Appendix M

Emergency Response and Contingency Plan

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Craig Ryan	23-July-2024
Approved By	**Date**

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Approved By	**Date**

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P3	15-Mar-2024	Client Review	Y. Emioladipupo
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1 OBJECTIVE

Argentia Renewables Wind LP (Argentia Renewables) is committed to protecting the safety its personnel, contractors, the public and the environment. Upholding this commitment requires extensive planning and preparation. The purpose of an emergency response plan / emergency action plan is to outline in advance the specific procedures and actions that should be taken in the event of an emergency or crisis. The primary goals of such a plan are to protect lives, minimize injuries, prevent property damage, and ensure the continuity of essential functions during and after an emergency. These goals align with Pattern's SMS 500 Safety and Health Values statement.

This plan applies to all employees of Argentia Renewables and its contractors and employees. When encountering a situation which has not been expressly addressed in this plan, use good judgement to respond safely.

This Emergency Response Plan / Emergency Action Plan (EAP) has been developed based on early-stage engineering and as such many of the necessary design details have not yet been completed that would be needed to underpin detailed emergency response procedures. As design progresses through planned and normal design development including detailed design and construction this plan will be updated accordingly.

2 OUTLINE OF EMERGENCY ACTION PLAN

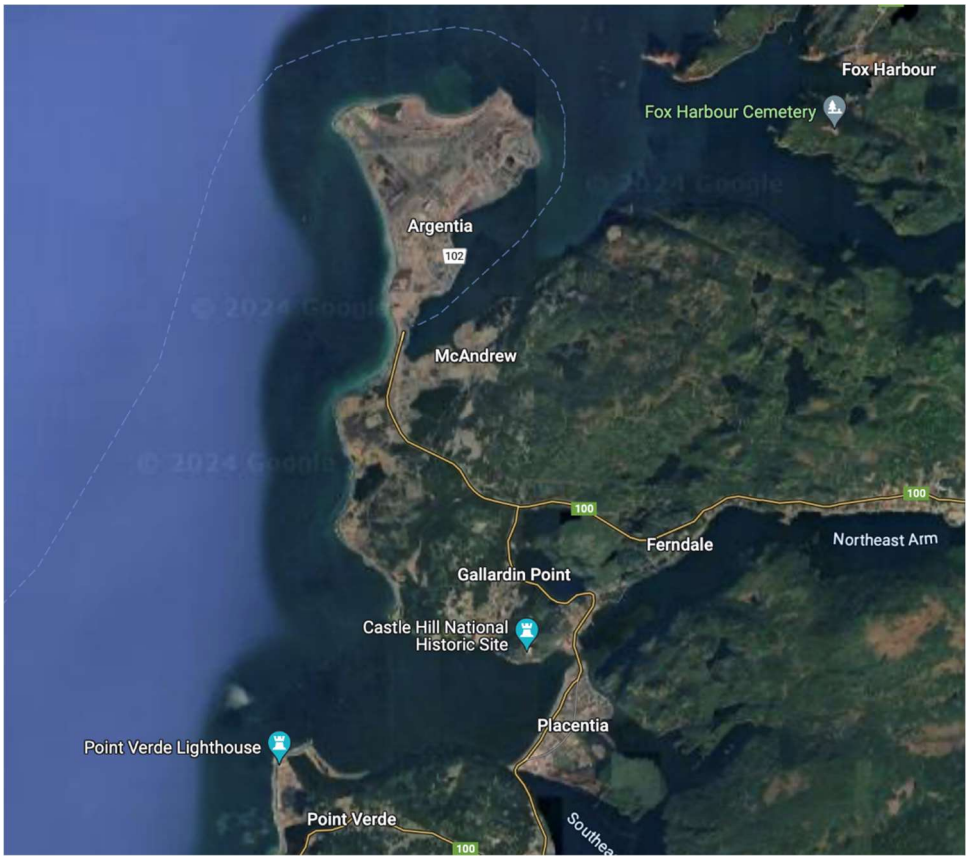
Whenever a danger is identified, it is crucial to carefully assess the potential for the loss of human life, including the employee responding to the hazard, as part of the response actions. The EAP addresses both natural occurring emergency events and events arising from the operation of a complex energy and chemical-generating facility.

This EAP offers guidelines for a well-coordinated emergency management system for the production facility and the wind farm operations, ensuring effective responses to such situations. In instances requiring it, the system will harness the collective efforts of all departments, mutual aid groups, and municipal agencies to mitigate emergency incidents safely, efficiently, and promptly. Mutual Aid Agreements will be established with local and provincial groups as the project development progresses.

3 PROJECT DESCRIPTION

The Argentia Renewables Wind Energy to Green Hydrogen and Ammonia Project is located in Argentia within the municipal boundary of Placentia on the Avalon Peninsula of Newfoundland and Labrador. The green hydrogen and ammonia production, storage, and export facility (Argentia Green Fuels Facility) is located on the Argentia Peninsula on brownfield industrial private land owned by the Port of Argentia. The 300-megawatt onshore wind generation (Argentia Wind Facility) are principally located on adjacent private lands, known as the Argentia Backlands.

The Project is a green hydrogen and ammonia production, storage, and export facility powered the Argentia Wind Facility. The Argentia Green Fuels Facility will produce hydrogen through the electrolysis of water using renewable and low-carbon energy sources. Nitrogen captured by air separation units will also use renewable energy. Ammonia will be produced from hydrogen and nitrogen in the ammonia synthesis unit via the Haber-Bosch process. Wind energy generation and the power supply available from the NHL grid constitutes a unique scenario where the energy used to produce hydrogen and ammonia is truly green. Green fuels synthesis requires a large energy input; however, renewable and low-carbon energy sources make it green hydrogen versus the alternative use of petroleum producing grey hydrogen product.



The Gate House coordinates is located at E-230164.800, N-5241341.275.

4 REFERENCED DOCUMENTS

NFPA 1001	Standard for Fire Fighter Professional Qualifications
NFPA 1072	Hazmat Awareness & Hazmat Operations
NFPA 22	Standard for Water Tanks for Private Fire Protection
DOC-2022-1022	Environmental Assessment - Guidance for Registration of Onshore Wind Energy Generation and Green Hydrogen Production Projects
ERG 2020	Emergency Response Guide – Transport Canada
CAN/CSA-Z731-95	Emergency Planning for Industry
Newfoundland and Labrador Regulation 5/12	Occupational Health and Safety Regulations, 2012
SMS 504	Pattern - Emergency Preparedness and Response Procedure
SMS 504	Emergency Preparedness and Response Procedure Appendix C Pandemic Plan
SMS 504	Pattern - Emergency Preparedness and Response Procedure Appendix H
SMS 521	Pattern - Inclement Weather Policy
SMS 511	Pattern - Working at Heights Procedure Appendix B: Wind Speed Limits
EMS 205	Pattern - Spill Prevention, Countermeasure, and Control Plan
EMS 202	Pattern - Wildlife Incident Reporting System
SMS 500	Pattern – Safety & Health Values Statement
SMS 503	Pattern - Incident Notification, Reporting, and Investigation Procedure
SMS 508	Pattern - Confined Space Program
SMS 514	Pattern - Respiratory Protection Program

SMS 515	Pattern - Bloodborne Pathogens
SMS 516	Pattern - Personal Protective Equipment
SMS 521	Pattern - Inclement Weather

All applicable Federal, Provincial & Local Regulatory Authority requirements and regulations

5 DEFINITIONS AND ABBREVIATIONS

The following terminology is used throughout this EAP.

Accident	An event, which results in an injury, property damage, and/or environmental damage.
All Clear	Announcement originating from the Incident Commander to signify that an emergency response has ended. For situations involving evacuation, it signifies that the area can be occupied.
Assembly Area	A designated area where all Pattern personnel, O&M service providers, contractors, and site visitors will meet during a Field Based Evacuation Emergency or within the O&M Building. i.e. Intersection of nearest road to turbine, near turbine but outside of the rotor throw area or exclusion area (i.e. drop zone) or conference room.
Authority Having Jurisdiction	The organization, office, or individual responsible for approving equipment, materials, a facility, or a procedure.
Barrier	A physical and/or non-physical means planned to prevent, control, or mitigate incidents.
CBRN	Chemical, Biological, Radioactive and Nuclear
Combustible Liquids	Any products or substances whose flash point is above 37.8°C and below 93.3°C.
Consequence	The outcome of an event or situation expressed qualitatively or quantitatively, being a loss, injury, disadvantage, or gain.
Crisis	Any unplanned event during construction that has the potential to significantly impact the company's ability to meet construction and design requirements or to pose a significant health impact, environmental impact, economic impact, or

	legal liability.
Crisis Management	The strategy and actions taken to control actual or potential threat to the Ammonia Plants' long-term ability to do business due to impact on: - Operability - Commercial Integrity - Corporate Image - Liability
Damage Assessment	An appraisal or determination of the effects of a disaster on human, physical, economic, and natural resources.
Dangerous Substances	Substances released in quantities that may harm persons, property, or the environment or is designated a dangerous substance under federal or provincial legislation.
Decontamination	The recovery and elimination of hazardous materials that spread into the environment. The physical and chemical processes to reduce or prevent the spread of contamination by people or equipment at an incident site where there are hazardous materials.
Designate	A person who has been assigned to complete a task or job that is normally the responsibility of another person. The designate assumes responsibility for completion of the job or a task.
Disaster	A disaster is an emergency which poses a more serious threat to the safety of workers, residents, the environment, or property at the site and which cannot be brought under control using the emergency response resources and procedures in place for the site. Whether an emergency becomes a disaster depends on the following: - The type of structure. - The hazards of the operations. - The proximity of neighbouring communities or other facilities. - The capabilities of emergency personnel; and - Mutual aid capabilities of outside agencies.
Disaster Area	A geographic area within which a disaster has occurred.
Emergency	A present or immanent event or situation that results in an immediate threat to the health and safety of Argentia Renewables personnel, contractors, the public, environment, and/or property on Argentia Renewables Operating facilities,

	and requires prompt coordination of actions.
Emergency Information	Information about an emergency, which is communicated broadly to the community and other stakeholders.
Emergency Management	A documented management framework intended to ensure that steps are taken to identify potential losses and their possible impact, maintain viable response and recovery strategies, and to provide for continuity of services in an emergency.
Emergency Management Program	A comprehensive program that is based on a hazard identification and risk assessment process (HIRA) and includes the four core components of mitigation / prevention, preparedness, response, and recovery.
Emergency Meeting Points	"Zones" located at specific areas separate from Emergency Evacuation Areas, to meet Emergency response teams, for the purpose of giving further direction to scene.
Emergency Operations Centre	A centralized management centre for emergency operations. The emergency response team will gather at this location, in an event of an emergency incident, to plan and organize emergency response.
Emergency Preparedness	Activities, programs, and systems for response, recovery, and mitigation in anticipated emergencies.
Emergency Action Plan (EAP)	A plan containing site-specific required actions, detailed contact information and response guidelines for all likely Emergency scenarios. Each site shall have its own specific EAP.
Emergency Coordinator (EC)	The person designated to be in charge during any Emergency at the site. This person may be the Facility Manager, or other designated person with knowledge of the site to manage the event.
Emergency First Responder	Professional responders to emergencies such as fire department personnel, police, and Emergency medical service personnel.
Emergency Medical Services (EMS)	Emergency service dedicated to providing out-of hospital medical care, transport to definitive care, and other medical transport to patients with illnesses and injuries.
Emergency Response	Consists of all workers at site, contractor, and owner

Team (ERT)	representatives, who are trained in Standard First Aid and emergency response and who would be called upon to respond in the case of an emergency at the site.
Emergency Planning	Site specific plan(s) which details actions to be taken by trained personnel during an emergency, to efficiently control and minimize the potential impacts on workers, residents, the environment or property at a facility or site. This type of planning also extends to developing emergency control strategies and instituting training and drills for all facility personnel.
Emergency Response	Coordinated site and private response to an emergency.
Epidemic	A widespread occurrence of a disease in a community at a particular time.
Evacuation	The means of leaving an Emergency in a systematic manner and arriving at a designated safe zone (e.g. Assembly Area or Muster Point).
Exercise	A simulated drill or sequence of events to evaluate plans and procedures. An exercise is a focused practice activity that places participants in a simulated situation requiring them to function in the capacity that would be expected of them in a real event. There are 4 main types of exercises and various sub-types. TYPES OF EXERCISES Drill A drill is a coordinated, supervised exercise activity, normally used to evaluate a specific operation or function (can include notification, telecommunications etc.). Tabletop Exercise A tabletop exercise is a facilitated analysis of an emergency in an informal, stress-free environment (can include Case Study and Paper Exercise). This is a disaster management simulation where key personnel face a hypothetical disaster situation developed by a skilled moderator. Weaknesses are identified by evaluating the results of the exercise and corrected by revising the plan. Functional Exercise A functional exercise is a fully simulated interactive exercise that evaluates capability of an organization(s) to respond to a simulated event (can include computer simulation exercises).

