Natural Resources Canada
Ressources naturelles Canada

Offshore Renewable Energy Regulations

PROPOSED TECHNICAL REQUIREMENTS

Canada

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1. Introduction

Context

Canada has the longest coastlines in the world and an abundance of offshore renewable energy resources (wind, wave, and tidal). Globally, offshore renewable energy (ORE) technologies are currently in different phases of development. While wave and tidal projects primarily remain in research and demonstration stages, offshore wind projects have reached large-scale global deployment and are now providing clean electricity that is becoming increasingly cost-competitive with other sources of electricity. As they continue to mature, ORE technologies have the growing potential to help Canada achieve its climate change commitments by contributing to the transition to a low-carbon energy system, while creating jobs and building on Canada's existing expertise in marine activities.

To ensure that future ORE projects in Canada follow the highest safety and environmental protection standards, the Government of Canada established a legislative framework for offshore renewable energy projects under Part 5 of the *Canadian Energy Regulator Act* (CER Act). The CER Act came into force in August 2019 and provides the Canada Energy Regulator (CER) with legislative authority to review applications for proposed ORE projects and their associated offshore power lines in Canada's offshore areas, as well as to regulate ORE project activities and related facilities and equipment throughout the project lifecycle. The CER Act also provides the authority to make regulations respecting safety and environmental protection as it pertains to these projects. The Offshore Renewable Energy Regulations (ORER) are required to ensure that industry and other stakeholders have a clear understanding of expectations regarding safety and environmental protection, and to ensure that project proponents adopt best practices and best available technologies throughout the lifecycle of ORE projects.

For more information on offshore renewable energy, the current legislative framework in Canada, the roles and responsibilities of the CER, or the process for obtaining land rights related to ORE projects, please refer to our Phase 1 Discussion Paper: Canada's Approach to Offshore Renewable Energy Regulations.

Offshore Renewable Energy Regulations Initiative

On October 4, 2020, Natural Resources Canada (NRCan) launched the ORER initiative to develop modern safety and environmental protection regulations that will apply to exploration, construction, operation and decommissioning activities related to renewable energy projects and power lines in Canada's offshore areas.

Phase 1 of the initiative sought feedback from interested stakeholders and Indigenous groups on the general approach to developing the regulatory requirements under the CER Act. NRCan published a discussion paper to facilitate obtaining this early feedback. The discussion paper provided stakeholders with an overview of ORE projects and NRCan's general approach to developing the regulations as it moves through the regulatory development process. The paper also included a series of questions to guide stakeholder feedback when providing written comments and was supported by an online engagement session hosted by NRCan on November 26, 2020. The questions sought feedback on NRCan's proposed principles for developing the regulations, the general components that will be included in the regulations and the key requirements of each, and on whether an outcome-based approach is the preferred approach to developing the regulations. The feedback received was supportive overall of an ORER initiative with stakeholders supporting the guiding principles, and proposed key components and requirements, and the use of an outcome-based approach to developing the regulations where possible. For each question, stakeholders also provided useful input in the form of questions or suggestions to be incorporated into the technical requirements for the second phase of engagement. A summary of the feedback received during Phase 1 can be accessed on the ORER website.

The aim of Phase 2 of the initiative is to obtain feedback on the proposed technical requirements that will form the basis of future regulations. In developing the proposed requirements, NRCan looked at a number of comparable international jurisdictions with more mature offshore renewable industries (notably the UK and the US). NRCan also considered the existing regulatory framework for offshore oil and gas activities in Canada, given the similarities between the two industries, and with a view to maintaining consistency in regulatory expectations and industry standards where appropriate. Finally, NRCan integrated, where appropriate, feedback received during Phase 1 of the initiative.

Overview of Technical Requirements

The proposed technical requirements were developed according to the guiding principles presented in the discussion paper published during Phase 1. Where possible, the technical requirements establish high-level outcomes to be achieved for safety, security, reliability and environmental protection, and they outline which elements need to be taken into consideration when designing a project. Prescriptive requirements were adopted primarily to clearly outline the information required when submitting applications for project authorizations and approvals. General duties and specific requirements to be met by operators are accompanied by the obligation to have an established and functional management system to ensure regulatory compliance and continuous improvement.

The proposed technical requirements constitute the remainder of this paper and are divided into the following five parts, with each part covering a key component of the regulatory framework and the supporting requirements:

NRCan's guiding principles are as follows:

1. Identify safety as paramount.
2. Ensure that impacts to the environment are properly assessed and managed.
3. Use a risk-based approach that focuses on higher-risks areas and minimizes regulatory oversight of lower-risk areas with minimal impacts on safety or the environment.
4. Where possible, adopt outcome-based requirements to promote innovative solutions and technological advance-ments that increase levels of safety and environmental protection over time and reduce costs.
5. Minimize administrative burden, where possible, so as to create a streamlined regime that promotes competitiveness.

1. **General Requirements:** this section includes the general duties and responsibilities that operators will have to follow throughout the lifecycle of a project, such as information on the Safety and Environmental Management System prior to undertaking any activities, as well as general reporting requirements.

2. **Site Assessment Work or Activities:** this section contains requirements for operators conducting site assessment work or activities such as surveys, geotechnical sampling or testing, or installation, operation, and decommissioning of measurement equipment. It also outlines the information to be submitted to the Canada Energy Regulator (CER) when applying for an authorization to undertake such early planning and site assessment activities, such as general information about the project, a safety plan, an environmental protection plan, or a contingency plan.

3. **Transportation, Construction, Installation, and Commissioning Work or Activities:** this section contains requirements on the following: the design of a project, including structural integrity, personnel safety, and environmental protection; fabrication, transportation, installation, and commissioning of project components; and the Certificate of Fitness process for an ORE facility.

4. **Operations and Maintenance Work or Activities:** this section covers requirements for any activities taking place between the construction and decommissioning of an offshore renewable energy facility. The requirements include provisions for self-inspection, as well as requirements for continuous monitoring, periodic maintenance, and repairs according to the approved integrity management program.

5. **Decommissioning, Repowering, and/or Life Extension Work or Activities:** this section covers the type of information to be provided when applying to decommission a project or seeking to extend a project's life; safety, environmental protection and contingency plans are also covered, along with reporting requirements.

The proposed technical requirements approach is generally supported by the feedback received during Phase 1.

Discussion Questions

The proposed technical requirements are meant to mirror the intended regulatory framework that proponents will be required to follow to obtain authorizations from the CER for conducting ORE activities. The purpose of Phase 2 is to solicit detailed feedback from stakeholders to ensure the following: that the proposed requirements make sense and are comprehensive; that they achieve the highest levels of safety, security, reliability, and environmental protection; and that they are flexible enough to respond to a rapidly changing ORE sector. The input received at this stage is crucial, as it will inform the drafting of proposed regulations that will be published in Part 1 of *the Canada Gazette* to seek public comments. NRCan welcomes all comments on the proposed technical requirements and has included some guiding questions below to guide stakeholder feedback:

1. Are the proposed technical requirements adequate for ensuring the safety, security and reliability of projects, as well as environmental protection? What gaps would you like to see addressed?

2. Are the proposed technical requirements feasible for project proponents? Do they allow for best industry practices, codes and standards to be adopted, including those reflecting local conditions at the project site?

3. Are there any lessons learned from other jurisdictions that you would like to share that would help to improve the proposed requirements?

4. Can you identify any flaws or gaps in the proposed technical requirements that may hinder the development of future ORE projects? What solutions would you propose to address them?

Next Steps

If you have any general feedback on this initiative or wish to provide specific responses to any of the questions above, please submit your comments by email to offshorerenewables-renouvelablesextracotieres@nrcan-rncan.gc.ca or by going to the ORER webpage. The deadline for submitting comments is February 21, 2022. If you are interested in learning more about the ORER initiative before submitting comments on the Technical Requirements Document, you may request further information from NRCan at offshorerenewables-renouvelablesextracotieres@nrcan-rncan.gc.ca.

NRCan will provide interested parties with the opportunity to participate in a webinar on the proposed technical requirements. The session will provide an overview of the proposal and include a Q&A session to provide the opportunity for participants to seek clarifications. Additional virtual information sessions could be organized upon request to continue discussions or explore specific technical aspects of the proposal.

Please visit the ORER webpage for information and updates on the proposed regulations, including information on public engagement.

