



Radiation Detection Solution for Wastewater Treatment Facilities

Wastewater treatment facilities continue to be environmental hazards with many challenges including radioactive contamination.

RadComm's RAID Crystal-Based Radiation Detection Solution provides superior detection with isotope identification to determine what radiological material is present in the wastewater before it with enters and mixes with other materials in the treatment facility. In addition, solids exiting the facility can be scanned to ensure radiological material is not leaving the facility and entering onto the public roadways and eventually onto landfills where significant contamination may occur.



800-588-5229



inquiries@radcommsystems.com



www.radcommsystems.com

Wastewater Treatment Facilities

Challenges with properly detecting radioactive waste

Nuclear medicine utilized in diagnostic and cancer treatments is rising sharply every year. People no longer stay for extended periods of time in the hospital. Typically, they are released with strict guidelines as to what they are required to do to protect family members and the public. The radionuclides which enter the body can emit exposure levels far above the regulatory limits causing significant radiation exposure to people. The radiological material leaves the body via liquid and solid excretions where these materials can concentrate the radionuclides. As a result, there is a significant rise in the number of detections at facilities which handle wastewater and human waste due to the fact nuclear medicine treatments are sharply increasing.

Typically, nuclear medicine is administered at a medical facility where the initial radiation exposure level exceeds the regulatory limits. Following the procedure, nuclear medicine exits the body and inevitably enters the wastewater stream. As it mixes with other wastewater, the concentration of radiological material can easily exceed regulatory limits. Unknowingly the wastewater treatment facility receives contaminated waste which is not compliant with the wastewater licensing requirements. Unfortunately, most treatment facilities have no safeguards in place to protect personnel and the facility from radioactive materials. This can create a challenging situation since employees have extended periods where they are exposed to radiation levels that can exceed government regulations for non-nuclear workers. The solids removed from the wastewater have the highest concentrations of nuclear medicine and are pumped into a tanker truck which is transported to a landfill site for disposal, resulting in additional exposure to the public, landfill personnel and leachate collection system.

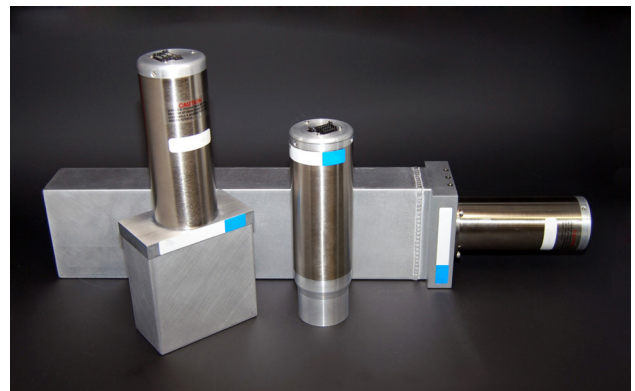
Once isotopes enter the wastewater stream, identification is essential. With the increasing amount of nuclear medicine procedures taking place daily, proper handling procedures must be taken. Wastewater treatment facilities are not nuclear waste processing facilities. There is a solution for detecting and controlling radiological materials before it enters the wastewater treatment facility. When it comes to drinking water, maximum control must be maintained. Shutting down and decontaminating a wastewater treatment facility is not an option.

Innovative Solution

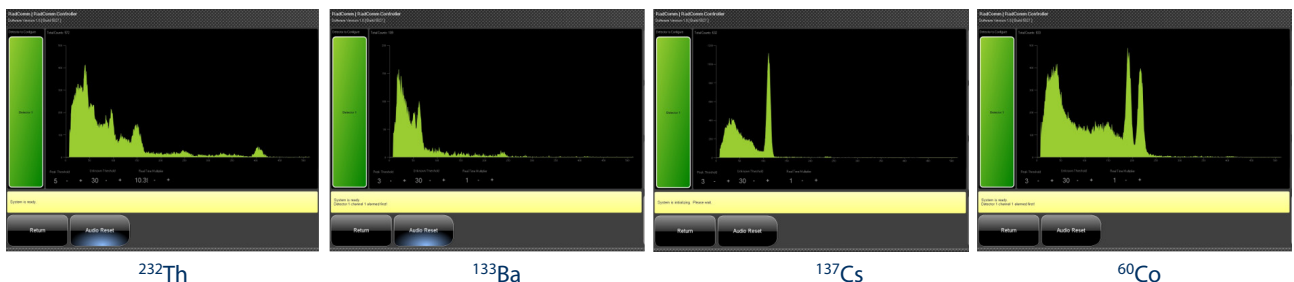
Based on the proven design and performance of RadComm's portal and material handling monitors, the RAID Crystal-Based Radiation Detection Solution utilizes real-time statistical algorithms that are based on gamma energy distribution to ensure accurate and reliable detection. The RAID system features an extensive isotope library which includes industrial and medical isotopes commonly associated with wastewater. The user-friendly design detects and identifies isotopes from incoming/outgoing cargo to maintain maximum control allowing segregated and proper handling.