	Full-Scale or Field Exercise A full-scale exercise simulates a real event and is designed to evaluate the operational capability of emergency management systems in a highly stressful environment that simulates actual response conditions. Simulation – A model or set of circumstances used for imitating real or hypothetical conditions in training situations.
Explosion	A large, sudden, unexpected release of pressure that causes or could cause major breakage, fires, or spills.
First Responder	The First Responder is the first person to arrive on the scene of an incident. This person will notify, assess, and take control of the situation until more senior personnel arrive.
Flammable Liquids	Any products or substances whose flash point is below 37.8° C under the closed cup method.
Hazard	Equipment, materials, activities, or conditions that have a significant potential to cause injury or harm to people, negatively impact the environment, or cause loss of property.
Hazard Identification	The process of identifying an unsafe environment that could lead to a Near Miss or Accident
Hazardous Material	A substance (gas, liquid or solid) capable of creating harm to people, property, and the environment, e.g. materials which are flammable, toxic, etc.
Incident	Any event that is classified as a Hazard Identification, Near Miss, or Accident.
Incident Command Center (ICC)	The ICC is the location where the Emergency Coordinator and support staff assemble to respond to an emergency. It is a centralized location for monitoring the facility response and serves as a command center for coordinating all communications, including the allocation and distribution of resources and information. Staffing from pertinent technical and support groups assures accessibility to all required resources for an overall effective emergency response.
Major Environmental Emergency	Can be classified as a spill of a large amount of material on land, or any volume which poses a threat to a river, stream, ditch, pond, environmentally sensitive site, or groundwater.

Minor Environmental Emergency	Can be classified as a spill of a small amount of material on land that does not pose an immediate threat to a river, stream, ditch, pond, environmentally sensitive site, or groundwater.
Mitigation	Activities and programs intended to reduce the severity of an emergency or potential emergency, before, during, or after and emergency.
Mitigation Plan	Based on the risk assessment, each business should implement a strategy and plan to eliminate hazards or mitigate the effects of hazards that cannot be eliminated. A mitigation plan should contain details on activities planned to eliminate or reduce the degree of risk to life, property, and environment from the identified hazards.
Mutual Aid Agreements	An agreement developed between two or more emergency services to render aid to the parties of the agreement. These types of agreements can include the private sector emergency services when appropriate.
Muster Point	A single designated location in a visible area which is a safe distance from an evacuated building for people to gather in the event of an emergency. i.e. 150 feet from O&M Building.
Muster Point Signage	Should conform to Table 1 requirements of ANSI Z53.1. Standard colour of the background being white, panel should be green with white lettering, where available a reflective sign is preferrable. The signage size should be large enough and mounted high enough it is easily seen.
Natural Disaster	Also referred to as natural hazards are extreme, sudden events caused by environmental factors such as storms, floods, droughts, fires, and heatwaves.
Operations and Maintenance (O&M) Service Provider	Third party service providers that are based in Pattern's O&M Facility and provide long-term regular service and maintenance to the assets at the facility.
Operations Control Center (OCC)	Pattern's 24/7 control center which monitors and remotely operates all generating facilities, including individual generating units and substations in the Pattern fleet.
Pandemic	Any outbreak of a disease that affects 50% or greater personnel at a site.

Perimeter	A boundary surrounding the site of an emergency, established at the scene by the On-Site Coordinator for safety reasons, to prevent unauthorized access to the site and, in some cases, to preserve evidence for investigation and follow up.
Personnel Protective Equipment	Specialized clothing or equipment to be worn by workers to reduce exposure to Hazards. PPE is employed after applicable engineering and administrative controls have been exhausted.
Preparedness	Actions taken prior to an emergency or disaster to ensure an effective response. These actions include the formulation of an emergency response plan, a business continuity plan, training, exercises, and employee awareness and education.
Probability	The likelihood of an event occurring.
Public Sector	A particular element or component of government, i.e. police, fire, public works, of a municipal, provincial, or federal government.
Recovery Plan	A risk-based emergency plan that is developed and maintained to recover from an emergency or disaster.
Resources	Personnel, equipment, and information required to respond effectively to an emergency.
Reportable Wildlife Incident	A wildlife injury or fatality that requires reporting to regulators in accordance with site permit conditions and/or relevant laws.
Reporting Station	The Reporting Station is the dispatch, Health Centre, or Emergency Response station that must be contacted in the case of an emergency.
Rescue	To help someone or something out of a dangerous or harmful situation to a designated safe zone (i.e. Assembly Area or Muster Point).
Response Organization	Group or organization with personnel trained in local emergency response, which are prepared and may be called upon to respond as part of the coordinated response to an emergency. This will include emergency response team personnel, municipal emergency responders such as police, fire, and EMS.
Risk	The combination of the likelihood and consequence of

	occurrence of a Hazard.
Risk Assessment	To identify, evaluate, and estimate the levels of Risks involved in a situation and determination of an acceptable level of Risk.
Site Management	The Facility Manager and the Assistant Facility Manager (and/or designee made by the Facility Manager).
Spill	Spill into the natural environment of oil, chemicals, or materials contaminated by them off or out of facilities, vehicles, ships, or containers in quantities and at rates that are abnormal in view of all the circumstances related to the spill.
Staging Area	Area where the resources to respond to the situation gather when they arrive at the site of the accident and where instructions are given, and personnel assigned.
Standard	Common criteria used to measure performance.
Threat	Any event that has the potential to disrupt or destroy critical infrastructure, or any element thereof. Threat includes accidents, natural hazards as well as deliberate attacks.
Vulnerability	The degree of susceptibility and resilience of the community and environment to hazards, the characteristics of a community or system in terms of its capacity to anticipate, cope with, and recover from events.
Wildlife Habitat	Wildlife habitat is defined as an ecological or environmental area that is inhabited by a particular species of animal, plant, or other type of organism. It is the natural environment in which an organism lives, or the physical environment that surrounds a species population.
Wildlife Proximity Zones	A wildlife proximity zone is the cleared area or open space between the forested wildlife habitat (unaffected area) and the active facility boundary (for example, pad berm or facility road). If the wildlife proximity zone is less than 10 meters, a risk assessment is required.

Abbreviations

CCG	Canadian Coast Guard
ECRC	Eastern Canada Response Corporation
EAP	Emergency Action Plan

EC	Emergency Coordinator
ECC	Emergency Coordination Centre
EMS	Emergency Medical Service
ERG	Emergency Response Group
ERV	Emergency Response Vehicle
EOC	Emergency Operations Centre
PPE	Personal Protective Equipment
RCMP	Royal Canadian Mounted Police
SDS	Safety Data Sheet
SAR	Search and Rescue
SCBA	Self-Contained Breathing Apparatus
SEMT	Site Emergency Management Team
TDG	Transportation of Dangerous Goods

6 ORGANIZATION

6.1 STRUCTURE

The EAP is structured to provide personnel with a reference for responsibilities and communications with internal and external resources. The plan relies on an effective communications network, and response personnel sufficiently trained in their duties.

This Emergency Response Plan outlines communications structure and flow of response efforts, roles and responsibilities, potential emergency situations, equipment inventories, required reporting, training, and auditing of emergency response systems.

6.2 EMERGENCY RESPONSE ORGANIZATION

The activation of the Emergency Management Team will be initiated by the Incident Commander, who will consider input from operations in assessing the situation. Upon activation, Emergency Management Team members are required to report to the site Emergency Operations Center and be ready to support Emergency Response Team (ERT) Personnel.

The following figure outlines the on-site emergency response organization structure in the event of an emergency situation at the site. It depicts an order of involvement for each party engaged in the emergency with progression of the situation.

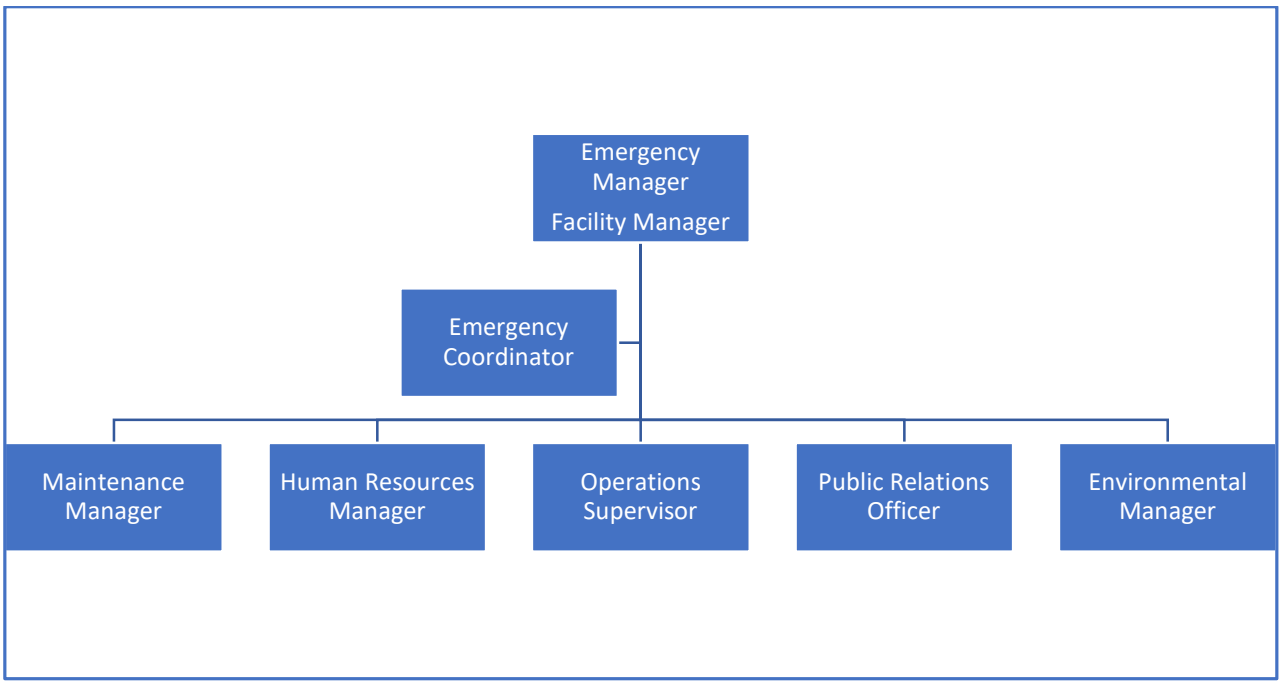


Figure 6.1 Emergency Response Organization

7 RESPONSIBILITIES

Below are the primary emergency roles and responsibilities under this Argentia Renewables Emergency Plan. All employees and subcontractors are responsible for knowing the requirements of and acting in accordance with the EAP.

Table 7.1 ERT Team Responsibilities Matrix

	Facility Manager (FM)	HSE Advisor or designate.	Supervisor	Emergency Response Coordinator
Management				
Implement this procedure where applicable throughout the project.	●	●	●	●
Ensure that workers understand and follow HSE regulations.	●			
Ensure that workers are trained, competent and experienced to work prior to work.				
Before mobilization, assess each type of possible incident to thoroughly identify equipment requirements, on-site response needs, and outside emergency resources.	●	●		●
During site mobilization, site-specific emergency response resources, equipment and procedures must be established to provide an effective response in the case of an emergency evacuation.	●	●		●
Responsible for the overall emergency management at the site level, including coordinating internal and external emergency response activities and corrective actions. Ensure that adequate resources, including coordination with outside agencies and acquisition of emergency response equipment, are available to address and control emergencies. Additionally, ensure that external reporting, including contacting government agencies, potentially affected community groups, adjacent facilities, and making all internal company HSE reporting, is completed.	●			
Responsible for assisting the Facility Manager with coordination of response activities, as necessary, and assisting with follow up activities including accident investigation and corrective actions. Ensure that emergency response procedures are included in the site induction training program and maintaining all records of which pertain to Emergency Planning along with accident and spill reports.		●		●
Train site team on emergency evacuation entering site during induction training and on task specific emergency rescue procedure.		●		●
Investigate accidents, incidents and near miss related to portable power tools and make corrective actions.	●	●	●	●
Planning				
Prepare risk assessments, emergency procedure, call-out process		●		●
Plan to test emergency plan and call-out process	●	●		
Operations				
Ensure that call-out contact list are maintained on monthly basis	●	●		
Direct evacuation on site	●	●	●	
Follow emergency and evacuation rules	●	●	●	●
Inspection				
Ensure that all equipment for evacuation and emergency are inspected on monthly basis	●	●	●	

The ERT is drawn from both hourly and salaried employees includes a minimum of three firefighters and one fire officer on duty during all shifts, with additional call-in availability for incident response. Beyond emergency duties, these team members also assume responsibility for overall facility site security.