PROPOSED TECHNICAL REQUIREMENTS FOR OFFSHORE RENEWABLE ENERGY REGULATIONS

PART 1 – General Requirements

Item #	Topic	Proposed Requirements	Additional Notes
1.1	Definitions	To be determined	
1.2	Management System	**1.** An operator must have developed, established and implemented a Management System for the purpose of safety, security, reliability and environmental protection. The management system must facilitate learning and continual improvement prior to the commencement of work or activities, and must maintain that system for the duration of the authorized work or activities. **2. The management system must:** a. Correspond to the scope, nature, and complexity of the work or activities and to the hazards and risks associated with such work or activities; b. Cover all activities to be authorized by the CER; c. Be explicit, comprehensive, and proactive; and d. Support the development of a healthy safety culture. **3. The management system must include:** a. All relevant policies, processes, procedures, and protocols related to safety, security, reliability, equipment integrity, environmental protection and emergency response, along with the operator's commitment to comply with these policies, processes, procedures, and protocols; b. Processes for the establishment and maintenance of measurable goals and associated performance indicators related to safety, security, reliability and environmental protection, and to the performance of the management system;	The proposed management system requirements are based on existing Canadian regulatory regimes (e.g., *Canadian Energy Regulator Onshore Pipeline Regulations, Canada Oil and Gas Drilling and Production Regulations*) with modifications made to reflect the latest industry best practices.

c. Organizational structure, including roles, responsibilities, and decision-making authorities, as well as processes for making individuals aware of these roles, responsibilities, and authorities;
d. A comprehensive training and competency program to ensure personnel are adequately trained and qualified to conduct their work and operate the facilities, equipment, and systems in a manner that is safe and protects the environment;
e. Hazard identification and risk assessment processes including hazards related to human and organizational factors;
f. Processes for selecting measures to eliminate hazards or mitigate against any residual risk, and for establishing an inventory of said hazards, associated risks, and mitigation measures;
g. Processes for internal and external communication of information related to safety, security, reliability, and environmental protection, including communicating hazard control measures to exposed individuals;
h. Processes for coordinating work between the operator, suppliers and service providers;
i. Processes for the engagement of potentially impacted groups and individuals to ensure continuing education and relationship building;
j. A management system audit and evaluation program to ensure that the management system is functioning and achieving established goals and associated performance indicators, and is updated as required and continually improved, including processes to implement preventive and corrective measures to address any deficiencies identified in the system;
k. Processes for inspecting, monitoring and maintaining the integrity of all facilities, equipment and systems;
l. Processes for internal learning, which include:
    i. The internal reporting of hazards, potential hazards, and incidents;
    ii. Analyzing these reports and conducting investigations as required;
    iii. Identifying causal and contributing factors, including those related to human and organizational factors;
    iv. Taking corrective and preventive actions, including the steps to manage imminent hazards;
    v. Providing feedback to those who make reports; and
    vi. Sharing/communicating pertinent learnings.
m. Processes to analyze hazard and incident trends;
n. Change management processes; and

		o. Processes for the identification, generation, control and retention of records necessary to support operational and regulatory requirements and all other records associated with the management system, and ensuring that they are made accessible to those persons who require access to them. 4. The operator must ensure that the organizational structure put in place is comprised of competent persons in sufficient numbers for the establishment, implementation, maintenance and continued improvement of the management system. **5. The operator must designate one of its employees as an accountable person responsible for the establishment, implementation, maintenance and continued improvement of the management system, and must provide such person with the necessary authority for assigning financial and human resources in order to:** a. Establish, implement and maintain the management system; and b. Ensure that the operator's activities are carried out in a manner that enables it to meet its obligations under these Regulations. **6.** The name and position of the accountable person must be provided to the CER along with the application for authorization, and also every time that person changes. **7.** The operator must ensure that employees, subcontractors, service providers and other individuals comply with the requirements of the management system.	
1.3	General Operator Duties	**1. The operator must:** a. Design all facilities, equipment and systems and conduct all activities in a manner that ensures safety, security, reliability and environmental protection; b. Take all reasonable measures to avoid damage to property; c. Take all reasonable measures to avoid impacts to other uses of the sea; d. Use trained and competent personnel; e. Use best available technologies and industry practices; f. Take all reasonable measures to prevent unauthorized discharge of pollutants, including debris, into the offshore environment; and g. Compile, retain and make available to the CER, on request, information related to the site assessment, design and operation of the project.	

1.4	Compliance with Plans, Certificate Conditions and Other General Duties	**1. The operator must:** a. Conduct all activities in compliance with the safety, environmental protection and emergency management plans; b. Review and update the plans on a regular basis; c. Follow all conditions attached to any Certificate of Fitness issued for the project facilities, equipment and systems; and d. Monitor compliance of employees and subcontractors with the plans and conditions.	
1.5	Support Operations	**1.** The operator shall ensure that all support craft and rescue vessels are designed, constructed, operated and maintained to provide the necessary support functions and operate safely in the foreseeable physical environmental conditions prevailing in the area in which they operate. **2. The operator of a facility on which persons are normally present (longer-term stay) shall ensure that at least one support craft is:** a. Available at a distance that is not greater than that required for a return time of twenty minutes; b. Available in the immediate vicinity of the facility and fully ready to undertake rescue and recovery operations whenever a helicopter is landing or taking off, or personnel are working over the side, or otherwise exposed to the risk of falling in the water; and c. Suitably equipped to supply the necessary emergency services, including rescue and first aid treatment for all personnel on the facility in the event of an emergency. If a self-righting fast rescue craft is used, it must meet the requirements of the classification society and be capable of being launched and retrieved when the craft is fully loaded with equipment and maximum complement available and ready for deployment in the event of an emergency. **3.** The operator shall ensure that, for any vessels undertaking diving, construction, geoscience, or geotechnical work or activities, a rescue boat is available and ready for deployment in the event of an emergency.	NRCan is particularly looking to hear from participants on the current best practices, codes and standards with respect to availability of support craft for activities in the offshore renewable energy context, and concerning aircraft landing facilities and helicopter personnel transfer

		4. If the support craft exceeds the distance or time that they are supposed to remain within, both the facility manager and the person in charge of the support craft shall log this fact and the reason why the distance or time was exceeded. 5. Under the direction of the facility manager, the support craft crew shall keep the craft in close proximity to the facility, maintain open communication channels with the facility, and be prepared to conduct rescue operations during any work or activities or condition presenting an increased level of risk to safety.	
1.6	Safety Zone	1. For the purposes of this section, the CER may establish safety zones around an offshore renewable energy facility at any stage of the project lifecycle to promote the safety of life and property on the facilities, their appurtenances and attending vessels[1], and on the adjacent waters within the safety zones. 2. Safety zones may be extended to include the prevention or control of specific activities and access by vessels or persons, and to include measures to protect the living resources of the sea from harmful agents. 3. The operator must propose safety zones for approval by the CER prior to the issuance of an authorization and provide associated rationales for selected safety zone perimeters. Should safety zones not be required in certain circumstances, the operator must demonstrate to the CER why the absence of a safety zone will not unreasonably increase risks. 4. In making this determination, the CER must consider all relevant safety factors, including existing or reasonably foreseeable congestion of vessels, the presence of unusually harmful or hazardous substances, and any obstructions within 500 metres of the offshore renewable energy facility.	For safety zones, the definition of an offshore renewable energy facility covers the following: wind turbines, offshore substations, meteorological masts (met masts), and wave or tidal stream devices; intra-array and export cabling are generally not covered by a safety zone application; however, such cables may be indirectly covered where they lie within a safety zone around relevant installations, and safety zones may exist around vessels engaged in cable laying/remediation activities. Proponents will need to submit safety zone applications to the CER for review and approval.

[1] "Attending vessel" refers to any vessel that is operated by the owner or operator of an offshore renewable energy facility located in the safety zone that is used for the purpose of carrying supplies, equipment or personnel to or from the facility, or that is engaged in construction, maintenance, alteration or repair of the facility, or that is used for further exploration, production, transfer or storage of natural resources from the seabed beneath the safety zone.

