bentonite clay, that encases each container.

The fifth barrier is a stable rock formation approximately 500 metres underground.

My colleagues at the NWMO are hard at work testing and re-testing all of these barriers.

In my next column, I'll introduce you to NWMO's Indigenous Knowledge policy – why it exists, how it is unique, and how it came to be.

You can always get more information at www.nwmo.ca, or by contacting us at askthenwmo@nwmo.ca.