Members of the Emergency Response Team are required to undergo specific training for their assigned roles. Failure to meet training requirements for a particular scenario or aspect of the response will result in the exclusion of the team member from that specific task. For instance, if a team member has not yet received training in fire suppression, they will contribute solely to a supportive capacity and not in the fire or hazardous area response.

The initial stage of any emergency is critical. An effective and timely response is essential to prevent an emergency from escalating to a higher level. Therefore, all personnel must be fully aware of their individual duties and responsibilities as they are presented in this plan.

Personnel identified as having key roles in effective emergency response include the Facility Manager, Incident Commander, members of the ERT, Security personnel, and other trained medical response professionals. Specific responsibilities and duties inherent to personnel involved in emergency response are outlined below.

7.1.1 FACILITY MANAGER

The facility manager outlines the roles of everyone involved and takes charge of defining mission-critical functions and identifying where vulnerabilities might lurk. This process involves coordinating all elements of the preparedness plan, ensuring clear communication with all stakeholders, conducting drills to identify weak points, and continuously refining the plan based on evolving needs, new circumstances, and stakeholder feedback. Following an incident the Facility manager will:

- Report to the Incident Command Site (ICS).
- In the absence of the EC assumes the role of Emergency Coordinator
- Receives briefing from the Emergency Management Team personnel on-site.
- Provides process operations managerial and tactical support to the Emergency Coordinator such as product transfer, isolation, and de-pressurization of equipment.
- Provides the Emergency Coordinator with process operational information updates relevant to emergency response activities.
- Provides for the continued safe operation or shutdown of plant process facilities.
- Assists in post emergency re-start-up of the process following Process Safety SOPs

7.1.2 EMERGENCY COORDINATOR

The Emergency Coordinator (EC) is the lead for the ERT, responsible for ensuring the necessary emergency response equipment and adequate level of training for ERT members. The EC directs the ERT at the scene. In the absence of the EC, the facility manager or a senior team member will be designated as EC. The following duties are performed by the EC.

Duties During Emergency

Upon being notified of an emergency, the EC will:

- Immediately report to the Rescue Bay and brief team members
- Report to the scene of the emergency.
- Dons Personal Protective Equipment (PPE) (turnout gear) and conducts a scene evaluation.
- Take charge of the scene.
- Evaluate the details of the emergency as presented by the first person on-scene. Assess the immediate situation and if a Level II or Level III emergency exists and notify security.
- Directs the safe shut down of the affected equipment as appropriate.
- Maintain contact with the Emergency Coordination Centre (ECC) and provide support in coordination of the response.
- Request internal/external resources as required.
- Meets lead of local emergency services upon his/her arrival at the Command Post.
- Advise ERT Captain on aspects of internal/external support as they are received.
- Obtain results of muster station head counts and direct the team accordingly to ensure full evacuation.

Duties Post-Emergency

- Account for all ERT members.
- Announce a 'All Clear' to Security when the emergency has ended.
- Inform external resources that the emergency has ended (if external resources were notified during the emergency)
- Manage a debriefing of the incident response to identify learnings that can be incorporated in the emergency response process to continuously improve the process.
- Participate in an emergency debriefing session.
- Ensure that all ERT equipment is returned to original order and/or replaced to ensure future rapid response.
- Develop a written log of events indicating instructions given, action taken, and outcomes achieved.
- Provide assistance with ongoing investigation.
- Prepare a written report on response activities.

EC other duties;

- Conduct regular training exercise with ERT.
- Endure adequate facilities and equipment is on site to conduct emergency operations.
- Attend Incident Investigation meetings as required.
- Attend Critical Stress debriefing as required.
- Maintain a high-level of awareness of the emergency response plans and systems in place for the Argentia Renewable site.
- Manage the drills and exercises and conduct reviews to identify areas in need of improvement.

7.1.3 EMERGENCY RESPONSE TEAM

The Argentia Renewables Emergency Response Team will be structured from workers at site. With different work schedules, it will be necessary to have enough team members to maintain team numbers of at least 5.

Operations personnel will have to assume duties as an ERT member to handle all site emergencies.

For emergencies such as lost or missing persons, local search and rescue services aboriginal knowledge of surrounding terrain and traditional travel routes will become very valuable. As such, the Argentia Renewables Plant will coordinate with the local Ground Search and Rescue team, e.g. Holyrood or Clarenville, as they may be called upon as a resource in certain Emergency Situations.

The ERT assists with the operation of emergency equipment, provides personnel to perform offensive or defensive emergency response tactics.

Duties During an Emergency

- Reports to Command Post/Staging area and checks in with Incident Commander.
- Dons' turnout gear.
- Enters the affected area and performs emergency response duties as directed by the Operations Chief.
- Responds to HAZMAT incidents and participates in HAZMAT operations level activities as directed by the Incident Commander.

Duties Post-Emergency

- Assists with post emergency operations ensuring that emergency equipment is back in service.
- Participates in formal critique session.

7.1.4 MEDICAL FIRST RESPONDER

Medical First responder refers to an individual who is trained to provide initial medical assistance and care in emergency situations before more advanced medical help arrives.

Duties During an Emergency

- Receive initial emergency call and document vital information used to plan response.
- Enters the affected area and performs emergency response duties as directed by the Operations Chief.
- Conduct a rapid primary survey to identify life-threatening conditions such as airway obstruction, breathing difficulties, or circulation problems.
- Prioritize and address immediate life-threatening issues.
- Call for additional medical assistance if needed, providing clear and concise information about the situation.
- Stabilize fractures or dislocations using basic splinting techniques to prevent further injury.
- Package injured worker and handover to advanced primary care responders.

Duties Post-Emergency

- Assists with post emergency operations ensuring that emergency equipment is back in service.
- Participates in formal critique session.

7.1.5 SECURITY

Security personnel are key in an emergency response in that they will receive an initial notification of an emergency and provide first communications to essential personnel.

Duties During an Emergency

- Receive initial emergency call and document vital information used to plan response.
- All logged information will be given to the ECC.
- Provide appropriate notification of the Rescue team members, EC, ECC and medical response personnel.
- If evacuation is necessary, notify all personnel of emergency evacuation.
- Security will report muster and evacuation status to the EC and await further instruction.
- Provide traffic and crowd control at scene as directed by the EC.
- Assist in controlling access to the emergency area.
- Maintain open radio communication (via radio or telephone intercom system).
- Keep a written record of events throughout incident.
- Assist in the coordination of support and internal services as directed by the ECC.
- Document all actions, decisions, and communications.

Duties Post-Emergency

- Relay notification of 'Stand Down' order when directed by EC.
- Provide a summary of all documentation to the EC and ECC.
- Maintain Security of the scene as directed by the ECC or SH&E.
- Direct all off-site inquiries regarding the emergency to the ECC or designate.
- Participate in a debriefing session for the emergency response.

7.1.6 SAFETY OFFICER

The Safety Officer is responsible for overseeing incident operations and offering guidance to the Emergency Coordinator regarding operational safety, which includes ensuring the well-being of incident personnel. The Safety Officer performs the following tasks:

- Establishes direct communication with the Emergency Coordinator.
- Briefs the Emergency Coordinator on relevant information.
- Participates in strategy planning meetings.
- Identifies potential hazards related to the health and safety of the Emergency Response Team.
- Develops an on-site safety and health plan as required.
- Coordinates joint monitoring activities with municipal agencies and activates Odor Patrol as necessary.
- Provides support staff for industrial hygiene as needed.
- Offers qualified relief support for the Emergency Response Team.
- Establishes and oversees on-site medical first aid sites and emergency triage areas as necessary.
    - Coordinates emergency medical services, including notifying and alerting local ambulance services.

- Arranges for additional security personnel and directs security efforts.
- Coordinates off-site community air monitoring programs through the Environmental Unit Leader.

7.1.7 ENVIRONMENTAL OFFICER

Oversees environmental compliance issues in conjunction with the emergency response co-ordinator.

- Reports to the Incident Command Site for a briefing.
- Consults with the Incident Commander on environmental issues.
- Acts as liaison with Federal, Provincial, and Local agencies concerning environmental issues.
- Oversees post emergency clean-up operations including off-site oil spill emergencies.
- Notifies the Provincial Emergency Response Centre and provides all required information including an estimate of the release volume.
- Assesses and documents anticipated environmental impact of the emergency following the Agency Notification Procedure.
- Evaluates the effectiveness of response activities in mitigating potential environmental concerns.

7.1.8 MOBILE EQUIPMENT OPERATOR

- Directed by Emergency Coordinator to proceed to the fire station or designated location, dons turnout gear, and reports to the command post and the Emergency Coordinator.
- Prepares any anticipated mobile firefighting equipment.
- Responds to the staging area with appropriate response equipment as directed by the Emergency Coordinator.
- Works with ERT in deploying firefighting equipment as directed by the Operations Chief.
- Assists the Emergency Coordinator with area atmospheric monitoring as necessary.
- Responds to HAZMAT incident and participates in HAZMAT operation level activities as directed by the Emergency Coordinator.

8 EMERGENCY RESPONSE PLAN DETAILS

8.1 EMERGENCY COMMUNICATION

Emergency communication is vital during all emergency responses. Personnel must be trained in the frequency / channel to be used and the information that must be relayed to the Workers Supervisor. Upon notification of an emergency or rescue situation, the Workers Supervisor / Workers Foreman shall be ready to provide the following information:

Table 8.1

Role	Communication Method
Argentia Renewables employee will notify Supervision	☒ site radio ☒ cell phone
Emergency Response Team	☒ site radio ☒ cell phone
Argentia Renewables Safety Advisor	☒ site radio ☒ cell phone

8.1.1.1 RADIO COMMUNICATION

During an emergency, the primary communications link between all emergency response personnel is through radio communication. ERT members will be issued radios. Additionally, other individuals involved in emergency response will also carry hand-held radios as part of their regular work requirement.

During an emergency, radio communications should be kept to a minimum. If radio silence is requested on other channels, Security personnel, upon receiving instruction by the Facility Manager or EC, will announce this. This ensures open and free communications among personnel involved in the actual response. For example, if resources have to be requested on any channel other than the designated emergency channel, then this request will be unaffected by other unnecessary conversation.

8.1.1.2 TELEPHONE COMMUNICATION

During an emergency, telephone communications will be used to:

- Notify internal personnel and resources.
- Notify external personnel and resources.
- Announce emergency information via telephone or intercom system.

To supplement radio communications, the site telephone or intercom system may be used to alert site personnel during an emergency response.

Maintaining connections through corporate protocols is essential, and in emergency scenarios, personnel presence may be necessary. In such cases, consistent communication will be established via telephone to secure offsite support, involving external resources like medical professionals or law enforcement authorities.

Some areas of the site will be equipped with telephone or intercom systems. This system may be used to announce information to assist in evacuation or denote an all clear or stand down.

8.1.1.3 ALARM SYSTEMS

Alarm systems will be used to provide instant notification that an emergency situation has occurred. Plumbed emergency shower/eye wash stations have a local audible alarm to indicate activation in the control room.

8.1.1.4 SIRENS

The control button to activate the sirens for Shelter-In-Place are located in both the Security room and the control room. Security / Control Room operator will only activate and deactivate this alarm with direction of the EC, and/or H&S Management representative.

SIREN (>10 SECONDS)
If a persistent on-site siren lasts for more than 10 seconds, all personnel from Argentia Renewables, including staff, contractors, visitors, and workers, must evacuate the buildings promptly and head to the closest marshalling areas. Area wardens are required to fulfill their designated responsibilities and submit an accountability report to the EC upon reaching the designated location.

SIREN (>10 SECONDS)
If the on-site alternating siren continues for more than 10 seconds, all personnel, including Argentia Renewable staff, contractors, visitors, and workers, are required to take shelter in place.

SIREN (<10 SECONDS)
A siren sounding for less than 10 seconds is likely a test and can be disregarded. Any alarm system testing will be announced via radio to all staff. The Argentia Renewables siren will undergo two tests annually.

8.1.2 CALL OUT ACTIONS IMMEDIATE NOTIFICATIONS

During any emergency prompt and immediate action must be taken by all groups to ensure proper emergency response and medical care. Functions should be taking place simultaneously once the emergency call goes out.

Immediate notification to alert resources needed using Emergency Channel 1 is priority.
Emergency notification SHALL be alerted in the following case(s):

- Medical Emergency
- Fire
- Rescue
- Ammonia / Hydrogen event
- Fall Arrest Event
- Any other event that may require Emergency Response Team Assistance.
- A worker MUST be designated to receive Emergency Personal at designated meeting point. In the event an emergency / rescue, the Argentia Renewables Supervisor or designate will be contacted using radio / cell and the Supervisor or designate will direct security to call 911. All remaining members of the crew are on standby and can assist as directed by the Supervisor until the injured worker is transported from site.