		5. The operator shall take all reasonable measures to notify persons who are in charge of aircraft, vessels or vehicles of the safety zone boundaries, the facilities within the safety zone, and of any related potential hazards. **6.** A prescribed safety zone may extend to a maximum distance of 500 metres around the offshore renewable energy facility, measured from each point on its outer edge or from its construction site, but may not interfere with the use of recognized sea lanes essential to navigation. **7.** A support craft or an aircraft, vessel or vehicle associated with the work or activity at an operations site must not enter the safety zone without the consent of the facility manager or the person in charge of the operations site.	Different applications may be required for different stages of the project lifecycle as safety zones are tailored to the type of activity being proposed.
1.7	Evacuation Systems	**1.** The operator shall ensure that evacuation systems and equipment sizing and capacity on all vessels are suitable for the demographics of the workforce in the operating region.	
1.8	Reporting	**1. The operator shall submit reports to the CER summarizing:** a. Activities performed; b. Status of the project according to the execution plan; c. Deviations from or changes to the execution plan; d. Planned commercial operation date; e. Non-conformances, corrective actions taken; and f. Incidents **2.** The frequency of reporting shall be determined by the CER during the review of the application based on the scope, nature, complexity and duration of the work or activities, and must be stated in the terms and conditions of the authorization.	
1.9	Incident Reporting	**1. An incident is defined as:** a. Any event that causes or could have caused: i. A lost workday or restricted workday injury; ii. Death; iii. Fire or explosion; iv. An imminent threat to the safety of a person, installation or support craft;	

		v. Accidental or unanticipated impact on the environment, damage to archeological or cultural resources; or vi. Accidental or unanticipated pollution; b. Any event that results in a missing person; or c. Any event that causes or could have caused: i. The impairment of any facility, equipment or system critical to the safety or security of persons, an installation or support craft; ii. The impairment of the reliability of any electrical facility, equipment or system; or iii. The impairment of any facility, equipment or system critical to environmental protection. **2.** The operator shall notify the CER of any incident as soon as circumstances permit following its occurrence. The operator shall also, within 14 days after the occurrence of the incident, submit a report that outlines the incident, the response to the incident, and the resolution. **3. An incident report shall include:** a. A description of the incident, including when it occurred and who was involved; b. The impact of the incident on structures, vessels, persons or the environment; c. The results of investigations or the root cause analysis; d. Repairs undertaken to restore structures to original design strength, or to restore functionality of impacted systems and equipment; and e. Corrective actions taken to mitigate the risk of similar incidents happening in the future.	
1.10	Record Keeping and Document Accessibility	**1.** The operator shall keep and make available documentation regarding authorization and approvals, and the safety, environmental protection and contingency plans, to the CER and to anyone at the work or activities operation site. **2. Notwithstanding (1):** The operator must ensure that a copy of all operating information and procedures, maintenance and inspection records, and other procedures and documentation necessary to execute the work or activities to operate and maintain the facility, equipment, and systems or offshore power line in a manner that is safe and protects the environment, is: a. Readily and reliably accessible at each facility, control centre, or operations site and each emergency response operations centre; and	

		b. Usable under all foreseeable circumstances at each location referred to in paragraph (a).	

PART 2 – Site Assessment Work or Activities

Item #	Topic	Proposed Requirements	Additional Notes
2.1	Work or Activities Covered by Part 2	**1.** The requirements proposed in this Part apply to site assessment work or activities such as surveys, geotechnical sampling or testing, installation, operation, and decommissioning of measurement equipment such as meteorological masts (met masts) or buoys located in the offshore area.	
2.2	Contents of Application (for Authorization, and Follow-up Approvals)	**1.** For the purposes of receiving an authorization under s. 298 of the Act to undertake site assessment work or activities related to an ORE Project, an applicant must submit the information outlined below in their application. **2.** The information submitted must demonstrate that the work or activities will be undertaken in a manner that is safe and secure, that protects property and the environment, in conformity with all legislative and regulatory requirements (including the general duties outlined in Part 1), and without unreasonably impacting other uses of the sea. **3.** The level of detail in the information submitted should be proportionate to the scope of the proposed work and activities. **4. This information includes at a minimum:** a. The applicant representative's contact information; b. A general description of the work or activities, including: i. Objectives; ii. The scope of the proposed work or activities to be authorized, including maps/charts of the proposed work or activities area;	The CER will develop and publish guidance materials on the Safety Assessment and on the Environmental and Socio-Economic Assessment (ESA).

		iii. Any resulting surveys or analysis (e.g., shallow hazard, biological, geological, geotechnical and archeological surveys, and any other site assessment information and analysis); c. The selected facilities, equipment and systems to be installed and operated during site assessment work or activities, and their proposed location, capabilities and limitations; d. The supporting work or activities, including anticipated support vessels, aircraft, and associated equipment and systems to be used, and their anticipated movements; e. An execution plan and schedule for undertaking the proposed work or activities; f. The Safety Assessment and the Environmental and Socio-Economic Assessment (ESA), addressing the factors listed in subsection 298(3) of the CER Act with respect to the activities to which this part applies; and g. A description of how the site assessment facilities or equipment to be installed on or moored to the seafloor will be decommissioned.	
2.3	Follow-up Approvals	**1. The following plans must be submitted and approved by the CER prior to the commencement of any authorized work or activities (these are conditions of authorization prescribed by regulation):** a. Safety Plan b. Environmental Protection Plan c. Emergency Management Plan	Given the nature and scope of site assessment activities, these documents may need to be submitted in parallel with the authorization application.
2.4	Safety Plan	1. The applicant/operator shall submit a Safety Plan that addresses all of the proposed transportation, construction, installation and commissioning work or activities. **2. The Safety Plan shall describe the procedures, practices, resources, and the sequence of key safety-related work or activities, and monitoring measures necessary to manage hazards, and to ensure the safety of the work or activities to be undertaken. It shall include:**	Safety Plan requirements were largely based on the ongoing Framework Regulations initiative that is currently developing modern regulations applicable to offshore oil and gas activities.

		a. A summary of, and references to, the company's management system, demonstrating how the system will be applied to the work or activities, and how the applicable safety requirements set out in the Regulations will be achieved; b. A summary of, and references to, the processes used for identifying and analyzing hazards and potential hazards, and the processes used for evaluating measures to prevent, manage and mitigate these hazards; c. A summary of, and references to, all studies undertaken to identify hazards and potential hazards, and studies to evaluate safety risks related to the work or activities, including hazards caused by adjacent or simultaneous activities occurring nearby; d. A list and description of the hazards and potential hazards that were identified in these studies and the results of the risk evaluation, including those identified in the Safety Assessment; e. A description of the measures to anticipate, prevent, manage and mitigate related safety risks, including those identified in the Safety Assessment; f. A summary of the methods for communicating the hazards and potential hazards identified in (d) and measures in (e) to any individual who may be exposed to the risks; g. A description of all facilities, equipment and systems critical to safety, and a summary of the program in place for their inspection, testing and maintenance. h. If the possibility of ice hazards exists, a description of the measures to address the safety of the operations and the protection of facilities, vessels, equipment and systems, including systems for ice detection, surveillance, data collection, reporting, forecasting and, if applicable, ice avoidance or deflection; i. A description of training and competencies required to meet the unique or particular needs of the work or activities for employees and for those working with or on behalf of the company; j. An explanation of how the applicant/operator plans to ensure that the personnel, procedures and diving system to be employed in any diving project meet the requirements of the Act, the regulations, and industry standards and best practices; k. A description of the arrangements for monitoring compliance with the safety plan and for measuring performance in relation to its objectives, including data collection and analysis, audits, and inspections; l. A description of the organizational structure and the command structure for the work or activities that:	Would i) be better captured under the Management System requirements? Any information on how i) is implemented for offshore oil and gas would be appreciated.

		i. clearly explains the relationships between the organizational structure and the command structure; ii. includes structural links to contracted services; and iii. provides the contact information and the position of the person accountable for establishing, implementing and maintaining the safety plan. **3. If the company contracts for the provision of services with respect to the work or activities, the Safety Plan shall include the following:** a. A description of how the contractor procurement and selection process includes and considers safety performance criteria; b. A description of the contractor's roles and responsibilities specific to the work or activities; c. A description of the contracted employee's rights and authorities, including the right to stop work if hazardous conditions are identified; d. A description of the communication process for safety issues arising during the work or activities; and e. A description of the Management of Change process for any required changes related to the work or activities;	
2.5	Environmental Protection Plan	**1.** The applicant/operator shall submit an Environmental Protection Plan that addresses all of the proposed transportation, construction, installation, and commissioning work or activities. **2. The Environmental Protection Plan shall describe the procedures, practices, resources, and sequence of key environmental protection-related work or activities and monitoring measures to be undertaken necessary to manage hazards and to ensure the protection of the environment. It shall include:** a. A summary of, and references to, the company's management system demonstrating how the system will be applied to the work or activities and how the applicable requirements set out in these Regulations with regard to environmental protection will be achieved;	The Environmental Protection Plan requirements were largely based on the ongoing Framework Regulations initiative that is currently developing modern regulations applicable to offshore oil and gas activities, as well as onshore pipeline regulations.

b. A summary of, and references to, the processes used for identifying and analyzing hazards and potential hazards, and evaluating measures to prevent, manage, and mitigate these hazards;
c. A summary of, and references to, all studies undertaken to identify hazards and potential hazards and studies to evaluate environmental risks related to the work or activities, including hazards caused by adjacent or simultaneous activities occurring nearby;
d. A list and description of the hazards and potential hazards that were identified in these studies and the results of the risk evaluation, including those identified in the ESA;
e. A description of the measures to anticipate, prevent, manage and mitigate related environmental risks, including those identified in the ESA;
f. A summary of the methods for communicating the hazards and potential hazards identified in (d) and measures in (e) to any individual who may be exposed to the risks;
g. A description of all the facilities, equipment and systems critical to the protection of the environment to be used, and a summary of the program in place for their inspection, testing, and maintenance;
h. A description of the organizational structure and the command structure for the work or activities that:
    i. clearly explains the relationships between the organizational structure and the command structure;
    ii. includes structural links to contracted services; and
    iii. provides the contact information and the position of the person accountable for establishing, implementing and maintaining the Environmental Protection Plan
i. A description of the procedure to be followed when an archaeological site or a burial ground is discovered during the proposed work or activities; and
j. A description of the measures for monitoring compliance with the plan and for evaluating performance in relation to its objectives, including audits, inspections, data collection and analysis.

