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Reducing Supply Chain Risk to Enable Better Business

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to enable better business

White Paper: Safeguard Your
Business and Your Employees

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Understanding NORM/TENORM Risks



Naturally Occurring Radioactive Material (NORM) can be found under the surface of the Earth across the globe, causing a problem only over time and after continued exposure.

Add human activities, like manufacturing, mineral extraction, or water processing concentrate, and these radioactive materials are more likely to surface and become dangerous to humans that are working on your oil and gas extraction site. This exposure is known as Technologically Enhanced Naturally Occurring Radioactive Material (TENORM).

While there is no federal standard or regulation currently governing NORM/TENORM, the dangers are palpable. The EPA is currently looking into creating a rule around NORM/TENORM, and it's likely only a matter of time before OSHA gets involved as well.^[1]



As an oil and gas company, it's important to understand the ramifications of particulate radiation as you could be held liable when workers and contract workers on your site are subject to continued exposure.

The Danger of NORM/TENORM

Like asbestos exposure, radiation exposure builds over time and can produce serious side effects.

With low levels of exposure, the effects aren't always immediately obvious. Yet chronic low levels of exposure can lead to cancer, cellular mutations, and even genetic mutations that workers can pass along to their offspring.

For oil and gas companies, awareness is critical. TENORM can be found in produced water, mineral scale, and sludge, as well as in storage tanks, inside pipelines, or in pipeline inspection gadgets.

[1] EPA, "Technically Enhanced Naturally Occurring Radioactive Materials (TENORM)," accessed March 2022.



A Responsibility to Protect

Although everyone must do their part to keep employees safe, as the hiring client or employer contractor you bear the burden. It makes no difference whether your workers are full-time, permanent employees or contractors there for the day, if workers use your equipment in your facility, they may be legally considered your employees, regardless of how they are paid. A 1099 is just a tax distinction, not a loophole releasing responsibility.

When it comes to safeguarding employees, both the hiring client and the contractor are responsible for the health and safety of workers. Consider the following when devising a workplace safety plan for all site workers:

Oil and gas companies (hiring clients):



- 1 | Determine if there's NORM and TENORM exposure and inform all workers.** Require everyone to participate in a standardized training program to educate workers on the hazards and how to protect themselves. Limit the number of workers who are exposed.
- 2 | Regulate areas with potential NORM and TENORM exposure.** Isolate the hazard and reduce exposure by building enclosures or installing barriers. Design work zones farther away from the exposure, as distance negatively impacts radiation.
- 3 | Require the use of personal protective equipment (PPE).** Require everyone on site to have and use proper PPE. Train workers and require contractors to be trained on how and when to wear PPE, as well as why it's important.

Contractors:



- 1 | Advocate for your workers.** Review the list of hiring client responsibilities and encourage appropriate controls to be set up before you enter their sites. Review the OSHA hierarchy of controls^[2] and use the guidelines to protect workers from exposure.
- 2 | Mandate safety training.** Require NORM/TENORM training before workers enter a job site. Work with hiring companies to ensure all workers get site-specific training.
- 3 | Control the amount of exposure.** Ensure exposure time is limited by establishing work rotation schedules.
- 4 | Follow all PPE guidelines.** Ensure you have proper PPE on site and are trained on how and when to wear PPE. PPE will become contaminated so clothing and respirators must be removed and properly decontaminated before leaving the work area. Ask for handwashing stations to thoroughly wash their hands and face after removing protective equipment.

[2] OSHA, "Hierarchy of Controls," accessed March 2022.



Only by working together can hiring clients and contractors ensure worker health and safety. Since regulations may be forthcoming, it's a good idea to get started now by increasing awareness and implementing controls to prevent exposure and dispose of TENORM appropriately.

Contact [Veriforce](#) to learn more about our NORM/TENORM training.

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