The Facility Manager will contact all relevant parties as soon as possible and produce an incident/accident report within 24 hours after the all-clear has been given. For additional information refer to Pattern SMS 503 Incident Notification, Reporting, and Investigation Procedure. The table below provides contact information of parties to be contacted in case of an emergency:

Table 8.1.2 Emergency Contact Details

Emergency Contacts	Name	Phone Numbers
Emergency Services	N/A	911
Facility Manager, Argentia Renewables		
Supervisor, Argentia Renewables		
HSE Coordinator, Argentia Renewables		

8.1.3 COORDINATION WITH OUTSIDE AUTHORITY

Provincial Regulations require that the following types of incidents shall be reported immediately, without delay, by phone to the local Ministry of Labour Office and later in writing:

- Death or critical conditions with a serious risk of death.
- A major structural failure or collapse of a building, tower, crane, hoist, temporary Operations support system, concrete form, false work, or excavation.
- The major release of a harmful material resulting in an injury to a worker who will require immediate medical attention, or which required first aid service for more than one worker.

- Unintended contact with high voltage electrical systems
- The major release of a harmful, i.e. toxic, material resulting in a condition of continuing danger to employees or public.
- Blasting or diving incidents.

8.1.4 COORDINATION WITH LOCAL STAKEHOLDERS

8.1.4.1 MARINE ATLANTIC

Situated on the Argentia peninsula is the Marine Atlantic Ferry terminal, which functions from mid-June to late September, offering three crossings per week. Each crossing typically lasts around 16.5 hours in both directions, with an approximately 8-hour layover for the transfer of passengers and cargo. Terminal operations are scheduled for Mondays, Thursdays, Fridays, and Saturdays, while boat crossings take place on Mondays, Thursdays, and Saturdays. Peak operations may witness an average of up to 1200 passengers.

In the event of a Level III incident, the Emergency Coordinator (EC) will instruct the Argentia Renewables Emergency Coordination Centre (ECC) to establish communication with the Marine Atlantic Emergency Control Centre in North Sydney. The ECC will inform Marine Atlantic about the situation, offering comprehensive details to assist Marine Atlantic in deciding whether to redirect the ferry to its alternative port or evacuate passengers at the ferry terminal. Special attention will be given to scheduling ammonia loading on days when the ferry is not in Argentia (Tues-Wed-Sun). For communication, the Marine Atlantic ECC can be reached at 1-902-794-5307.

8.1.4.2 PORT OF ARGENTIA

The Port of Argentia, situated in the southeastern region of Newfoundland, is a robust industrial seaport. Once a U.S. Naval Base, Argentia is undergoing redevelopment to cater to a varied array of port users and tenants. The Port of Argentia oversees the development of its 3,000 acres of developed, flat land, zoned industrial.

If a Level II or Level III incident occurs, the Emergency Committee (EC) will advise the Argentia Renewables Emergency Coordination Center (ECC) to initiate communication with the Port of Argentia to inform them about the nature of the incident. Following discussions with the Port of Argentia, contact will then be established with all relevant parties across the Argentia Peninsula.

8.1.4.3 TOWN OF PLACENTIA

The Town of Placentia encompasses several amalgamated communities, namely Placentia ("Townside"), Southeast Placentia, Freshwater, Dunville, Ferndale and Jerseyside. Additionally, it includes the Argentia Industrial Park, with a combined population of 3,239 residents in the immediate area. The Placentia Fire

Department is responsible for providing emergency services to all amalgamated communities within the region.

To keep residents informed during emergencies or public notices, the Town employs an automated phone system called "Everbridge" and utilizes social media platforms. In the case of a Level II or Level III incident, the EC will recommend to the Argentia Renewables ECC the initiation of communication with the Town of Argentia and the Placentia Fire Department to notify them about the nature of the ongoing event.

8.2 FACILITY DESCRIPTION:

The Argentia Renewables Project (the Project) includes the construction, operation, and maintenance, and decommissioning of onshore wind energy generation (Argentia Wind Facility), and a green hydrogen and ammonia production, storage and export facility (Argentia Green Fuels Facility), along with associated infrastructure. The Project Area is located in Argentia, NL, formerly the site of a U.S. military base. The Port of Argentia is an active industrial seaport with multiple users currently engaged in extensive activities. The Project Area extends eastward to encompass 22,602 hectares of private land (owned by the Argentia Port Authority) into the “Backlands” of Argentia(Figure 8.2).

The green hydrogen and ammonia production and export facility (Argentia Green Fuels Facility) will be constructed on the Argentia peninsula along with 7 wind turbines (out of a total of 44 for the Project). 3 turbines will be located just south of Highway 102 near Cooper Drive, and the remaining 34 turbines will be distributed throughout the Backlands. New Linear infrastructure associated with the Project will include a network of secondary roads to each turbine, transmission lines connecting wind energy components, and a series of water supply pipelines connecting the Placentia municipal water supply to the Argentia Green Fuels Facility

The Argentia Green Fuels Facility will include a hydrogen electrolyzer, air separators, ammonia synthesizers, hydrogen and ammonia storage, and all other ancillary equipment and maintenance buildings required to operate and maintain the facility (Figure 8.2.1). The wind generation component of the Project will include 44 wind turbines, access roads and associated water crossings, and associated equipment staging areas. The Project will require a water collection and purification system, which will include infrastructure for the delivery of water from the selected source to the water treatment plant located near the Argentia Green Fuels Facility on the Argentia Peninsula. The water treatment plant will feed into the Argentia Green Fuels Facility. A wastewater treatment system will be included for effluent.

In addition, a new transmission line, approximately 35 km long, will be constructed parallel to existing linear facilities and will connect to the NLH Long Harbour terminal station. This connection will ensure stability for electricity production.

Argentia renewables will identify critical areas that require fire protection and an assessment of potential fire size and duration. Argentia Renewables will determine the required fire water demand based on the risk assessment and applicable codes. Controls that will be considered are sprinkler systems, hydrant locations and hose reel stations. Argentia Renewables will construct a fire water storage tank based on these demands and will consider factors such as available space, environmental conditions, and future expansion needs. The tank location will be located strategically to minimise exposure to potential hazards. The fire pump will be located next to the water storage tank.

The piping system will be installed with check valves, pressure relief valves and other necessary components. An emergency power supply will be provided for the pump in case of a power outage.

The control room will monitor the status of the fire water tank and pump(s) through sensors, alarms, and notification of low water levels.

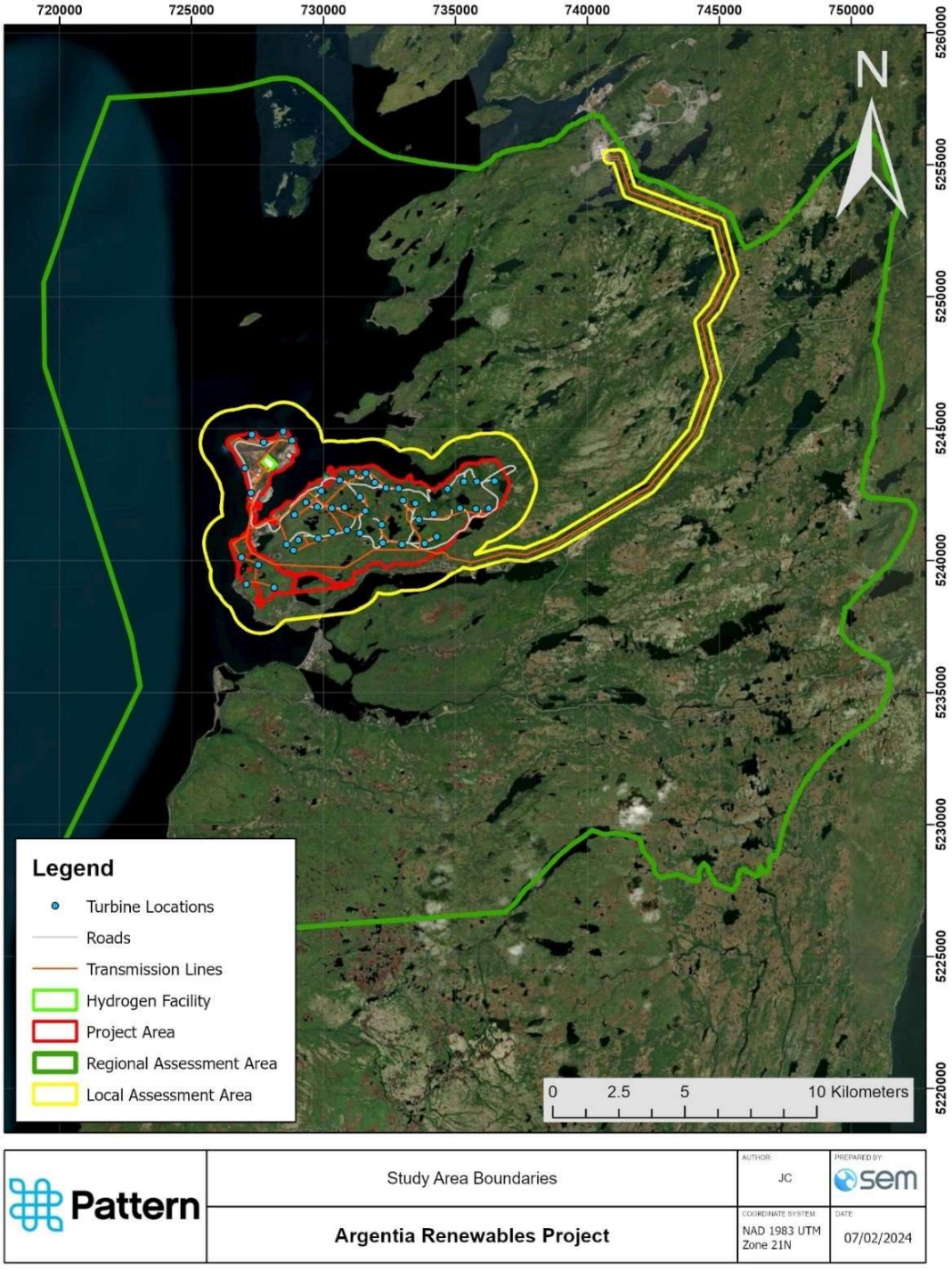


Figure 8.2 Study Area boundaries associated with the Project.

Figure 8.2.1 Proposed Development of Hydrogen / Ammonia Plant Facility for Argentia Renewables.

8.3 EMERGENCY CATEGORIES

The Argentia Renewables Plant emergency response is based upon a three-tiered structure. Incidents are identified and categorized into one of three levels depending upon the nature and severity of the incident. Each Level is managed by an escalating degree of management seniority and assistance from outside the company.

The Emergency Action Plan (EAP) provides the flexibility to tailor the size of the response organization to the specifics of the incident and allows for rapid adjustments as the incident evolves. Most incidents are not severe enough to warrant classification beyond a Level I and are handled by local emergency response personnel in the field.

The initial determination of the classification of the event when notified is made by local management with input from field personnel. However, the event could be subsequently reclassified upon further review. It is essential to define as quickly as possible the level of response required always erring on the high side if any uncertainty exists. A project incident is escalated from Level I to II by the On Scene Command and/or by the Incident Commander in the Emergency Operations Center (EOC). Escalation from Level II to III is decided by the Emergency Coordinator in consultation with the Incident Commander in the EOC.

Always consider the "actual" and/or "perceived" risks / health impacts when responding to public needs. Circumstances or the perspective of a particular stakeholder could cause the incident to be defined at a higher or lower level.

No two incidents are the same. The response and resources need to be evaluated and assessed on every emergency. THE LEVELS ARE A MINIMUM GUIDE.

8.3.1.1 CLASSIFICATION OF EMERGENCIES

8.3.1.2 MINOR EMERGENCY – LEVEL 1

A Level I incident is one in which the potential public and environmental exposure is low to moderate, and the problem can be primarily corrected with on-site resources. Examples of minor emergencies are:

- Small fire.
- Minor oil spill easily contained.
- Minor vehicle accident no injuries.

8.3.1.3 SERIOUS EMERGENCY – LEVEL 2

If the incident is beyond the control of area response it becomes a Level II incident. A Level II incident is one with potential or actual site implications and potentially significant public and environmental exposure. Any external leak of ammonia will be considered a Level III. Government involvement and media interest would be moderately high, but primarily at the regional level.

A Level II response is managed by the Project ERT who may also call on third party emergency services for assistance if the incident warrants.

Examples of serious emergencies:

- Moderate fire.
- Serious accident.
- Structural failure.
- Moderate chemical spill.
- Multiple casualties.

The Emergency Coordinator is responsible for coordinating logistical support to the affected area.

Logistical support includes:

- Overall management of emergency and coordinating broader support.
- Liaison with government representatives.
- Liaison with contractors.