3. If the company contracts for the provision of services with respect to the work or activities, the Environmental Protection Plan shall include the following:

a. A description of how the contractor procurement and selection process includes and considers environmental performance criteria;
b. A description of the contractor's roles and responsibilities specific to the work or activities;

Would j) be better captured under the Management System requirements?

Any information on how j) is implemented for offshore oil and gas would be appreciated.

		c. A description of the communication process for environmental issues arising during the work or activities; d. A description of the Management of Change process for any required changes related to the work or activities.	
2.6	Emergency Management Plan	**1.** The applicant/operator must submit an Emergency Management Plan. **2. This plan must include, as applicable:** a. Emergency hazard identification and risk assessment and a resultant description of potential incidents and emergencies; b. A description of the Incident Management System to be used to respond to emergencies; c. The emergency response organizational structure, communication and notification during an emergency; d. Emergency response procedures, including evacuation plans; e. A description of available and required emergency equipment; f. A description of coordination with other agencies and organizations that may be involved in the response; g. Incident reporting requirements; h. Incident classification.	

2.7	Geoscience, Geotechnical and Environmental Operations	**1. An operator conducting geoscience, geotechnical or environmental work or activities shall ensure:** a. All equipment and materials that are used during the work or activities are handled, operated, inspected, tested and maintained to ensure safety and environmental protection, taking into consideration the manufacturer's instructions and any safety standards available; b. All equipment is regularly inspected and any defective components are promptly repaired or replaced with components that comply with the manufacturer's instructions; c. The installation, operation and maintenance are performed by competent personnel.	
2.8	Vessel Classification	**1.** The operator shall ensure that all primary vessels involved in a geoscience or geotechnical operation are classed by a Classification Society.	
2.9	Vessel Classification and Aircraft Landing Facility Deck	**1.** If the geoscience, geotechnical, or environmental program proposes to transfer personnel via aircraft, the aircraft landing facility must comply with the classification requirements outlined by the Classification Society. **2.** The operator must ensure that, before the start of any operations requiring the use of an aircraft, the aircraft service provider has accepted, in writing, all conditions with respect to the use of the equipment for any landing area, the procedures associated with refueling, cargo and passenger handling, take-off and landing, and emergency response, as well as the training of personnel and passengers.	
2.10	Third Party Assessment	**1.** The operator shall ensure that a competent, independent third party has assessed and certified all temporary equipment installed temporarily on a vessel that is conducting a geoscience, geotechnical, or environmental program to ensure that the equipment is fit for the intended purpose.	

PART 3 – Transportation, Construction, Installation, and Commissioning Work or Activities

Item #	Topic	Proposed Requirements	Additional Notes
3.1	Work or Activities Covered by Part 3	**1. The requirements proposed in this Part apply to work or activities related to the transportation, construction, installation and commissioning of offshore renewable energy project facilities, equipment and systems and offshore power lines, including:** a. The design requirements of the project facilities, equipment, and systems with respect to structural integrity, personnel safety, security, reliability, and environmental protection; b. The information to be provided on application for an authorization to transport, construct, install, and commission an ORE facility and, following the issuance of the authorization, for any subsequent approval required prior to the commencement of work or activities (e.g., Design Report, Fabrication and Construction Report); c. Specific requirements relating to fabrication, transportation, installation, and commissioning work or activities; and d. The process for obtaining a Certificate of Fitness for ORE facilities and relevant associated equipment and systems. 2. For greater clarity, this section does not apply to site assessment work or activities. It applies to all parts of the planned project including wind, wave, current, tidal, or other generation devices, substructures and foundations, electrical service platforms, substations, inter-array and export cables, and any other permanently installed auxiliary structures.	Permanently installed here means installed for the duration of the facilities' service life, and not necessarily to remain installed after the decommissioning.
3.2	Contents of the Application (for Authorization,	**1.** For the purposes of receiving an authorization under section 298 the CER Act to undertake transportation, construction, installation, and commissioning work or	Allowing certain approvals to follow the issuance of the authorization enables the adoption, where desired by

	and Follow-up Approvals)	activities related to an ORE project, an applicant must submit the information outlined below in their application. **2.** The information submitted must demonstrate that the work or activities will be undertaken in a manner that is safe and secure, and that protects property and the environment, in conformity with all legislative and regulatory requirements (including the General Duties outlined in Part 1), and without unreasonably impacting other uses of the sea. **3.** The level of detail in the information submitted should be proportionate to the scope of the proposed work or activities. **4. This information includes at a minimum:** a. The applicant representative's contact information; b. A general description of the work or activities, including: i. Objectives; ii. A description of the scope of the proposed work or activities to be authorized, including maps/charts of the proposed work or activities area; c. The selected facilities, equipment, and systems to be installed and operated, their proposed design, location, capabilities, and limitations (including design standards to be used, and data sets to be used to establish operational and extreme loading conditions); d. A description of all proposed offshore power lines, including maps that show: i. The terminal points and provincial interconnection points; ii. The route; iii. Constraints and hazards that restrict the preferred route or location of facilities, equipment and systems; and iv. The width of the right of way proposed and the reasons for the selected width. e. The supporting work or activities, including anticipated support vessels, aircraft, and associated equipment and systems to be used, and their anticipated movements; f. An execution plan and schedule for undertaking the proposed work or activities, including any plans for phased development; g. The Safety Assessment and the ESA addressing factors outlined in section 298(3) of the CER Act conducted with respect to the activities captured under Parts 3 and 4 of these Regulations;	the proponent and deemed appropriate by the CER, of a project design envelope (PDE) approach to the approval of projects. Such an approach consists of having the CER allow the proponent to describe the project at the authorization application phase, using detailed information with a reasonable range of project designs while leaving the final design decisions to a later stage in the approval process, possibly even after an authorization has been issued by the CER. The CER and IAA would then evaluate the most significant impacts that are foreseeable based on the parameters in the PDE. The final design of the project will therefore need to limit its impacts to those identified in the PDE. **Some of the benefits of a PDE approach include:** **1.** Earlier commencement of Environmental and Socio-

		h. Findings of site assessment work or activities conducted for the project (e.g., shallow hazard, biological, geological, geotechnical, archeological surveys and any other site assessment information and analysis); i. A description of the Quality Assurance Program and the standards that it is based on; j. Target levels of safety and environmental protection; k. The required information for the CER to approve the Certifying Authority proposed for use by the applicant, and the general scope and timing of activities related to the Certificate of Fitness; and l. Conceptual decommissioning plan. **5. The following information regarding reliability and impact to the bulk power system:** a. The maximum power transfer capabilities of the proposed ORE Project; b. Reliability and impact under winter and summer conditions, and the criteria for the stated power transfer capability; c. A description of the reliability standards to which the ORE Project will be subject during operation; d. A copy of: i. Each interconnection agreement that relates to the construction of the ORE Project, and ii. Confirmation ensuring compliance with the North American Electric Reliability Corporation (NERC) reliability standards, as applicable. **6.** An operator shall provide a description of any permits that are required for the Offshore Electrical Facilities from other jurisdictions, including the status and schedule of each approval process, and a copy of approvals from the province (or other jurisdiction) once these have been obtained. These could be as part of a condition of an authorization following its issuance.	Economic studies and engagement **2.** Greater use of latest technologies and methods by not locking the design too early in the approval process; and **3.** Eliminates the potential for additional environmental and technical reviews should designs or technologies change throughout the approval process.
3.3	Follow-up Approvals	**1. The following plans/documents must be submitted and approved by the CER prior to the commencement of any authorized work or activities related to transportation, construction, installation, and commissioning (these are conditions of authorizations made prescribed by regulation):** a. A description of the management system described in Part 1 and a demonstration that it is fully operational;	

		b. Safety Plan; c. Environmental Protection Plan; d. Emergency Management Plan; e. A description of the Quality Assurance Program; f. Facilities Design Report; g. Fabrication and Construction Report; h. Facilities Reliability Report; i. A description of the Integrity Management Program required under Part 4; and j. A high-level conceptual Decommissioning and Abandonment Plan (to be updated over time as required).	
3.4	Safety Plan	**1.** The applicant/operator shall submit a Safety Plan that addresses all of the proposed transportation, construction, installation, and commissioning work or activities. **2. The Safety Plan shall describe the procedures, practices, resources and sequence of key safety-related work or activities and monitoring measures necessary to manage hazards and to ensure the safety of the work or activities to be undertaken. It shall include:** a. A summary of, and references to, the company's management system, demonstrating how the system will be applied to the work or activities, and how the applicable requirements set out in these Regulations with regard to safety will be achieved; b. A summary of, and references to, the processes used for identifying and analyzing hazards and potential hazards, and processes used for evaluating measures to prevent, manage, and mitigate these hazards; c. A summary of, and references to, all studies undertaken to identify hazards and potential hazards, and to evaluate safety risks related to the work or activities, including hazards caused by adjacent or simultaneous activities occurring nearby; d. A list and description of the hazards and potential hazards that were identified in these studies and the results of the risk evaluation, including those identified in the Safety Assessment; e. A description of the measures to anticipate, prevent, manage and mitigate related safety risks, including those identified in the Safety Assessment; f. A summary of the methods for communicating the hazards and potential hazards identified in (d) and measures in (e) to any individual who may be exposed to the risks;	Would i) be better captured under the Management System requirements? Any information on how i) is implemented for offshore oil and gas would be appreciated.