Proven Design

Wide Range NaI Crystal Sizes



NaI Crystal Spectral Response Examples



Not all waste entering a wastewater treatment plant is radiologically contaminated. However, when ANY contaminated waste is mixed with clean waste, all of the surrounding material becomes contaminated.

System Benefits

Total Solution

The highly configurable RAID system allows for multiple detectors to be strategically located in areas where incoming and outgoing shipments pass before entering or leaving the wastewater treatment facility. The detectors communicate with RadComm's central controller that is located within the facility. The controller features a detailed dashboard that can be monitored by authorized personnel to view real-time information regarding the system scanning process. Additionally, the system is network ready for remote service and monitoring which helps avoid costly site visits and minimize system downtime. Designed to operate passively without operator interaction until an alarm condition is detected, the systems are user friendly and require very little training and understanding of nuclear principles.

Industry Leading Detection Capability

The innovative RAID system utilizes Sodium Iodide Thallium Doped (NaI(Tl)) crystal scintillators that provide a high degree of accuracy with high luminescence (scintillation) efficiency. In addition, advanced algorithms allow for continuous stabilization without the need of radioactive check sources ensuring accurate isotope detection.

Flexibility

The RAID system can be configured for optimal coverage to allow for multiple detectors, different crystal sizes and various crystal types. The alarm scanning process is highly configurable to meet specific applications and regulations. In addition, the system allows for easy future expansion.

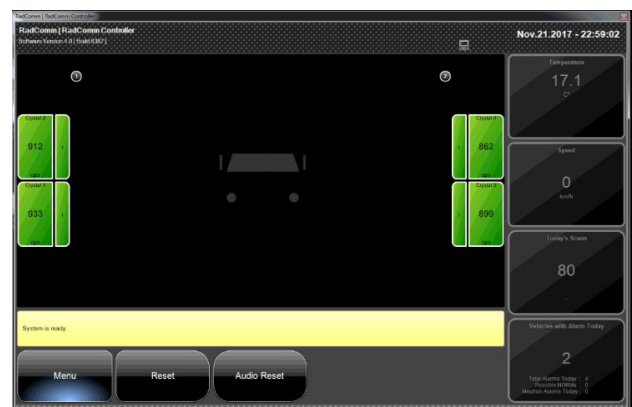
Isotope Identification

NaI Crystals utilize photo-peak energy recognition providing high quality signal output and spectroscopic analyses. Detailed isotopic identification can be performed in real time and on a continuous basis, significantly improving noise cancellation and restoration of ambient background. The system can be configured to scan for specific isotopes based on the regulated exposure rate to initiate an alarm condition.



Reliability

The RAID system is based on the proven design and performance of RadComm's material handling and portal monitors that have been installed in harsh environments such as waste, steel/scrap facilities where durability and reliability are essential. These detectors can be customized to meet the specific requirements of the application without interfering with the normal day-to-day operations of the organization.



RadComm Controller Software

About Us

RadComm Systems is a global designer, manufacturer and distributor of technologically advanced radiation detection systems. Our highly specialized systems detect, measure and identify radioactive sources to prevent radiological incidents and potential exposure to individuals and the environment for a variety of industrial, civilian and government applications.

With over 28 years of proven field experience and more than 7,000 successful installations in over 70 countries, RadComm has established itself as the undisputed technological innovator in the steel and scrap metal industries.

As an ISO 9001:2015 certified organization, RadComm prides itself on quality products that exceed industry standards as well as meet each customers' unique needs and requirements. RadComm's primary focus is on designing innovative, leading-edge radiation detection solutions that are supported by an experienced technical team.



RAID Crystal-Based Radiation Detection Solution

The primary objectives of the RAID Crystal-Based Radiation Portal Monitor is to minimize the environmental and financial impacts associated with radioactive waste entering a wastewater treatment facility. RadComm's solution provides:

- ✓ Superior detection with isotope identification
- ✓ Enhanced Dashboard with Real-time monitoring
- ✓ User-friendly design and operation
- ✓ Reliable operation based on a proven design



DESIGN



INNOVATE



QUALITY



SUPPORT



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WWW.RADCOMMSYSTEMS.COM

Product specifications subject to change without notice.
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