8.3.1.4 CRISIS – LEVEL 3

A Level III incident is one with national or global implications, where potential public or environmental exposure is significant, and media interest is intense. An employee or third-party fatality would automatically become a Level III incident. The facility manager will report Level III incidents to the Regional Director (RD) and the HS&T Team. For additional information on incident reporting requirements refer to SMS 503 Incident Notification, Reporting, and Investigation Procedure. In a Level III incident, operational staff will oversee the situation by deploying personnel to keep a vigilant eye on conditions using ammonia detectors and monitoring wind speed and direction. The ECC will give regular updates to all involved stakeholders.

Examples of crisis situation:

- Ammonia/Hydrogen Release

- Major fire (e.g. bush fire).
- Death.
- Bomb threat / extortion.
- Collision – Road accident with multiple fatalities; crisis management shall be directed to manage impact on operability, liability and handling of government and public communication.

8.4 HAZARD RECOGNITION AND ASSESSMENT

To ensure successful EAP planning, Argentia Renewables must systematically recognize and evaluate all potential hazards impacting plant operations. This involves assessing the risks associated with each hazard to identify those most likely to lead to emergencies. It is crucial to clearly identify contributing factors, potential emergency scenarios, and conduct a comprehensive risk assessment for each identified hazard.

In addition to identifying high-priority hazards, this proactive approach to emergency management can result in a more disaster-resilient environment. Success in meeting this challenge can be found by answering the following questions:

- What hazards exist within or surrounding each Argentia Renewables site?
- How frequently do they occur?
- How severe can their impact be on the employees, public, environment, finances, and reputation?
- Which hazards pose the overall greatest threat to the organization?

In order to properly address the above questions a series of planned and structure risk assessment will be undertaken with increasing level of design scrutiny designed to match level of engineering complete at the time of assessment.

After AtkinsRealis completed the Feasibility Study, a process safety risk assessment was carried out using a Structured What-If Technique (SWIFT) Workshop. This workshop aimed to pinpoint potential emergency scenarios crucial for crafting the Emergency Action Plan (EAP). It brought together diverse subject matter experts and representatives from the Argentia Renewables Project to analyze and define significant operational hazards and potential event triggers.

The Risk Assessment Team oversaw this risk workshop to drive prevention measures, standards, and protocols that the Design, Operations and HSE teams will put in place before Operations commence. Items identified will be maintained in a project risk register and managed throughout the life of the project and operation. The assessment was completed with <15% Engineering completion for the project and as the project progresses more detailed PHA's will be conducted to identify event mitigations prior to start up.

Event scenarios identified during the SWIFT workshop that involved a release of ammonia were modelled using an atmospheric dispersion modelling software program for denser-than-air releases (SLAB); scenarios involving hydrogen release and potential subsequent fire or explosion were modelled using chemical process safety fundamental predictive point source and explosion modelling. Results can be found in two separate reports and provide an indication of the extent of ammonia vapor cloud dispersion and hydrogen fire impact following an accidental release. It should also be noted that Argentia Renewables plans to install double wall ammonia tanks with tank berms, as well as auto-isolating valves for any pipeline leaks which will substantially reduce the risk of any major spill or leakage event.

The project will follow established good engineering practices throughout its development, with a focus on identifying and addressing risks and hazards at each stage of design, construction, and operation. Early decisions in engineering have a substantial impact on both process and operational risks. Recognizing and mitigating process risks is primarily achieved through the application of the PHA process (Process Hazards Analysis). This approach includes various techniques like What-If, HAZID (Hazard Identification), and

HAZOP (Hazard and Operability Analysis). HAZOP, in particular, provides a systematic and structured method for identifying potential hazards during both operation and maintenance.

Engineering documents, specifically Piping and Instrument Diagrams (P&IDs), are routinely released by the engineering contractor and undergo thorough reviews involving representatives from diverse parties and disciplines. The aim is to detect potential issues at an early stage, enabling swift corrections and reducing their impact on the project's cost and schedule. The Hazard and Operability (HAZOP) analysis is performed once the design stabilizes, usually towards the conclusion of the Front-End Engineering Design (FEED) phase.

Any changes occurring after the HAZOP analysis are formally documented and subjected to review and approval processes to ensure they do not contradict HAZOP recommendations or introduce new risks. The project team is dedicated to incorporating safety measures into the overall facility design, anticipating situations that may pose hazards to personnel, the environment, or the facility itself.

Recognizing the dynamic nature of project development, this emergency response plan is subject to periodic reviews and updates as the design progresses and additional information becomes available. This proactive approach aims to enhance the effectiveness of the emergency response plan by addressing emerging concerns and maintaining alignment with evolving project conditions.

8.5 HSE TRAINING

Argentia Renewables will train Employees and Emergency Responders for each facility and shift, following legislative requirements, and industry best practices. Any modifications to the procedure or any of the appendices also require re-training. Thereafter, annual training is required. Updates to Argentia Renewables Emergency Preparedness and Response Procedure will be communicated via email to all applicable personnel and training acknowledgements records will be requested by and retained within the company Learning Management Software.

8.5.1.1 EMPLOYEE TRAINING

All employees and visitors will receive Specific Emergency awareness training during their orientation training, which consists of but not limited to:

- Emergency contacts and muster points
- Crisis Management procedure / Emergency Evacuation Plan including emergency routes and assembly areas to be used.
- Ammonia Exposure Control Plan
- Respiratory Protection & Fit Testing (as required)
- Accident reporting procedures.
- Location of first-aid kits and identification of first-aid providers.
- Chemical spill on-site reporting procedures.
- In the case of specific rescue procedure (i.e. confined space, working at height, Shelter-in-Place…), training of workers on the procedure is done prior to performing the task.
- Hydrogen properties and behaviour
- Safety requirements for working with or around Ammonia/Hydrogen.
- Procedures for handling ammonia/hydrogen leaks and spills, and the appropriate actions to be taken in case of fire.

- Operational employees will receive annual fire extinguisher and spill response training and instruction in fire prevention and emergency evacuation procedures for the facility.
- Alarms and other emergency communication systems to be used both at the work area and from the operations department.

An annual review of the above topics will be conducted with all employees at the beginning of each year.

8.5.1.2 ERT TRAINING

A trained emergency response team will be available 24 hours per day to respond to site emergencies such as medical, fire and emergency releases. Members of ERT will be at a minimum of 3 firefighters and one fire officer (Facility Manager) per shift. Off duty members can be called in at the discretion of the Facility Manager. For additional information on ERT training refer to Argentia Renewables Hazardous Materials Training Plan.

All members of the ERT will be trained in the following areas;

- Standard First Aid
- High Angle / Confined Space Rescue
- Fire Training
- Mock-up Drills
- Spill Response Training
- Ammonia / Hydrogen emergencies
- Wind Tower emergencies
- All members will be trained to the National Fire Protection Association (NFPA) 1072 standard "Hazmat Awareness & Hazmat Operations".

All members will be required to participate in an eight-hour ERT training session each month in order to maintain efficiency. Training sessions will include theory and practical evolutions.

Other HSE trainings will be given based on specific work requirements.

8.6 CHEMICAL HAZARDS

8.6.1 AMMONIA PROPERTIES / HAZARDS

Ammonia is synthesized in a processing unit known as a "Haber Bosch" unit. Hydrogen, generated in an electrolysis unit will combine with nitrogen extracted from the air using the air separation unit (ASU). The hydrogen and nitrogen are raised to high temperature and high pressure in the presence of an iron catalyst to form ammonia. The ammonia produced will be liquified by refrigeration to its saturation point of -32C for storage at atmospheric pressure. Before transport, ammonia will be stored in double walled, insulated, low pressure tanks.

Several characteristics of ammonia include:

- Extremely reactive with strong oxidizers such as chlorine, bromine, iodine, calcium, gold, mercury, silver, and hypochlorite bleach. The mixture would be explosive in nature.

- Very irritating to the eyes, nose and other parts of the respiratory tract which makes it easy to detect at low concentrations in the air.
- Although ammonia itself has a low fire rating, the presence of oil or other combustibles increases its fire rating.
- Ammonia gas is lighter than air, so it tends to collect in higher areas like ceilings.
- Ammonia is corrosive and can cause chemical burns all over the body. It also corrodes most alloys, rubbers, and plastics.
- Ammonia in its pure form is referred to as anhydrous ("without water") ammonia. Ammonia is hygroscopic, which means it has a high affinity for water.
- In gaseous form it is lighter than air. However, due to its hygroscopic properties, released an- hydrous ammonia will rapidly absorb moisture from air and form a dense and visible white cloud that may have a higher density than air.
- Ammonia dissolves easily in water to form a caustic solution of ammonium hydroxide (NH_4OH).
- Ammonia has alkaline properties and is corrosive. Ammonia will corrode galvanized metals, cast iron, copper, brass or copper alloys. Hence, careful material selection is required.
- Ammonia is flammable, but hard to ignite. Outdoors, ammonia vapours will generally not constitute a fire hazard. Indoors, in confined areas, the risk of ignition will be higher, especially if oil and other combustible materials are present. Pressure vessels used for storage of ammonia may explode when exposed to high heat input.
    - Anhydrous ammonia is a hydroscopic compound, which means that it seeks water from the nearest source, including the human body. This places the eyes, lungs, and skin at greatest risk because of their high moisture content. Caustic burns result when the anhydrous ammonia dissolves into body tissue.
    - An additional concern is the low boiling point of anhydrous ammonia. The chemical freezes on skin contact at room temperature. It will cause burns similar to, but more severe than, those caused by dry ice.
    - Most deaths from anhydrous ammonia are caused by severe damage to the throat and lungs from a direct blast to the face. When large amounts are inhaled, the throat swells shut, and victims suffocate. Exposure to vapours or liquid also can cause blindness.

For more information on the characteristics and chemical properties of anhydrous ammonia, refer to its Safety Data Sheet (SDS).

8.6.1.1 EXPOSURE LIMITS AND HEALTH EFFECTS

Ammonia is a toxic substance. Acceptable human exposure limits to ammonia are defined by American Conference of Governmental Industrial Hygienists ("ACGIH®") "Threshold Limit Values (TLVs)" Manual and is typically a function of concentrations and exposure time.

Exposure to high levels of ammonia in air may be irritating to your skin, eyes, throat, and lungs and cause coughing and burns. Lung damage and death may occur after exposure to very high concentrations of ammonia. Some people with asthma and/or heart disorders may be more sensitive to breathing ammonia than others. Children and the elderly may also have a heightened sensitivity.

Most people will smell a noxious odor or feel irritation that indicates exposure to ammonia, but exposure for a long time may affect their ability to sense the chemical. Ammonia becomes apparent by odour at

5ppm with the odor detection level ranges from 5 to 53 ppm. Ammonia has been described to have a pungent urine smelling odour and has a detection range in humans of between 5 and 53 ppm.

For the purposes of vapor cloud dispersion modelling to identify potential human health impacts, Acute Exposure Guidelines (AEGL) were used as a reference to study the affect and concentration of the vapor cloud during a release scenario. AEGL's as defined by the United States Environmental Protection Agency are shown below in Table 8.6.1.1 at timed exposures ranging from 10 minutes to 8 hours. The three different AEGL limits represent the various levels of effect on human health. AEGL 1 is just above the odor threshold for most humans and could cause mild discomfort or irritation in the upper respiratory tract, eyes, and oral cavities. The AEGL-1 level is 30ppm across all supplied exposure times up to 8 hours, as effects are not expected to worsen over time at this exposure limit. Exposures at the AEGL-2 level cause irreversible damage or long-term effects to human health mainly in the eyes and respiratory tract. AEGL-3 exposure results in life threatening health effects or death. Most deaths from ammonia exposure occur because of pulmonary edema or airway obstruction.

The regulatory Occupational Exposure Limits are listed below, Newfoundland and Labrador have adopted the ACGIG TLV for occupational exposure limits

NIOSH REL:

- TWA (10 – Hour): 25 ppm (18 mg/m3)
- STEL (15 minute): 35 ppm (27 mg/m3)

DOE TEEL:

- TEEL-0: 15 mg/m3
- TEEL-1: 20.9 mg/m3
- TEEL-2: 111 mg/m3
- TEEL-3: 766 mg/m

OSHA PEL:

- TWA (8-hour): 50 ppm (35 mg/m3)

AIHA ERPG:

- ERPG-1: 25 ppm
- ERPG-2: 150 ppm
- ERPG-3: 750 ppm

ACGIH TLV:

- TWA (8-hour): 25 ppm
- STEL (15-minute): 35 ppm
- NIOSH IDLH: 300 ppm

Table 8.6.1.1 Acute Exposure Guideline Levels

	10 min	30 min	60 min	4 hr	8 hr
AEGL 1 (discomfort, non-disabling) – ppm	30 ppm	30 ppm	30 ppm	30 ppm	30 ppm
AEGL 2 (irreversible or other serious, long-lasting effects or impaired ability to escape) – ppm	220 ppm	220 ppm	160 ppm	110 ppm	110 ppm

AEGL 3 (life-threatening effects or death) – ppm	2,700 ppm	1600 ppm	1100 ppm	550 ppm	390 ppm

8.6.1.2 FLAMMABILITY

Ammonia does not have a flash point but does have lower and upper explosive limits (LEL & UEL). NIOSH lists this at 15 – 28%. Even though the LEL is relatively high indoor releases should be treated with caution in regard to flammability. Control ignition sources and ventilate before entry. Ensure ventilation used is not exposed to flammable concentrations or a source of ignition. Stay out of areas with visible clouds. With outdoor releases, the chance of flammability is lessened.