g. A description of all facilities, equipment and systems critical to safety and a summary of the program in place for their inspection, testing and maintenance;
h. If the possibility of ice hazards exists, a description of the measures to address the safety of the operations and the protection of facilities, vessels, equipment and systems, including systems for ice detection, surveillance, data collection, reporting, forecasting and, if applicable, ice avoidance or deflection;
i. A description of training and competencies required to meet the unique or particular needs of the work or activities for employees and for those working with or on behalf of the company;
j. An explanation of how the applicant/operator plans to ensure that the personnel, procedures and diving system to be employed in any diving project meet the requirements of the Act, the regulations and industry standards and best practices;
k. A description of the arrangements for monitoring compliance with the Safety Plan and for measuring performance in relation to its objectives, including data collection and analysis, audits and inspections;
l. A description of the organizational structure and the command structure for the work or activities that:
    i. clearly explains the relationships between the organizational structure and the command structure;
    ii. includes structural links to contracted services; and
    iii. provides the contact information and the position of the person accountable for establishing, implementing and maintaining the safety plan.

3. If the company contracts for the provision of services in respect of the work or activities, the Safety Plan shall include the following:

a. A description of how the contractor procurement and selection process includes and considers safety performance criteria;
b. A description of the contractor's roles and responsibilities specific to the work or activities;
c. A description of the contracted employee's rights and authorities, including the right to stop work if hazardous conditions are identified;
d. A description of the communication process for safety issues arising during the work or activities;
e. A description of the Management of Change process for any required changes related to the work or activities.

3.5	Environmental Protection Plan	1. The applicant/operator shall submit an Environmental Protection Plan that addresses all of the proposed transportation, construction, installation, and commissioning work or activities. 2. **The Environmental Protection Plan shall describe the procedures, practices, resources and sequence of key environmental protection-related work or activities and monitoring measures to be undertaken necessary to manage hazards and to ensure the protection of the environment. It shall include:** a. A summary of, and references to, the company's management system, demonstrating how the system will be applied to the work or activities and how the requirements set out in these Regulations, as applicable, with regard to environmental protection will be achieved; b. A summary of, and references to, the processes used for identifying and analyzing hazards and potential hazards and evaluating measures to prevent, manage and mitigate these hazards; c. A summary of, and references to, all studies undertaken to identify hazards and potential hazards, and studies to evaluate environmental risks related to the work or activities, including hazards caused by adjacent or simultaneous activities occurring nearby; d. A list and description of the hazards and potential hazards that were identified in these studies and the results of the risk evaluation, including those identified in the ESA; e. A description of the measures to anticipate, prevent, manage and mitigate related environmental risks, including those identified in the ESA; f. A summary of the methods for communicating the hazards and potential hazards identified in (d) and measures in (e) to any individual who may be exposed to the risks; g. A description of all the facilities, equipment and systems critical to the protection of the environment to be used and a summary of the program in place for their inspection, testing and maintenance; h. A description of the organizational structure and the command structure for the work or activities that: i. clearly explains the relationships between the organizational structure and the command structure; ii. includes structural links to contracted services; and iii. provides the contact information and the position of the person accountable for establishing, implementing and maintaining the Environmental Protection Plan;	Would j) be better captured under the Management System requirements? Any information on how j) is implemented for offshore oil and gas would be appreciated.

		i. A description of the procedure to be followed when an archaeological site or a burial ground is discovered during the proposed work or activities; and j. A description of the measures for monitoring compliance with the plan and for evaluating performance in relation to its objectives, including audits, inspections, data collection and analysis. **3. If the company contracts for the provision of services in respect of the work or activities, the Environmental Protection Plan shall include the following:** a. A description of how the contractor procurement and selection process includes and considers environmental performance criteria; b. A description of the contractor's roles and responsibilities specific to the work or activities; c. A description of the communication process for environmental issues arising during the work or activities; d. A description of the Management of Change process for any required changes related to the work or activities;	
3.6	Emergency Management Plan	**1. The applicant/operator must submit an Emergency Management Plan. This plan must include, as applicable:** a. An emergency risk assessment; b. A description of the incident management system, including incident classification, to be used to respond to emergencies; c. The emergency response organizational structure, communication and notification procedures to be used during an emergency; d. Emergency response procedures, evacuation plans and a description of available emergency equipment; e. Coordination with emergency response agencies, and continuing education plan for ensuring up to date dissemination of information; and f. Incident reporting requirements.	
3.7	Quality Assurance Program	**1.** The operator shall develop a comprehensive Quality Assurance Program for the ORE facility. The operator shall define the minimum requirements for monitoring, documentation, and management of quality during fabrication, transportation, installation, and commissioning. The operator shall ensure that each supplier and	

		subcontractor develops a Quality Assurance Program that complies with the overall quality assurance program, and shall actively monitor the implementation of the Quality Assurance Program throughout the fabrication and construction of the facility. **2.** The Quality Assurance Program shall be based on an industry standard risk assessment considering the design requirements, the critical processes and tests identified in the manufacturing specifications, and the consequences of component failure.	
3.8	Design Requirements	**1. The operator must ensure that all facilities, equipment and systems are designed:** a. To be safe and protect the environment, and to achieve target levels of safety and environmental protection established under (2); b. Using best available technologies and industry practices based on their intended use and location, and associated site-specific physical and environmental conditions. **2.** An applicant must define target levels of safety and environmental protection for the risk to life and the risk of harm to the environment, which target levels are to be achieved for all work or activities within each phase of the life-cycle of the facility or power line, including all related facilities, equipment and systems. **3. The target levels of safety must be based on assessments that are:** a. Quantitative, if it can be demonstrated that input data are available in the quantity and of the quality necessary to demonstrate the reliability of the results; and b. Qualitative, if quantitative assessment methods are inappropriate or if the quantitative data is not reliable. **4.** An operator must ensure that each facility is designed to withstand or avoid all foreseeable site-specific physical and environmental conditions or any foreseeable combination of those conditions without loss of the overall structural integrity or failure of the main safety functions.	

3.9	Facility Design Report	**1.** The Facility Design Report approval is one of the approvals required following the issuance of a Transportation, Construction, Installation and Commissioning authorization in order to commence work or activities. **2. The Facility Design Report includes a comprehensive description of the design of all facilities, systems and equipment as outlined in the approved authorization. The Report must demonstrate that the design conforms to all legislative and regulatory requirements, and any applicable conditions or commitments made. It must include, at a minimum, the following items:** a. Front, side and plan view drawings; b. Complete set of structural drawings. The approved for construction fabrication drawings should be submitted including the following: i. Cathodic protection systems; ii. Jacket design; iii. Pile foundations; iv. Mooring and tethering systems; v. Foundations and anchoring systems; and vi. Associated cable and pipeline designs. c. Summary of physical and environmental data used for design or analysis of the facility. Examples of relevant data include information on: i. Extreme weather; ii. Seafloor conditions; and iii. Waves, wind, current, tides, temperature, snow and ice effects, marine growth, and water depth. d. Summary of engineering design data: i. Loading information (e.g., live, dead, environmental); ii. Structural information (e.g., design life material types, cathodic protection systems, design criteria, fatigue life, jacket design, deck design, production component design, foundation pilings and templates, and mooring or tethering systems, fabrication and construction guidelines); iii. Location of foundation boreholes and foundation piles; and iv. Foundation information (e.g., soil stability, design criteria). e. Complete set of design calculations. f. Project-specific studies, including geotechnical analysis, used in the facility's design or installation. g. Description of the loads imposed on the facility, including:	Should some of this content be included in Guidelines as opposed to listed in the regulations?

