

“NORM” IN THE NATURAL GAS AND OIL INDUSTRY

Low levels of naturally occurring radioactive material (NORM) are all around us. They're in many of the foods we eat, as well as the air, rocks and soil in the environment. Consequently, some of the water and wastes resulting from exploration and production of natural gas and oil may develop low levels of radioactivity through contact with underground formations. The industry works under federal, state, and local regulations to ensure this material is managed and stored in a safe manner, which protects both workers and the community.

BACKGROUND:

Protecting workers, individuals, and the communities who are near natural gas and oil operations is of paramount importance to the industry. Companies are dedicated to implementing internationally-recognized standards and best practices which provide for safe work environments and the public safety. The way the industry handles NORM is no different.

For decades, companies have effectively managed and disposed of these materials from production and processing equipment, as well as waste products, such as production fluid and cuttings, all in compliance with federal and state regulations. Currently, operators identify, store and dispose of any radioactive material - no matter how low the levels - in compliance with state environmental laws and Occupational Safety and Health Administration (OSHA) regulations. Due to varying background levels of NORM, NORM-specific regulations are the responsibility of states, but remediation guidelines for sites undergoing closure may be subject to Environmental Protection Agency (EPA) requirements concerning allowable soil and surface water limits.

Generally, states distinguish between levels of radiation that are non-hazardous and hazardous. While state health standards, combined with OSHA regulations, determine legally permissible exposures, companies strive to minimize all exposures through industry standards, best practices and global collaboration. Associated reporting and transparent activities work together to create an environment where the natural gas and oil industry can effectively monitor, manage, and disclose its work around NORM.

WORKPLACE SAFETY:

As part of API's continuous review of industry standards and industry's work with OSHA and other regulatory bodies to enhance safety and reduce risks with the goal of zero incidents, RP 54 was updated in 2019, improving procedures for workplace safety in drilling and well servicing operations. API Bulletin E2 also provides specific guidance to workers who may come into contact with NORM-impacted materials, including directives to wear protective boots, gloves and coveralls to minimize contact with NORM. API will continue to engage in industry workgroups to consider information from studies as they are produced and we regularly update industry standards through ongoing research, training and information sharing.

The natural gas and oil industry takes many steps to provide education and training opportunities (e.g., [Safelands USA](#), [IADC RigPass](#)) for its workers and contractors, which also includes awareness of NORM and other potential hazards. In addition, the International Oil and Gas Producers (IOGP) provides a simplified set of [Life-Saving Rules](#) to remind workers in the field of the important safety guidelines for everyday tasks such as hazard recognition and communication, stop work authority, isolating energy sources, driving safely and many more.

FAST FACTS:

- » In the U.S., NORM-specific regulation is delegated to individual state authorities, with substantial oversight guidance provided from the [U.S. Environmental Protection Agency](#).
- » Even if only very low levels of radioactivity are present, operators manage those materials in accordance with federal and state environmental laws as well as with [Occupational Safety and Health Administration \(OSHA\) regulations](#).
- » According to [the U.S. Nuclear Regulatory Commission](#) "on average, Americans receive a radiation dose of about 0.62 rem (620 millirem) each year. Half of this dose comes from [natural background radiation](#). NRC's [chart here](#) shows these radiation doses in perspective. The other half (0.31 rem or 310 mrem) comes from [man-made sources of radiation](#), including medical, commercial, and industrial sources. According to the NRC, in general, a yearly dose of 620 millirem from all [radiation sources](#) has not been shown to cause humans any harm."
- » Many states undertake additional proactive research and/or monitoring for NORM. In 2010, the [Pennsylvania Department of Environmental Protection](#) conducted a comprehensive study and found radiation levels to be at or below naturally occurring levels.
- » [The International Association of Oil and Gas Producers \(IOGP\)](#) updated its NORM Guidelines (OGP Report 412) (NORM Guidelines) in March 2016, providing another series of improved management practices for consideration by individual companies.