In open air ammonia burns with difficulty and will generally need a supporting flame to keep burning. In confined spaces ammonia constitute an explosion risk. Oil contamination can increase the flammable properties of ammonia vapours.

8.6.2 HYDROGEN GAS PROPERTIES / HAZARDS

Hydrogen is produced using an electrolyser plant, which uses renewable electricity to separate hydrogen from purified water. By applying an electrical current through water (H2O), it is possible to split the hydrogen (H2) and oxygen (O2) apart as separate gases. The hydrogen can be captured and compressed for direct use, storage, or distribution. The oxygen may be captured for other uses or safely vented to the atmosphere. The hydrogen will be transported to the ammonia production loop by appropriate/engineered piping. There will be a small volume of onsite storage of hydrogen, used to buffer flow between the electrolyser and ammonia units. It will be stored in the gaseous state in stationary aboveground storage, consisting of multiple cylindrical steel composite pressure vessel(s) which may be mounted in a frame and installed on a concrete foundation.

Hydrogen is a colorless, odorless gas which can be easily ignited. Once ignited it burns with a pale blue, almost invisible flame. The vapors are lighter than air. It is flammable over a wide range of vapor/air concentrations. Hydrogen is not toxic but is a simple asphyxiate in high concentrations as it displaces oxygen in the air. Under prolonged exposure to fire or intense heat the containers may rupture violently and rocket. Hydrogen is used to make other chemicals and in oxyhydrogen welding and cutting.

Several characteristics of Hydrogen gas include (excerpt from ERG 115):

- EXTREMELY FLAMMABLE. Will be easily ignited by heat, sparks, or flames. Will form explosive mixtures with air.
- Vapors from liquefied gas are initially heavier than air and spread along ground.
- Hydrogen fires are difficult to detect since they burn with an invisible flame. Use an alternate method of detection (thermal camera, broom handle, etc.) Vapors may travel to source of ignition and flash back.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices. Containers may explode when heated. Ruptured cylinders may rocket.
- Vapors may cause dizziness or asphyxiation without warning. Some may be irritating if inhaled at high concentrations. Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite. Fire may produce irritating and/or toxic gases.

Table 8.6.2 Exposure Limits and Health Effects

Exposure Limit (parts per million)	Description of Exposure Limit
There are no specific exposure limits for Hydrogen. Hydrogen is a simple asphyxiant (SA). Oxygen levels should be maintained above 19.5%.	

8.6.2.1 HAZARDOUS MATERIALS STORAGE

The facility is expected to contain various hazardous chemicals and reagents such as fuels, oils, and cleaners. However, none of these are currently contemplated to be stored at substantial quantities and will be managed according to all appropriate regulatory requirements and safety standards.

8.7 EMERGENCY EQUIPMENT

First Aid kits, rescue equipment, HazMat clothing, medical equipment (i.e., O2 bottle, defibrillator) and portable fire extinguishers etc. shall be installed following local legal requirements. The location of the HSE equipment shall be clearly labelled and marked on the evacuation plan. To ensure the efficiency of the present procedure, the following equipment must be present at all times at its assigned location.

- CSA approved First aid kits are based on the provincial requirement regarding the number of employees at site. A basic first aid kit shall be present in all commercial vehicles registered under Argentia Renewables Hydro. An Automatic external defibrillator must be in close proximity to the work site.
- Fire extinguisher(s) in sufficient numbers so that an extinguisher can be reached within seconds of an area or job station where fire hazards exist. Consideration must be given to the type and the size of the extinguishers based on potential combustible substances used or present in the workplace.
- Where risks of exposure or potential exposure to chemical exists, an eye wash station with 15 minutes of running water must be reachable within seconds of the work area or job station. Fulfilling this requirement could be facilitated by providing the employees with eye wash bottles so they can use them while moving to reach the central eye wash station.
- Where work in confined space is involved, confined space emergency equipment must be readily accessible, and workers must be trained to respond to such an emergency. This includes but is not limited to:
    - Stretcher or man basket
    - Fire extinguisher (during hot work)
    - First aid kit
    - Means of communication (i.e. telephone, two ways radio, air horn) must be readily available to alert ALL personnel of an emergency.
- Where work on or near live equipment, a specific emergency rescue procedure must be developed and tested.
- If using an aerial device or boom truck, an approved bucket evacuation device (control descent device) shall be carried on each aerial device.

- A synthetic rescue rope or mechanical device approved for rescue purposes shall be conspicuously located and readily available where crews are engaged in overhead or confined space work operations.

As an Industrial site we are susceptible to accidents such as chemical spills, fires, or equipment malfunctions. Emergency equipment, firefighting, confined space rescue, high angle rescue, medical aid kits, and spill response materials, allows for a rapid and effective response to contain and mitigate the impact of such incidents. The availability of this equipment is essential for safeguarding lives, protecting the environment, complying with regulations, and maintaining operational continuity.

The below sections are recommended items for emergency response planning.

8.7.1.1 FIRE DEPARTMENT

Item	Quantity
1 ½ “Fire Hose	
1 ½ “Nozzles	
12’ Fibreglass Ladder	
36’ Fibreglass Ladder	
Environmental Spill Kit	
Booster Cables	
Gas-Tight Fully Encapsulated Chemical Resistant Suits	
Cold Water Suits	
Defibrillator	
2hp Air compressor	
60-amp Battery Charger	
4500 psi compressor / Storage bottles	
SCBA 4500 psi	
Chemical Gloves	
Chest Waders	
Class A Foam	
Class B Foam	
Cold Water Suits	
Eye Glass Cleaner	
Fire Axe	
Forestry Nozzle	
Gas Can	
Gas Powered Ice Auger	
Gate Valves	
Gated Wyes	
Grapple	
Hacksaw	

Item	Quantity
2 ½ “Fire Hose	
2 ½ “Nozzle	
Fire Extinguishers ABC 20 lb.	
Emergency Blankets	
Binoculars	
Firefighters turn-out gear	
Chemical Resistant Gloves	
Decontamination Shower	
Binoculars	
Blankets	
Bunker Boots	
Fire Helmet	
Cover Sheets	
Flashlights	
Floodlights	
Floater Suits	
Foam Eductor	
Foam Nozzle	
Foil Exposure Sheets	
Caution Tape	
Chain Saw	
First Aid Kit	
Coveralls	
Cribbing	
Defibrillator	
Extension Cord(s)	
Fall Arrest Harness	

Halogen Tool	
Hard Suction Hose	
Hose Couplings	
Ice Picks	
Mobile Radio	
Nozzle Fittings	
Portable Generator	
Radio Charger	
Rescue Board	
Rescue Pole	
Pry Bar	
Pressure Washer 2200 psi	
Portable Radio	
Smoke Ejector	
Steel Cutter	
Stretcher	
Tarps	
Toolbox	
Traffic Flags	
Trouble Light	
Utility Knife	
Wheel Chocks	
Water Misting System	
Escape Respirators	

Hose Clamp	
Hose Wrench	
Hydrant Wrench	
Medical Oxygen	
Nomex Gloves	
Nomex Hood	
Portable Drill	
Pylons	
Reciprocating Saw	
Rescue Rope	
Propane Torch	
Portable Pump	
Shop Vac	
Spinal Boards	
Stop Signs	
Surgical Gloves	
Tether	
Tool Kit	
Trauma Kit	
Universal Adapter	
Utility Rope	
Wire Cutters	
Gas Monitor(s)	
1040 gpm Fire Apparatus	

8.7.1.2 ENVIRONMENTAL RESPONSE EQUIPMENT

Item	Quantity
General Spill Kit • One (1) 10-liter bag Oclansorb®, or equivalent • Two (2) 4-mil heavy duty disposal plastic bag 762 mm x 1219.2 mm. • One (1) steel hand spade. • Two (2) 100 mm x 1200 mm Sorb Sox®, or equivalent. • Five (5) sorbent pads 9.5 mm x 431.8 mm x	

Item	Quantity
Spill Drum • Fifty (50) sorbent pads 9.5 mm x 431.8 mm x 482.6 mm. • Eight (8) 457.2mm x 457.2mm sorbent pillows • Twelve (12) 100 mm x 1200 mm Sorb Sox®, or equivalent. • One (1) Pair Safety goggles • Nitrile gloves • Five (5) Disposable	

482.6 mm.		bags with caution tags • An emergency response guidebook	

In addition to equipment-dedicated spill kits, Argentia Renewables shall always maintain in good condition spill response caches that are accessible within fifteen (15) minutes travel of all work faces and within the immediate vicinity of fuel/hazardous materials storage areas. Each cache shall have enough absorption capacity for 1000 liters of fuel or hazardous liquids, and shall contain at a minimum the following:

Item	Quantity	Item	Quantity
Hazardous material socks 76.2 mm x 1.2 m;	40	Hazardous material socks 76.2 mm x 2.4 m;	24
Sorb Sox® 101.6 mm x 1.2 m, or equivalent;	60	Hazardous material pillows 457.2 mm x 457.2 mm;	16
44-liter bag Oclansorb®, or equivalent;	8	13-liter bag Oclansorb®, or equivalent;	8
25-pound Qualisorb Gold #628, or equivalent;	4	Hazard material pads 9.5 mm x 431.8 mm x 482.6 mm;	100
Hi-Point Pads (9.5 mm x 431.8 mm x 482.6 mm), or equivalent;	120	Neoprene drain cover 914.4 mm v 914.4 mm x 3.2 mm;	4
1-pound Container Gap Seal plugging compound;	4	Spark resistant poly-shovels.	4
Pairs chemical resistant gloves;	8	Pairs splash goggles.	8
Tyvek coveralls;	8	Plastic scoop and brush.	2
4-mil yellow heavy-duty disposal bags 762 mm x 1219.2 mm.	50	4-kg. Vytac ACX powder acid neutralizer with colour indicator and instructions (for battery acid spills), or equivalent;	8
Steel hand spades	8	Respirators	8
Brooms and dustpans	4 ea.	Leak-sealing putty or plugs	4 pkg
Emergency Response Guide	1	First Aid Kit	1
Barricade tape or cones	4	Mops and mop heads	4
Warning signs	4	Absorbent wipes or rags	4 pkg
Plastic or metal buckets	4	Secondary Containment trays	4

8.7.1.3 CONFINED SPACE RESCUE EQUIPMENT

Item	Quantity	Item	Quantity
Personal Protective Equipment		Lighting	
Full-body harness		Intrinsically safe headlamps or flashlights	

Helmet with integrated eye and face protection	
Gloves	
Steel-toed boots	
Flame-resistant coveralls	
Communication equipment	
Intrinsic Two-way radios	
Communication rope or cable	
Signal devices (whistle, flashlight)	
Gas Detection	
Multi-gas monitor with confined space entry mode	
Calibration gas and accessories	
Gas detector pump	
Rope rescue Equipment	
Kernmantle rescue ropes	
Pulleys and carabiners	
Rope grab and descent control device	
Patient Packaging and Extraction	
Stokes basket or litter	
Patient packaging equipment (straps, immobilization devices)	

Portable lighting	
Rescue Tripod and Winch	
Confined space rescue tripod	
Mechanical winch with retrieval capability	
Tripod carrying bag	
Ventilation Equipment	
Portable ventilation fan	
Ducting for air supply and exhaust	
First Aid Kit	
CSA Z1220 First Aid Kit	
AED (Automated External Defibrillator)	
Fall Protection	
Temporary horizontal lifelines	
Fall arrest devices	
Shock-absorbing lanyards	
Miscellaneous	
Barricade tape	
Multi-gas calibration kit	
Tool Bags	
Non-Sparking tools	
Bolt-cutters	

8.7.1.4 HIGH ANGLE RESCUE EQUIPMENT

Item	Quantity
Personal Protective Equipment	
Full-body harness	
Helmet with integrated eye and face protection	
Leather Roper Gloves	
Steel-toed boots	
Communication equipment	
Intrinsic Two-way radios	
Signal devices (whistle, flashlight)	
Anchors	
Bolt hangers, slings, and webbing for anchor systems	
Approved anchor plates	
Anchor straps or rigging plates for multiple attachment points	
Rope rescue Equipment	
Static / Dynamic 12.5mm rescue ropes	
Pulleys and carabiners	
Rope grab and descent control device	
Rescue Belay Device	
Patient Packaging and Extraction	
Stokes basket or litter	
Patient packaging equipment (straps, immobilization devices)	

