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Assessing the risk of NORM scale to marine biota from offshore oil and gas decommissioning

Successful decommissioning of offshore oil and gas infrastructure requires an effective and safe approach to assessing and managing chemical and radiological residues. Scale residues frequently accumulate on the interior surfaces of pipes and other structures, and may persist long after extraction operations have ceased. Scale materials can consist of a range of metal contaminants (including mercury), as well as naturally occurring radioactive materials (NORM). In newer infrastructure, the scale is cleaned routinely, and becomes a waste product. The persistent nature of 'NORM scale' can result in a radiological dose to the organisms living on, or near an intact pipeline. Eventually, pipe corrosion could lead to metal and radionuclide contaminants being accessible to the surrounding benthic environment, where bioaccumulation and subsequent ecotoxicological effects from the chemical and radiological properties of the scale could occur. This presentation describes a multi-phase approach to assessing the ecological impacts of pipeline scale in order to assist operators with their plans for decommissioning offshore infrastructure. Recent results from pipeline scale testing will be discussed.

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