

OES-Environmental Guidance Document Workshop for US Regulators

Question and Answer Discussion Report

February 2022

Risk Retirement:

Where does the term “risk retirement” come from?

- The term “risk retirement” has been used by technology-focused development programs such as geotechnical risk management to delineate circumstances in which key stressor-receptor interactions are sufficiently understood to alleviate the need to carry out detailed investigations for each proposed project. The term has now been used by the marine renewable energy (MRE) community to describe a means of simplifying the consenting processes by focusing on key issues of concern. OES-Environmental defines risk retirement as the ability to retire risks that are deemed low risk or are unlikely to cause harm to marine animals, habitats, or communities and therefore need not be fully investigated for every small-scale MRE project but can instead rely on what is known from already consented projects, related research studies, or findings from analogous industries. More information can be found on the *Tethys* [Risk Retirement](#) page.

What do you consider "small number" of installations?

- For risk retirement, we currently consider small numbers to be 1-4 devices. We acknowledge that as larger installations and arrays are developed, we will likely need to reevaluate or reexamine the ability to retire certain interactions.

Are the thresholds for when a risk is retired included clearly in this work?

- The thresholds for retiring a risk will differ by stressor-receptor interaction and will generally be determined by a preponderance of scientific evidence and agreement within the MRE community. Any real thresholds will have to be enacted by regulation. Examples specific to the United States are the underwater noise thresholds for marine mammals (NOAA) and guidance for fish (BOEM). More information on the status of risk retirement for each stressor is available in the [Stressor-Specific Guidance Documents](#).

Has there been thought about unanticipated risks? How can regulators identify "new" risks and amend any terms and conditions to permits/authorizations?

- One way to address unanticipated risk is through adaptive management. Many MRE projects have developed adaptive management plans in consultation with regulators to identify potential risks that may arise and how they might be dealt with, generally through adapting the monitoring program and analysis. Adaptive management and other related efforts will help allow the industry to deploy devices, leaving room for learning and increased understanding about potential impacts on the environment. For those risks deemed retired, when new information comes to light, risks can be revisited and new decisions about the level of risk can be made.

As assets age their risk increases, is this included in your risk retirement framework?

- We have not yet taken on the aging process directly, but this is a great idea. We are doing some work to look towards decommissioning needs.

How can the evidence bases be searched, specifically to see if a particular report or source has been evaluated?

- The evidence bases are organized by stressor-receptor interaction (so far, we have evidence bases for electromagnetic fields, underwater noise, habitat change, changes in oceanographic systems, and collision risk) and are organized as such so you can look through the documents by specific interaction and see if we have included a specific report or source. All documents in the evidence bases are also included in the [Monitoring Datasets Discoverability Matrix](#), and can be retrieved as Key Documents for each stressor selected. For more specific searches, you can use our *Tethys* [Knowledge Base](#) that allows for searching by keywords, though this is not specific to the only those documents in the evidence bases.

How would you attempt to assess (or pre-assess) impacts of mega installations? It seems that industry technology often moves towards bigger as more efficient.

- Researchers are developing models to attempt to understand larger installations, as little empirical information can be gleaned until large-scale arrays are put in the water. For instance, for changes in oceanographic systems, numerical models are being used to look at arrays with 100s of devices as impacts are not anticipated with small-scale deployments. These models will need to be evaluated and validated with field data as large numbers of devices are deployed to ensure an accurate assessment of risk. Our work on risk retirement currently focuses on small numbers of devices in the water. Understanding of arrays will continue to improve as larger arrays are modeled and deployed.

Is there a process to reassess, or to improve assessments due to cumulative effects?

- We have not yet incorporated cumulative effects as part of risk retirement, but we are working with the OES-Environmental country analysts on several new topics, including cumulative effects, to understand knowledge gaps and to assess these impacts as the industry further develops.

Does the risk retirement guidance include a threshold for when you have to start investigating this again or do you assume that monitoring will stop and nothing will be checked on this risk until there is a catastrophe?

- Monitoring is not expected to be discontinued until the level of uncertainty around a risk is known. We don't have specific thresholds set for reexamining risks deemed retired, but as larger arrays of devices are deployed we will continue to review the science to identify when a risk needs to be reevaluated for larger deployments. For specific projects, any monitoring or mitigation needed for potential risks will be based on regulatory requirements.

Have you brought in lessons learned from the US oil and gas industry and the structures that have been used for that effort?