Item	Quantity
Lighting	
Intrinsically safe headlamps or flashlights	
Portable lighting	
Knife or Multi-tool	
Cutting tools for emergency situations	
Weather Protection	
Clothing suitable for the environmental conditions (rain gear, cold-weather gear, etc.)	
First Aid Kit	
CSA Z1220 First Aid Kit	
AED (Automated External Defibrillator)	
Fall Protection	
Temporary horizontal lifelines	
Fall arrest devices	
Shock-absorbing lanyards	
Miscellaneous	
Barricade tape	
Edge Protection	
Tool Bags	
Non-Sparking tools	
Bolt-cutters	

8.7.1.5 MOTOR VEHICLE RESCUE EQUIPMENT

Item	Quantity
Personal Protective Equipment	
Fire-resistant coveralls	
Helmet with integrated eye and face protection	
Gloves (fire-resistant and cut-resistant)	
Steel-toed boots	
Hearing Protection	
Extrication Tools	
Hydraulic combination tools (spreaders and cutters in one)	
Hydraulic cutters	
Hydraulic rams	
Hydraulic power units	
Manual spreaders and cutters	
Vehicle stabilization equipment (struts, chocks, stabilizing pads)	
Glass-breaking tools	
Seatbelt cutters	
Communication equipment	
Intrinsic Two-way radios	
Mobile Phone	
Bullhorn or loudspeaker	
Vehicle Access and Entry Tools	
Lockout tools (slim jims, lock picks)	
Airbags for vehicle lifting	
Door opening tools (door wedges, door	

Item	Quantity
Rescue Tools	
Thermal imaging cameras	
Multi-gas detectors	
Flashlights (intrinsically safe)	
Hand tools (wrenches, screwdrivers, pliers) Crowbars and pry bars	
Bolt cutters	
Medical Equipment	
First aid kits	
Automated External Defibrillator (AED)	
Spine boards	
Cervical collars	
Trauma shears	
Tourniquets	
Emergency blankets	
Lighting	
Portable scene lighting (tripods with LED lights)	
Handheld flashlights or headlamps	
Emergency flares	
Triage and Patient Care	
Triage tags	
Stretchers or rescue Baskets	
Backboards	

props)	
Miscellaneous	
Barricade tape	
Duct Tape and zip ties	
Marking and surveying tools (spray paint, cones)	

Collapsible chairs or tents for triage area	

The emergency equipment noted in the above sections may include duplicate items. Emergency response vehicles equipped with the appropriate equipment listed above does not have to be duplicated.

8.7.2 LIST OF LOCAL EMERGENCY RESPONSE EQUIPMENT

Placentia Fire department

Quantity	Equipment	Quantity	Equipment
1	1500 GPM Pumper Truck	6	Lighting sets, 2 mounted, 4 portables
1	1000 GPM Pumper Truck	1	SCBA Breathing Air Compressor, Dive Cylinder Fill Capability
1	840 GPM Pumper Truck	1	Ventis MX4, 4 gas detection monitor
1	Freightliner full size Rescue/Command unit	15	Self-Contained Breathing Apparatus
1	4x4 Crew Cab Pickup truck	35	Spare Cylinders
1	Set Heavy Hydraulic Extrication Tools	3	Master stream monitors, 1 fixed mount, 2 portable
1	Set Heavy Lift Air Bags	2	Class A foam systems, truck mounted
1	Cold Water Rescue Kit	2	Class B foam systems, truck mounted
3	Portable Pumps, 200,250,300 GPM		Medical First Response Kit, AED.
2	Portable Generators, 3500, 5000 watts	1	Complete Communications
1	Marine Medium Expansion Foam Firefighting package		System (Base station with repeater, 6 mobiles, 12 portable radios, 24 pagers, Computer Aided Dispatch through IAR set-up).

Marine Atlantic Inc.

1 – Medium Expansion Foam Equipment Set (Inductor, Nozzles, 25 pails of foam).

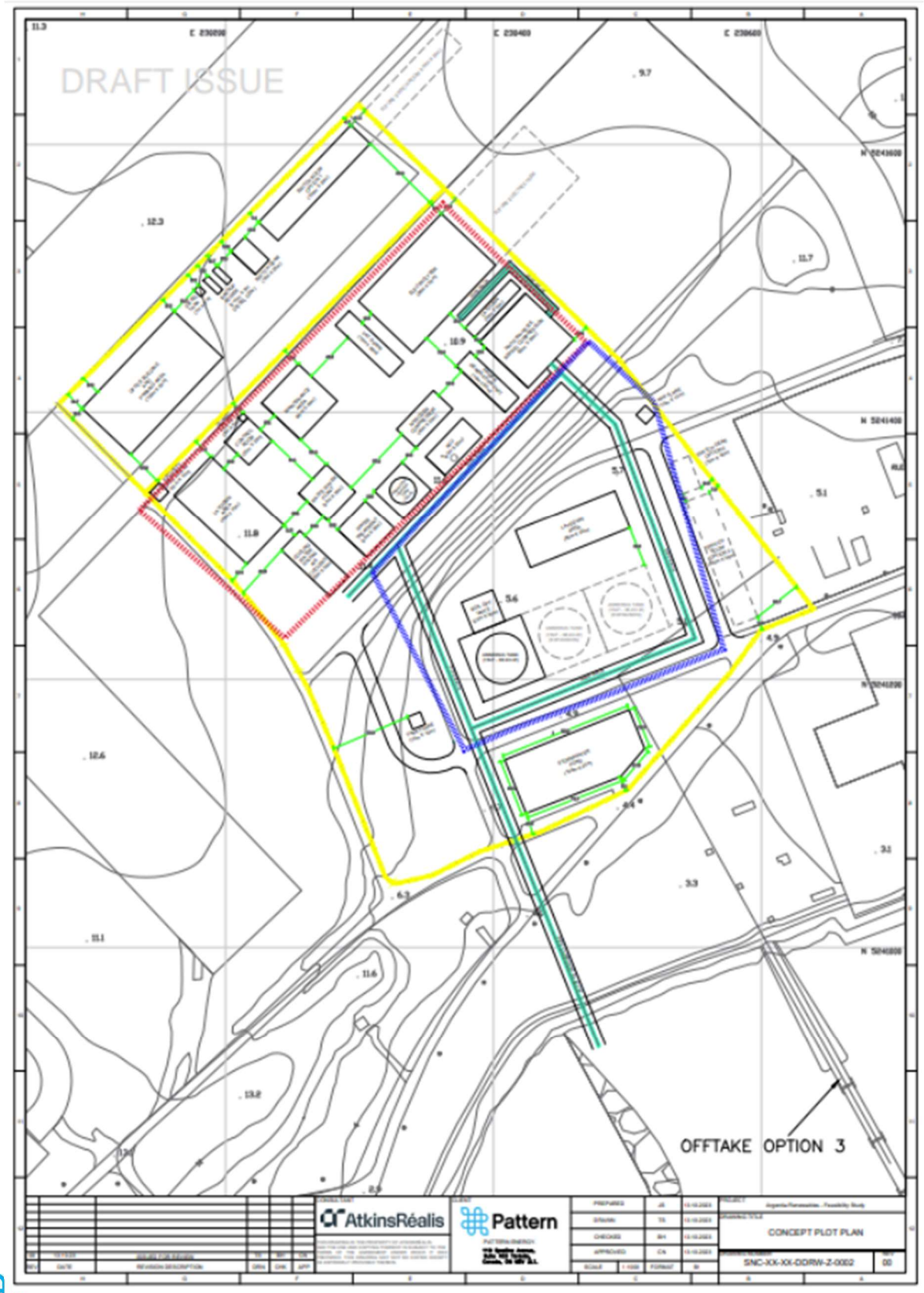
Power's Ambulance Service
4 – Modular Ambulances fully equipped
8 – Paramedics
2 – Emergency Medical Responder Level 2.

8.8 SITE LAYOUT

Argentia Renewables will develop a site layout plan that each work area will post, this plan will be reviewed with workers during the facility orientation:

- Site boundaries
- Roadways, buildings, and major tanks (labelled or numbered)
- Product loading/unloading areas.
- Normal entrances and exits.
- Emergency access points.
- Grid references (if applicable).
- Electrical supply isolation.
- Gas supply isolation valves.
- Towns / Fire water isolation valves.
- Catch basins and manholes.
- Oil/water separators, stormceptors.
- Process chemical shut-down valves.
- First Aid Stations and eye wash.
- Spill Kits.
- Location of all fire extinguishers, fire alarm systems, description of sprinkler systems including fire department connections, control valve(s), riser(s), and water line locations (indicated on site diagram).
- Specific waste bins / hazardous waste area.
- Dangerous goods storage area.
- A north point.
- Location of PPE storage.
- Location of Safety Data Sheets.

The below site plan was developed during Feasibility Study engineering and will be updated as engineering progresses.



8.8.1.1 EMERGENCY WASHING FACILITIES

Argentia Renewables will ensure that emergency washing facilities are provided in a work area where a worker's eyes or skin may be exposed to harmful or corrosive materials or other materials which may burn or irritate. Guidance in the Safety Data Sheet for any hazardous materials which might be used shall be referenced in the identification of any required emergency washing facilities, or eyewash requirements.

8.8.1.2 PLUMBED EMERGENCY EYEWASH FACILITY

In cases where a plumbed emergency eyewash is mandated and provided, only potable water should be utilized in the plumbed emergency eyewash facility. Additionally, for portable (non-plumbed) eyewash units, only potable water or an isotonic saline flushing solution is permissible. The identification of any necessary plumbed emergency eyewash facility should reference the Safety Data Sheet for guidance on hazardous materials. The HSE Coordinator is responsible for reviewing all Safety Data Sheets used by Argentia Renewables employees/subcontractors and determining the need for emergency washing or eyewash facilities or products.

8.8.1.3 ACCESS TO EMERGENCY EYEWASH

Blocking emergency eyewash and shower facilities with materials or equipment is prohibited. Regular inspections must be conducted to verify their proper functioning and ensure they are still suitable for their intended use.

8.8.1.4 FIRE PROTECTION

As per the requirements of Section 443 of the NL OHS regulations, the design and occupancy of any Port of Argentia structure, and the provision of fire alarm and detection equipment and fire protection equipment, shall comply with the Fire Prevention Act, 1991 and Argentia Renewables shall ensure that work is carried out according to the applicable provisions of that Fire Prevention Act and the National Fire Code.

Fire alarm and detection equipment, and fire protection equipment, shall be maintained according to the manufacturer's instructions and any other applicable requirements of provincial legislation.

8.8.1.5 ACCESS, EGRESS AND MOVEMENT

Argentia Renewables shall ensure that all workplaces shall have safe and appropriate means of access and egress to meet the following requirements:

- Work areas shall be arranged to allow the safe movement of workers, equipment, and materials.
- An aisle or passageway designated for pedestrian traffic shall be clearly indicated by markings or other means and, where practicable, floor or grade markings shall be used.
- Practical means of emergency escape shall be provided from a work area in which work processes could create an immediate threat to workers, and where regular means of egress could be rendered dangerous or unusable.
- A walkway shall not be less than 50.8 centimetres wide and shall be accessible by means of a fixed ladder or stairway.

- A curb shall be installed on an elevated thoroughfare to prevent equipment from running off the open edge of the thoroughfare.

8.8.1.6 EXITS AND DOORS

All designated emergency exits shall be designed and marked to provide quick and unimpeded exit, and periodic emergency drills shall be held to ensure workers' awareness of the availability and location of the exits.

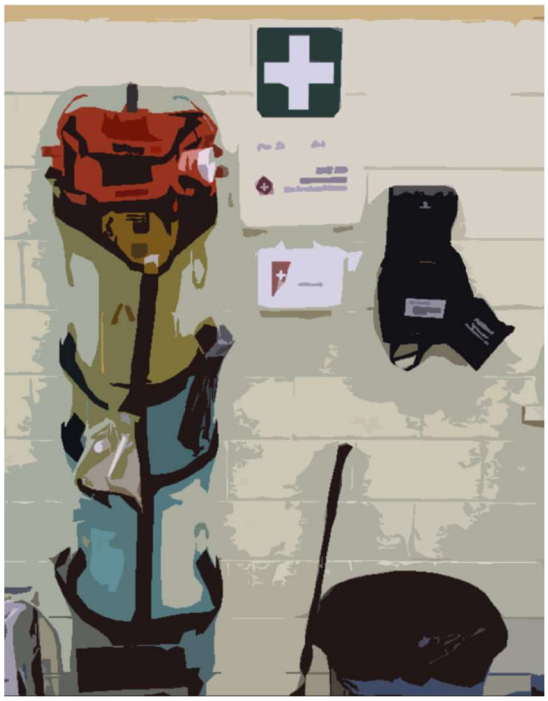
In instances where there are any stairways at a Argentia Renewables facility, a door shall not open directly onto that stairway, but shall open onto a floor or a landing having a width that exceeds the swing of the door.