		i. Loads imposed by jacket; ii. Decks; iii. Production components; iv. Foundations, foundation pilings and templates, and anchoring systems; and v. Mooring or tethering systems. h. A description of all electrical components of facilities, equipment, and systems (e.g., conductors, cabling, power conversion equipment, temporary and permanent access structures, etc.), including, but not limited to: i. Voltage level; ii. Type, number and size of conductors; iii. Towers or other structures that will provide physical support for any offshore power lines; iv. Specifications. i. A single-line diagram identifying all the electrical components; **3.** The Facility Design Report must include a certification statement confirming that the design of the facilities, equipment and systems has been certified by a Board-approved Certifying Authority to be in accordance with accepted engineering practices and the approved authorization. **4.** The Report must indicate where the certified design and as-built plans and specifications will be on file.	
3.10	Facilities Reliability Report	**1.** The Facilities Reliability Report should outline the reliability-related requirements of the system. **2. The Facilities Reliability Report must provide the impacts to the Bulk Power System:** a. The maximum power transfer capabilities of the proposed ORE Project; b. Reliability and impact under winter and summer conditions, and the criteria for the stated power transfer capability; c. A description of the reliability standards to which the ORE Project will be subject during operation; d. A copy of: i. Each interconnection agreement that relates to the construction of the ORE Project, and	

		ii. Confirmation ensuring compliance with the North American Electric Reliability Corporation (NERC) reliability standards, as applicable.	
3.11	Fabrication and Construction Report	**1.** The Fabrication and Construction Report approval is one of the approvals required following the issuance of an authorization in order to commence transportation, construction, installation, and commissioning work or activities. **2.** The Fabrication and Construction Report must describe how facilities, equipment and systems will be fabricated and installed in accordance with the regulations, the design criteria identified in the Facility Design Report, any conditions of authorization issued, and generally accepted industry standards and best practices. **3. The Fabrication and Construction Report must include, at a minimum:** a. A schedule of fabrication and construction work or activities; b. The industry standards to be used to ensure that the facilities, equipment, and systems have been fabricated according to the design criteria identified in the Facility Design Report; c. Details associated with the deployment work or activities, vessels, equipment, systems, materials and support, and anchoring and mooring patterns; d. Environmental information: i. Water discharge; ii. Waste treatment and disposal; iii. Vessel information; and e. Project easement, including the design of any cables, pipelines or facilities, and information on burial methods and vessels. **4.** The Fabrication and Construction Report must include a certification statement confirming that the Fabrication and Construction of the structure have been certified by a Certifying Authority to be in accordance with good engineering practices, the approved authorization, and legislative and regulatory requirements.	Should some of this content be included in Guidelines as opposed to listed in the regulations?

3.12	Certificate of Fitness Process	**1.** The applicant/operator shall employ a qualified Certifying Authority to perform an independent assessment of the Facility Design Report (e.g., design of the facility) and Fabrication and Construction report, oversee fabrication of facility components, and monitor the transportation, construction, installation, and commissioning work or activities described in the application for authorization. Based on the independent assessment and monitoring, the Certifying Authority may issue a Certificate of Fitness for the project. This certificate is required prior to the commencement of any operational/commercial work or activities. **2.** The Certificate of Fitness shall apply to all facilities described in the Facility Design Report, and in the Fabrication and Construction Report. **3.** The Certificate of Fitness shall address structural integrity, operational safety and environmental protection aspects of such facilities, equipment and systems; **4.** The applicant/operator shall employ an approved Certifying Authority. Approval is at the discretion of the CER and will be determined based on the proposed organization's qualifications, including: a. Financial strength; b. Global presence; c. Experience and technical expertise; d. Tools and methodologies for independent assessments; e. Inspection planning; f. Quality control program; g. CVs of key employees.	This approach to independent third-party verification is a mix of the U.S. Bureau of Ocean Energy Management (BOEM) regulations (585) and Draft Framework Regulations. Can this requirement be implemented with smaller demonstration projects?
3.13	Certifying Authority responsibilities	**1. The Certifying Authority shall:** a. Conduct an independent assessment of design inputs, methodologies and results (e.g., target levels of safety and environmental protection) as outlined in the Facility Design Report; b. Monitor the fabrication and construction of the facility to ensure that it has been built and constructed according to the design requirements, the Fabrication and Construction Report, and the authorization conditions; c. Use good engineering judgment and practices in conducting its scope of work;	

		d. Employ competent personnel to conduct the work; and e. Execute the scope of work approved by the CER.	
3.14	Scope of Work	**1.** A Certifying Authority must submit to the CER for approval, prior to commencement of certification activities, a Scope of Work that takes into consideration the duties and functions listed below, the Facility Design Report, the Fabrication and Construction Report, and all other regulatory requirements relevant to the certification process. **2. The scope of work must include:** a. A description of the activities to be conducted by the Certifying Authority to certify the project facilities, equipment, systems, and the activities to verify the validity of the Certificate of Fitness for the duration of the authorized work or activities; A schedule of the activities referred to in paragraph (a).	The Framework Regulations for Oil and Gas require a design basis prior to the Certifying Authority developing a scope of work. That concept has been replaced with the Facility Design Report and the Fabrication and Construction Report.
3.15	Certifying Authority Conflict of Interest Clauses	**1. A Certifying Authority must not issue a Certificate of Fitness in respect of a facility unless the Certifying Authority has the necessary independence and impartiality to carry out its duties and to meet the following requirements:** a. The Certifying Authority must establish and maintain separation within its organizational structure between the certification functions that it or any other person performs, and any work that it or any other person undertakes on the design, construction, transportation, installation, establishment, or commissioning of the facility; and b. The Certifying Authority must ensure that barriers and processes are in place to prevent potential or perceived conflicts of interest that could impact its ability to independently verify compliance with the regulatory requirements and carry out its duties as a Certifying Authority with impartiality. The Certifying Authority must continue to monitor for and identify all real or potential conflicts of interest throughout the duration of the certification activities and must, without delay, inform the person who applied for the Certificate as well as the Board of any real or perceived conflicts of interest.	

3.16	Certifying Authority Reporting	**1. The Certifying Authority shall submit annual reports to the CER. The reports shall include:** a. Activities performed by the Certifying Authority; b. Methodologies employed for independent design assessment; c. Inspections performed, scope and methodology; d. Personnel involved in the design assessment and inspections; e. Design assessment results; and f. Inspection findings.	
3.17	Certifying Authority Inspection Plan	**1.** The Certifying Authority shall submit an Inspection Plan for periodic inspections during fabrication, transportation, installation, commissioning, and operation of the ORE facility. The Certifying Authority shall base the scope and frequency of inspections on an industry standard risk assessment considering the experience and track record of the organizations and personnel, the critical processes and tests, the processes and quality assurance programs in place, and the consequences of the process being inspected. **2.** The Certifying Authority shall inform the CER of any material changes made/required to this plan over time.	

Part 4 – Operations and Maintenance Work or Activities

Item #	Topic	Proposed Requirements	Additional Notes
4.1	Work or Activities covered by Part 4	1. This section contains requirements for operations and maintenance work or activities, including the operation of renewable energy project and offshore power line facilities, equipment and systems, maintenance, monitoring, inspection and repair work or activities, required documentation, and maintenance of the Certificate of Fitness.	
4.2	Contents of the Application (for Authorization, and Follow-up Approvals)	**1.** For the purposes of receiving an authorization under section 298 of the *Canadian Energy Regulator Act* to undertake work or activities related to the operation and maintenance of ORE project facilities, equipment and systems, applicants must submit the information outlined below in their application. **2.** The information submitted must demonstrate that the work or activities will be undertaken in a manner that is safe and secure, and protects property and the environment, in conformity with all legislative and regulatory requirements (including the general duties outlined in Part 1), and without unreasonably impacting other uses of the sea. **3.** The level of detail in the information submitted should be proportionate to the scope of the proposed work or activities. **4. This information includes, at a minimum:** a. The applicant representative's contact information; b. Results of monitoring programs from previous project work or activities (could be from the site assessment phase as well); c. A general description of the work or activities, including: d. Objectives;	

		e. A description of the scope of the proposed work or activities to be authorized, including maps/charts of the proposed work or activities area; f. An execution plan and schedule for undertaking the proposed work or activities; g. A description of any vessels, vehicles and aircraft used to support work or activities; h. Any required updates to the Safety Assessment and/or ESA addressing factors outlined in subsection 298(3) of the CER Act conducted with respect to the activities captured under this Part and submitted as part of previous authorizations; i. A description of how any commitments made in previous project authorizations have been met; j. Target levels of safety and environmental protection; and k. The general scope and timing of activities related to the Certificate of Fitness.	
4.3	Follow-up Approvals	**1. The following plans must be submitted and approved by the CER prior to the commencement of any authorized work or activities:** a. Safety Plan; b. Environmental Protection Plan; c. Emergency Management Plan; d. Any updates required to the previously submitted Integrity Management Program; and e. Updated Decommissioning and Abandonment Plan based on any new information acquired since the last submission.	