- We are learning from oil and gas and other analogous industries that operate in the ocean to inform our understanding of environmental effects and are using such information both for risk retirement, and for data transferability (see below question). Fortunately, offshore renewable

energy is not subject to the same catastrophic spills as oil and gas, so it is important to apply such analogues carefully.

How do you determine if data from one site are transferable to another (e.g., can information or risks be transferred to environments with different parameters such as different species or current speeds)?

- We have developed a data transferability process to guide the application of data and information from one MRE project or analogous industry to aid permitting for a future MRE project. This includes a framework for assessing applicability of using data in a different location, a data collection consistency table for gauging comparable data, best management practices to guide transfer and collection consistency, and the monitoring datasets discoverability matrix to find available data. More information can be found on the *Tethys* [Data Transferability page](#).

You mention site-specific data may still be required even when a risk is retired. What constitutes site-specific, could it be a region or is it local to a project?

- "Site specific" could include any area that is likely to be affected, based on factors such as current or tidal conditions, seafloor, or other habitat features. For small numbers of devices, we think these footprints are likely to be reasonably small. With larger arrays, the area of effects will likely be larger. Baseline surveys may be required for at least some stressors/receptors and can help inform this, particularly if sensitive species are in the area and the population of these animals is highly uncertain.

How will new data that is generated be incorporated? Do you see risk retirement as a mechanism to shut down funding into additional research on a topic?

- For OES-Environmental, we conduct a literature review every two years to stay up-to-date on new information that has been published. Based on the literature review, we will update the evidence bases as needed. We also plan to keep adding datasets to the [monitoring datasets discoverability matrix](#) as they are generated anywhere in the world. We do not see that this will shut down lines of inquiry, but rather allow future work to focus on knowledge gaps and specific questions. One of the goals of risk retirement is to shift the burden of routine data collection away from the developers and towards inquiry into the most important questions, which often will be investigated by university or government researchers.

Guidance documents:

Do any of your guidance documents contain Best Management Practices for reducing risks for wildlife related to MRE development?

- Not specifically, but we have another tool (which is undergoing upgrades right now) called [Management Measures](#) that gets at what has been tried and the success of these measures.

If this is just guidance, what will ensure that it is adopted by the developers and regulators?

- We are just beginning our outreach efforts to MRE regulators and advisors to receive feedback on the guidance documents and understand useability. We have already heard from regulators that they would make use of the guidance documents in permitting processes. We have no ability to ensure adoption of these tools but strive to make them as useable and useful as

possible. We also hope that regulators will share the guidance documents with developers to help them navigate permitting processes. In addition to outreach to regulators, we have also been engaging the larger MRE community, including developers, on the guidance documents.

Does navigation, land use, cultural, and historical fit into any of the four regulatory categories?

- Yes – navigation, land use, cultural, and historical all fit into the socioeconomic category. We have developed these categories to be sufficiently broad to embrace international regulatory processes.

For 1(c) in the framework, what if the risks are unacceptable or they cannot be mitigated? What is the next step?

- If mitigation is not yet identified (we have another tool that lists what has been tried – Management Measures tool on *Tethys*), new mitigation methods need to be developed and proven. If there are no new methods to be used, then the project likely needs to be rescoped or abandoned.

Will there be a Canada country-specific document?

- Yes, we are working on developing country-specific documents for all the OES-Environmental countries.

Are the stressor-specific documents a summary of the evidence base?

- Effectively yes. We have summarized the relevant 2020 State of the Science chapter and findings of the evidence bases (as reviewed by experts) in the stressor-specific guidance documents. Each of these has lots of links to connect to the detailed information.

General questions:

What is the scope of OES-Environmental and do you also look at offshore wind or hybrid systems?

- OES-Environmental focuses on the environmental effects of MRE – specifically wave, tidal, ocean current, ocean thermal energy, and salinity gradient technologies. There are other projects that focus on offshore wind, such as [WREN](#) and [SEER](#). At this point, we have not looked at hybrid systems, but there are international efforts to address multi-use platforms, especially in Europe.

Does any of your work review the risk of mooring lines to animals?

- We have reviewed the risk of mooring lines to animals and have a chapter in the 2020 State of the Science on this topic: <https://tethys.pnnl.gov/publications/state-of-the-science-2020-chapter-8-moorings>

Is there a sign-up list to be informed of future webinars, etc.?

- Yes, you can sign up on *Tethys* to stay informed: <https://tethys.pnnl.gov/subscribe-tethys>