

POWER PLANTS IN SAFE HANDS WITH KROMEK

When it comes to safety, you've got to be on the ball in a Power Plant and with the support of Kromek, Mirion Technologies did just that!

Summary

Mirion Technologies integrated Kromek's GR1 gamma spectrometer into an optimal solution for monitoring high count rates typically found in nuclear power plant reactor coolant facilities. The GR1 and its high resolution is combined with shielding and data acquisition software to enable the identification of specific isotopes in the reactor fluid, and the real-time monitoring of their activity. Such information is key for reactor operators to understand and track the performance of nuclear reactors.

Mirion Technologies building new products using Kromek detectors

[Mirion Technologies](#) have packaged the [Kromek GR1 spectrometer](#) into an application called the CSM, or continuous spectroscopic monitor. This package combines the spectrometer with shielding and data acquisition software to provide real-time monitoring of high count rate applications such as those found in nuclear power plant reactor coolant facilities.

Reactor fluid in nuclear power plants contains many radioactive isotopes. The relative ratio of different isotopes in the reactor fluid is an indicator of the state of the reactor and can be used to inform reactor operators of different actions that can be used to improve the performance of the reactor. By being able to identify specific isotopes in the reactor fluid and being able to monitor the activity of these isotopes as a function of time near the reactor itself, this increases the amount of information reactor operators have about the performance of the reactor.



The GR1 unit is ideal for this application due to its:

- small physical size, allowing it to be positioned near a reactor coolant pipe;
- excellent spectroscopic resolution, allowing individual nuclides to be identified;
- low intrinsic efficiency, as dose rates are very high in these environments.