4.4	Safety Plan	1. The applicant/operator shall submit a Safety Plan that addresses all of the proposed operation and maintenance work or activities (these are conditions of authorization prescribed by regulation). 2. **The Safety Plan shall describe the procedures, practices, resources and sequence of key safety-related work or activities and monitoring measures necessary to manage hazards and to ensure the safety of the work or activities to be undertaken. It shall include:** a. A summary of, and references to, the company's management system, demonstrating how the system will be applied to the work or activities, and how the applicable requirements set out in these Regulations with regard to safety will be achieved; b. A summary of, and references to, the processes used for identifying and analyzing hazards and potential hazards, and processes used for evaluating measures to prevent, manage and mitigate these hazards; c. A summary of, and references to, all studies undertaken to identify hazards and potential hazards, and studies to evaluate safety risks related to the work or activities, including hazards caused by adjacent or simultaneous activities occurring nearby; d. A list and description of the hazards and potential hazards that were identified in these studies and the results of the risk evaluation, including those identified in the Safety Assessment; e. A description of the measures to anticipate, prevent, manage and mitigate related safety risks, including those identified in the Safety Assessment; f. A summary of the methods for communicating the hazards and potential hazards identified in (d) and measures in (e) to any individual who may be exposed to the risks; g. A description of all facilities, equipment and systems critical to safety and a summary of the program in place for their inspection, testing and maintenance; h. If the possibility of ice hazards exists, a description of the measures to address the safety of the operations and the protection of facilities, vessels, equipment and systems, including systems for ice detection, surveillance, data collection, reporting, forecasting and, if applicable, ice avoidance or deflection; i. A description of training and competencies required to meet the unique or particular needs of the work or activities for employees and for those working with or on behalf of the company;	Would i) be better captured under the Management System requirements? Any information on how i) is implemented for offshore oil and gas would be appreciated.

j. An explanation of how the applicant/operator plans to ensure that the personnel, procedures and diving system to be employed in any diving project meet the requirements of the Act, the regulations and industry standards and best practices;
k. A description of the arrangements for monitoring compliance with the safety plan and for measuring performance in relation to its objectives, including data collection and analysis, audits and inspections;
l. A description of the organizational structure and the command structure for the work or activities that:
    i. clearly explains the relationships between the organizational structure and the command structure;
    ii. includes structural links to contracted services; and
    iii. provides the contact information and the position of the person accountable for establishing, implementing and maintaining the safety plan.

3. If the company contracts for the provision of services in respect of the work or activities, the Safety Plan shall include the following:

a. A description of how the contractor procurement and selection process includes and considers safety performance criteria;
b. A description of the contractor's roles and responsibilities specific to the work or activities;
c. A description of the contracted employee's rights and authorities including the right to stop work if hazardous conditions are identified;
d. A description of the communication process for safety issues arising during the work or activities; and
e. A description of the Management of Change process for any required changes related to the work or activities.

4.5	Environmental Protection Plan	1. The applicant/operator shall submit an Environmental Protection Plan that addresses all of the proposed operation and maintenance work or activities. **2. The Environmental Protection Plan shall describe the procedures, practices, resources, sequence of key environmental protection-related work or activities, and monitoring measures to be undertaken that are necessary to manage hazards and to ensure the protection of the environment. The Plan shall include:** a. A summary of, and references to, the company's management system, demonstrating how the system will be applied to the work or activities and how the applicable requirements set out in these Regulations with regard to environmental protection will be achieved; b. A summary of, and references to, the processes used for identifying and analyzing hazards and potential hazards, and evaluating measures to prevent, manage and mitigate these hazards; c. A summary and references to of all studies undertaken to identify hazards and potential hazards, and studies to evaluate environmental risks related to the work or activities, including hazards caused by adjacent or simultaneous activities occurring nearby; d. A list and description of the hazards and potential hazards that were identified in these studies and the results of the risk evaluation, including those identified in the ESA; e. A description of the measures to anticipate, prevent, manage and mitigate related environmental risks, including those identified in the ESA; f. A summary of the methods for communicating the hazards and potential hazards identified in (d) and measures in (e) to any individual who may be exposed to the risks; g. A description of all the facilities, equipment and systems critical to the protection of the environment to be used and a summary of the program in place for their inspection, testing and maintenance; h. A description of the organizational structure and the command structure for the work or activities that: i. clearly explains the relationships between the organizational structure and the command structure; ii. includes structural links to contracted services; and iii. provides the contact information and the position of the person accountable for establishing, implementing and maintaining the Environmental Protection Plan;	Would j) be better captured under the Management System requirements? Any information on how j) is implemented for offshore oil and gas would be appreciated.

		i. A description of the procedure to be followed when an archaeological site or a burial ground is discovered during the proposed work or activities; and j. A description of the measures for monitoring compliance with the plan and for evaluating performance in relation to its objectives, including audits, inspections, data collection and analysis. **3. If the company contracts for the provision of services in respect of the work or activities, the Environmental Protection Plan shall include the following:** a. A description of how the contractor procurement and selection process includes and considers environmental performance criteria; b. A description of the contractor's roles and responsibilities specific to the work or activities; c. A description of the communication process for environmental issues arising during the work or activities; d. A description of the Management of Change process for any required changes related to the work or activities.	
4.6	Emergency Management Plan	**1. The applicant/operator must submit an Emergency Management Plan. This Plan must include, as applicable:** a. An emergency risk assessment; b. A description of the incident management system, including incident classification, to be used to respond to emergencies; c. The emergency response organizational structure, communication and notification procedures during an emergency; d. Emergency response procedures, evacuation plans, and a description of available emergency equipment; e. Coordination with emergency response agencies and a continuing education plan for ensuring up-to-date dissemination of information; and f. Incident reporting requirements.	

4.7	Integrity Management Program	**1. The operator shall develop a comprehensive Integrity Management Program for the ORE project and offshore power line facilities, equipment and systems to ensure that they:** a. Are tested, inspected, maintained, and operated to ensure safety and the protection of the environment under the foreseeable maximum load and operating conditions during any work or activities; and b. Continue to perform in accordance with their original design specifications. **2.** The operator shall define the requirements for condition monitoring, periodic inspections and testing, and documentation during operation and maintenance work or activities. **3. The Integrity Management Program shall be based on an industry standard risk assessment considering the design assumptions and requirements, the operation and maintenance plan, and the consequences of component failure. The Integrity Management Program shall include:** a. The operational, environmental and condition measurements for continuous monitoring; b. The minimum scope and frequency for periodic inspections; and c. The scope of post-event inspections and the definition of natural events or accidents that will trigger an inspection. **4.** The operator shall perform monitoring and inspections according to the Integrity Management Program and shall ensure that each supplier and subcontractor complies with the overall Integrity Management Program.	
4.8	Certifying Authority Responsibilities	**1.** Prior to the issuance of an authorization for operations and maintenance work or activities by the CER, the Certifying Authority shall submit an inspection plan for periodic inspections during operation and maintenance work or activities of the ORE facilities, equipment and systems. The Certifying Authority shall base the scope and frequency of inspections on an industry standard risk assessment considering the experience and track record of the organizations and personnel, the critical processes and tests, the processes and quality assurance programs in place, and the consequences of the process being inspected.	

4.9	Certifying Authority Reporting	**1. The Certifying Authority shall submit an annual report to the CER. The report shall include:** a. Activities performed by the Certifying Authority throughout Canada; b. Proof that it has maintained the level of competence demonstrated when approved as a Certifying Authority by the CER; c. Inspections performed, scope and methodology; d. Personnel involved in the activities; and e. Results and findings of validation activities and inspections.	
4.10	Compliance with Plans, Certificate Conditions and Other General Duties	**1. The operator must:** a. Conduct all work or activities in compliance with the safety, environmental protection and emergency response plans; b. Review and update the plans on a regular basis; c. Follow all conditions attached to any Certificate of Fitness issued for the project facilities, equipment and systems; and d. Monitor compliance of employees and subcontractors with the plans and conditions.	

Part 5 – Decommissioning, Repowering, and/or Life Extension Work or Activities

Item #	Topic	Proposed Requirements	Additional Notes
5.1	Work or Activities Covered by Part 5	**1.** Near the end of the design life of the ORE facility, the operator may consider full or partial repowering of the site, life extension of the existing assets, alternate use of the existing structures, decommissioning or abandonment. This section includes requirements for decommissioning, repowering and life extension work or activities. **2. Work or activities covered under this section include:** a. Condition assessment of structures for extended operation or partial repowering; b. Removal, transportation, and disposal of project components being removed; c. Site restoration; d. Applications for any such covered work or activities; and e. Maintenance of the Certificate of Fitness for any of these such covered work or activities.	The maximum timeline for decommissioning could be added as a condition of authorization or in any issued subsea licence as part of the land tenure process under the *Federal Real Property and Federal Immovables Act*
5.2	Contents of the Application (for Authorization, and Follow-up Approvals)	**1.** For the purposes of receiving an authorization under section 298 the CER Act to undertake work or activities related to the decommissioning, repowering and/or life extension of ORE project facilities, equipment and systems, an applicant must submit the information outlined below in their application. **2.** The information submitted must demonstrate that the work or activities will be undertaken in a manner that is safe and secure, and protects property and the environment, in conformity with all legislative and regulatory requirements (including the general duties outlined in Part 1), and without unreasonably impacting other uses of the sea.	

3. The level of detail in the information submitted should be proportionate to the scope of the proposed work or activities.

4. **This information includes at a minimum:**
   a. The applicant representative's contact information;
   b. Results of monitoring programs from previous project work or activities (could be from the site assessment phase as well);
   c. The findings of a condition assessment of all facilities covered by the authorization;
   d. A general description of the decommissioning, repowering and/or life extension work or activities, including:
      i. Objectives;
      ii. A description of the scope of the proposed work or activities to be authorized, including maps/charts of the proposed work or activities area;
   e. An execution plan and schedule for undertaking the proposed work or activities;
   f. A description of any vessels, vehicles and aircraft used during work or activities, or to support them;
   g. The Safety Assessment and the Environmental and Socio-Economic Assessment (ESA) outlining potential impacts of the decommissioning, repowering and/or life extension work or activities;
   h. A description of how any commitments made in previous project authorizations have been met;
   i. Target levels of safety for the work or activities;
   j. The information required for the CER to approve the Certifying Authority proposed to be used by the applicant, and the general scope and timing of activities related to the Certificate of Fitness;
   k. The site restoration methods to be used after the decommissioning and abandonment;
   l. The forecasted costs of decommissioning and abandonment, and the manner in which the operator will finance or pay for those costs; and

   m. A description of all other measures that will be put in place during decommissioning and abandonment to conform with any other federal or provincial requirements, or with the requirements of any international conventions or agreements relating to safety and the conservation or protection of the environment.

		5. An operator shall provide a description of any permits that are required for the Offshore Electrical Facilities from other jurisdictions, including the status and schedule of each approval process, and a copy of approvals from the province (or other jurisdiction) once these have been obtained.	
5.3	Follow-up Approvals	**1. The following plans/documents must be submitted and approved by the CER prior to the commencement of any authorized work or activities related to decommissioning, repowering and/or life extension (these are conditions of authorization prescribed by regulation):** a. Safety Plan b. Environmental Protection Plan c. Emergency Management Plan d. Final Decommissioning and Abandonment Plan	
5.4	Safety Plan	1. The applicant/operator shall submit a Safety Plan that addresses all of the proposed decommissioning, repowering and/or life extension work or activities. **2. The Safety Plan shall describe the procedures, practices, resources and sequence of key safety-related work or activities and monitoring measures that are necessary to manage hazards and to ensure the safety of the work or activities to be undertaken. It shall include:** a. A summary of, and references to, the company's management system, demonstrating how the system will be applied to the work or activities, and how the applicable requirements set out in these Regulations with regard to safety will be achieved; b. A summary of, and references to, the processes used for identifying and analyzing hazards and potential hazards and evaluating measures to prevent, manage and mitigate these hazards; c. A summary of and references to all studies undertaken to identify hazards and potential hazards, and studies to evaluate safety risks related to the work or activities, including hazards caused by adjacent or simultaneous activities occurring nearby; d. A list and description of the hazards and potential hazards that were identified in these studies and the results of the risk evaluation, including those identified in the Safety Assessment;	Would k) be better captured under the Management System requirements? Any information on how k) is implemented for offshore oil and gas would be appreciated.

e. A description of the measures to anticipate, prevent, manage and mitigate related safety risks, including those identified in the Safety Assessment;
f. A summary of the methods for communicating the hazards and potential hazards identified in (d) and measures in (e) to any individual who may be exposed to the risks;
g. A description of all facilities, equipment, and systems critical to safety, and a summary of the program in place for their inspection, testing and maintenance;
h. If the possibility of ice hazards exists, a description of the measures to address the safety of the operations and the protection of facilities, vessels, equipment and systems, including systems for ice detection, surveillance, data collection, reporting, forecasting and, if applicable, ice avoidance or deflection;
i. A description of training and competencies required to meet the unique or particular needs of the work or activities for employees and for those working with or on behalf of the company;
j. An explanation of how the applicant/operator plans to ensure that the personnel, procedures and diving system to be employed in any diving project meet the requirements of the Act, the regulations and industry standards and best practices;
k. A description of the arrangements for monitoring compliance with the safety plan and for measuring performance in relation to its objectives, including data collection and analysis, audits and inspections;
l. A description of the organizational structure and the command structure for the work or activities that:
    i. clearly explains the relationships between the organizational structure and the command structure;
    ii. includes structural links to contracted services; and
    iii. provides the contact information and the position of the person accountable for establishing, implementing and maintaining the safety plan.

3. If the company contracts for the provision of services in respect of the work or activities, the Safety Plan shall include the following:

a. A description of how the contractor procurement and selection process includes and considers safety performance criteria;
b. A description of the contractor's roles and responsibilities specific to the work or activities;

		c. A description of the contracted employee's rights and authorities, including the right to stop work if hazardous conditions are identified; d. A description of the communication process for safety issues arising during the work or activities; and e. A description of the Management of Change process for any required changes related to the work or activities.	
5.5	Environmental Protection Plan	**1.** The applicant/operator shall submit an Environmental Protection Plan that addresses all of the proposed decommissioning, repowering and/or life extension activities work or activities. **2. The Environmental Protection Plan shall describe the procedures, practices, resources, sequence of key environmental protection-related work or activities and monitoring measures to be undertaken that are necessary to manage hazards and to ensure the protection of the environment. The Plan shall include:** a. A summary of, and references to, the company's management system, demonstrating how the system will be applied to the work or activities, and how the applicable requirements set out in these Regulations with regard to environmental protection will be achieved; b. A summary of, and references to, the processes used for identifying and analyzing hazards and potential hazards and evaluating measures to prevent, manage and mitigate these hazards; c. A summary and references to all studies undertaken to identify hazards and potential hazards, and studies to evaluate environmental risks related to the work or activities, including hazards caused by adjacent or simultaneous activities occurring nearby; d. A list and description of the hazards and potential hazards that were identified in these studies and the results of the risk evaluation, including those identified in the ESA; e. A description of the measures to anticipate, prevent, manage and mitigate related environmental risks, including those identified in the ESA; f. A summary of the methods for communicating the hazards and potential hazards identified in d) and measures in e) to any individual who may be exposed to the risks;	Would j) be better captured under the Management System requirements? Any information on how j) is implemented for offshore oil and gas would be appreciated.

g. A description of all the facilities, equipment and systems critical to the protection of the environment to be used and a summary of the program in place for their inspection, testing and maintenance;
h. A description of the organizational structure and the command structure for the work or activities that:
    i. clearly explains the relationships between the organizational structure and the command structure;
    ii. includes structural links to contracted services; and
    iii. provides the contact information and the position of the person accountable for establishing, implementing and maintaining the Environmental Protection Plan;
i. A description of the procedure to be followed when an archaeological site or a burial ground is discovered during the proposed work or activities; and
j. A description of the measures for monitoring compliance with the plan and for evaluating performance in relation to its objectives, including audits, inspections, data collection and analysis.

3. If the company contracts for the provision of services in respect of the work or activities, the Environmental Protection Plan shall include the following:

a. A description of how the contractor procurement and selection process includes and considers environmental performance criteria;
b. A description of the contractor's roles and responsibilities specific to the work or activities;
c. A description of the communication process for environmental issues arising during the work or activities; and
d. A description of the Management of Change process for any required changes related to the work or activities.

5.6	Emergency Management Plan	**1. The applicant/operator must submit an Emergency Management Plan. This Plan must include, as applicable:** a. An emergency risk assessment; b. A description of the incident management system, including incident classification, to be used to respond to emergencies; c. The emergency response organizational structure, communication and notification procedures during an emergency; d. Emergency response procedures, evacuation plans, and a description of available emergency equipment; e. Coordination with emergency response agencies, and continuing education plan for ensuring up-to-date dissemination of information; f. Incident reporting requirements.	
5.7	Repowering and/or Life Extension	**1.** Any operators seeking to carry out repowering or life extension work or activities are required to supplement this application with the application and certification requirements outlined in Part 3. **2.** The CER can provide more specific information about what is not required and what would be duplicative.	
5.8	Compliance with Plans, Certificate Conditions and Other General Duties	**1. The operator must:** a. Conduct all work or activities in compliance with the safety, environmental protection and contingency plans; b. Review and update the plans on a regular basis; c. Follow all conditions attached to any Certificate of Fitness issued for the project facilities, equipment and systems; and d. Monitor compliance of employees and subcontractors with the plans and conditions.	