Any double-acting swing door, if applicable, shall be designed and installed to permit an adequate view through the door where the door presents a safety hazard.

A transparent glass door or a glass panel that extends less than 30.48 centimetres from the floor and which could be mistaken for a doorway, shall be constructed of laminated, tempered or wired safety glass meeting the requirements of the National Building Code of Canada (Note: this requirement does not apply where the glass is fitted with bars, or other devices or markings which clearly indicate the presence and position of the door or panel.

8.8.1.7 LOCAL EMERGENCY BULLETIN BOARDS AND EQUIPMENT

AED Located in Service Bay workshop.



Argentia Renewables Information Board includes location of First Aid Kit / Eye Wash Bottles/Stretcher.

Argentia Renewables Information Board includes First Aid Kit / Eye Wash Bottles / Emergency AED Located on the Safety Board on the main floor.

8.9 EMERGENCY COMMAND CENTRE

The Emergency Command Centre (ECC) functions to provide a place for the coordination and direction of response efforts during an emergency. For the purpose of this EAP, the Main Boardroom will be the primary ECC. In the event that the primary ECC is unavailable, the Facility Manager can designate a new location. As each person enters the ECC to carry out ER duties, they must sign the attendance form. The facility manager along with key senior site staff Emergency Management Team along with operations manager will manage exterior communications and support the ERT.

The ECC will be established for an emergency as deemed necessary by site supervision. The ECC personnel will assemble at the ECC. The primary ECC is equipped with suitable communications equipment including telephone, radio communication, and teleconferencing.

The Control Center will have three levels of communication:

1. Separate private designated phone land line.
2. Cell phone.
3. Two-way radio with designated emergency channel.

The Site Emergency Telephone Number is 709-xxx-xxxx (Security); this number will be monitored by the security office.

All Emergency Phone Numbers for the project will be clearly posted in the Control Center and updated accordingly. All lines of communication will be tested on a regular basis.

The Center will have priority access to all necessary office equipment such as fax machine, photocopier, and radio / cell phone battery chargers. The Center will keep flashlights and batteries, copies of the EAP and copies of the project HSE&S Manual. The Center will keep an up-to-date list of phone numbers for key personnel, response team members, mutual aid, community leaders and external regulatory agencies.

The ECC will be the base for initiating the site evacuation system. The Evacuation Alarm system will be activated when directed by the Incident Commander and/or Emergency Coordinator.

The Security Supervisor will be responsible for maintaining an accurate headcount from both the electronic accountability system and visitor logs. This information must be displayed at the main security office. Security will provide the headcount to the IC in the event of an evacuation and restrict access to the site as directed by the IC.

8.9.1 ALTERNATE EMERGENCY COMMAND CENTER

In the event of a major emergency event, which overwhelms the site, an alternate Emergency Command Center is designated at the Town of Placentia Fire Hall. There will be two telephones: (awaiting assignment) and a company base radio.

8.9.2 ECC EQUIPMENT/SUPPLIES

The ECC will have all the necessary tools for organizing response to an emergency - dispatching internal/external emergency services, directing strategic deployment of emergency resources and equipment, monitoring response efforts and establishing critical communications with corporate Argentia Renewables.

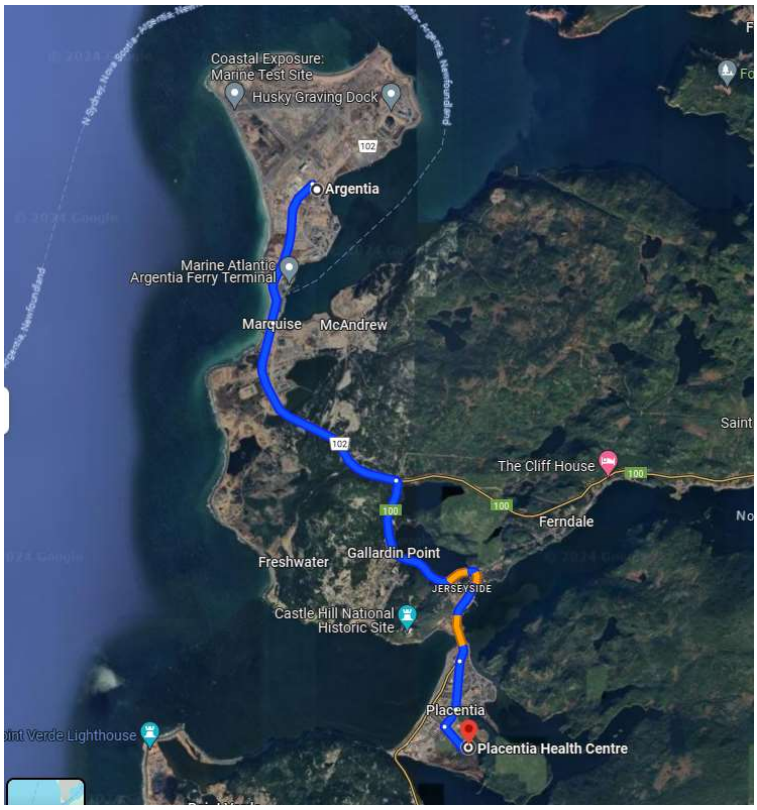
The ECC shall contain:

- The most current version of the EAP.
- Logbook.
- Emergency site maps and plans.
- Site resources equipment list.
- Emergency contact information.
- Communications recording forms.
- ECC attendance forms.
- 2-way radio communication (base station or handheld).
- Satellite phone system.
- Backup VOIP phone system.
- Network connections.
- Laptops.
- Escape Respirators

8.10 MEDICAL CENTRES

Medical emergencies requiring transportation will be conducted by the local ambulance service through 911. If an injured worker requires transportation to the Medical Center/Hospital, please provide directions:

The Placentia Health Centre
1 Corrigan Pl, Placentia, NL, A0B 2Y0.



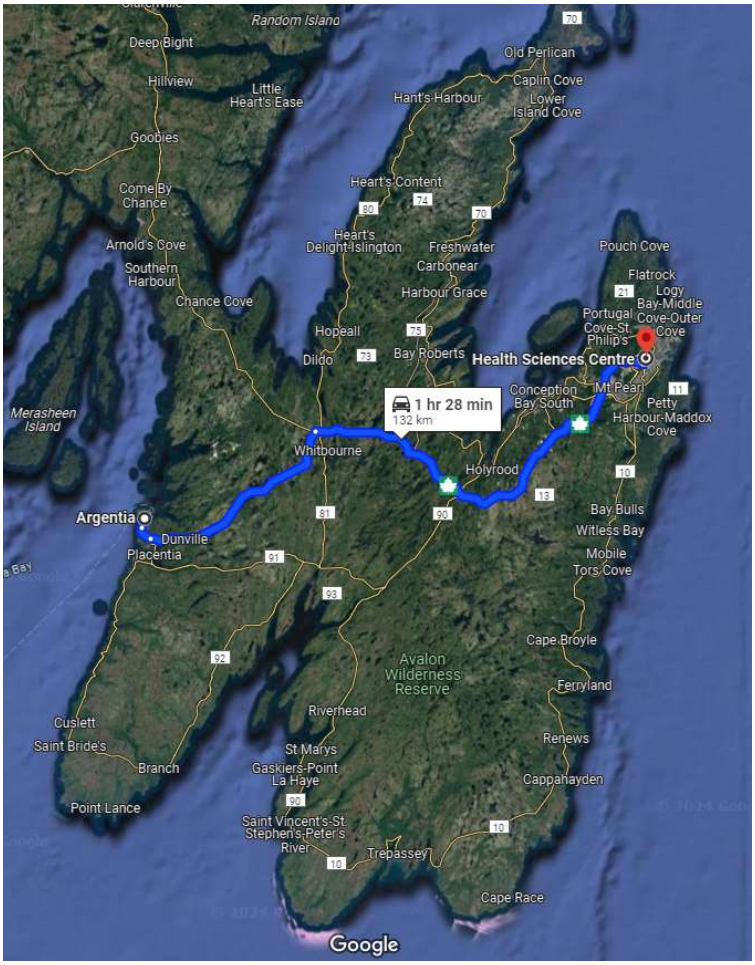
Telephone Number · (709) 227-2013

Travel Direction from Argentia

12 min (9.8.5 km)

1. Follow Placentia Pike for 1.9 km.
2. Take NL-100 S to Prince William Dr 6.4 km.
3. Turn Right at Charter Ave 3km.
4. Turn right onto High Rd for 3.4km
5. Continue Straight onto Prince William Dr
6. Turn left onto Bartlett St

Health Sciences Centre
300 Prince Phillip Dr, St. John's, NL A1B 3V6.



Telephone Number · (709) 777-6300

Travel Directions from Argentia to Health Sciences, St. John's

1 hr 28 min (132 km)

1. Follow Placentia Pike 2km.
2. Follow NL-100 N to NL-1 Trans-Canada Highway 41.6 km.
3. Turn right onto Trans Canada Hwy/NL-1E 79.1 km.
4. Take exit 44 toward Thorburn Rd/NL-50
5. Turn right Thorburn Rd 4.7km
6. Turn left onto Prince Phillip 900m.
7. Turn left onto Clinch Crescent 230m.
8. Turn right onto Mosdell Rd

9 EMERGENCY PROCEDURES

9.1 EMERGENCY NOTIFICATION PROCEDURE

Below is the process for emergency response:

a) Emergency Call Out Procedure will be activated.
b) The crew will ensure that the scene is controlled.
c) As required, a designated First Aid trained worker will assess the injured worker and administer appropriate First Aid while another ERT member or Argentia Renewables worker will be directed to retrieve the stretcher from its designated area.
d) In the meantime, an Argentia Renewable worker will be directed by the First Aider to await the arrival of other workers and, upon arrival, escort the Team to the incident scene.
e) Once the Team arrives at the incident scene, they will take direction from the incident commander of the scene.
f) Depending on the seriousness of the injury/illness the first aider in consultation with the Facility Manager will determine what mode of transportation is required ambulatory or private vehicle.
g) Below is the Emergency Call Out Steps for posting on bulletin boards:

Emergency Call Out Steps

In the event an incident occurs which require emergency services immediately notify Emergency Personnel by hand-held radio (Channel 1) or Security by telephone 709-227-xxxx.

State in a clear and loud voice.

EMERGENCY EMERGENCY EMERGENCY

- State your name!
- State nature of emergency (fire, medical, environment, other)
- Location of incident
- Give a brief description of the injury (foot, ankle, leg, hip, arm, hand, back, neck, head)

If it is safe to do so, the First Person On-Scene should stand by at the scene of the emergency until the ERT arrives.

The person (s) discovering the emergency shall render any assistance for which they are qualified and without endangering themselves.

All emergencies requiring outside agency assistance will be contacted by security at the direction of the incident commander.

Security, upon receiving the initial call shall record as much information as possible to ensure that the proper notification is given to the ERT. The implementation of the Emergency / Rescue Plan will be achieved by the following methods of execution:

- Management / Supervision / Workers Training.
- Site Safety Bulletins.
- Topic at Weekly Safety Meetings and Morning Toolbox Meetings.
- Documentation on Daily Field Level Risk Assessments (identification of “Muster Point”).
- Tabletop Discussion with all personnel involved with the Rescue Plan to ensure they clearly understand their roles/responsibilities.

9.2 INJURY PROCEDURE

The purpose of the injury incident response procedure is to establish a response procedure for injury incident situations during the development and construction of the Argentia Renewable Plant.

First on Scene Incident Procedure - Injury

INJURY GUIDELINES

- Take control of the situation.
- Assess the area for potential hazards.
- Radio / phone for medical assistance including location and description of injury.
- Assure the victim that help is on its way.
- Request employee to retrieve first aid kit and / or AED.
- If capable render First Aid.
- Never move the victim unless they are in danger.
- Utilize other employees for crowd control and assisting the emergency response equipment to the location.
- Stabilize victim to prevent further injury.
- Keep them warm.
- Never give them anything by mouth.
- Assist medical personnel if required.
- Always contact your Supervisor and Safety.

All incidents resulting in injury of any kind must be reported to the Emergency Response Team. Based upon assessment and treatment by the ERT, the injured individual will be cleared to return to their supervisor for reassignment. If the injury dictates, the worker will be required to seek further medical attention off site.

9.2.1 FIRST AID FOR CRYOGENIC-INDUCED INJURIES

Cryogenic substances, such as liquid nitrogen or other extremely cold materials, can cause severe frostbite and other injuries. Danger of freezing occurs when large amounts are spilled, and exposure is extensive.

Any person suffering from cryogenic or cold related injuries should be moved to a safe location only when this can be accomplished without endangering other people. Evaporating liquid hydrogen creates hydrogen gas with a high likelihood of a flammable or explosive mixture arising. Evacuate immediately and activate emergency response and alert them to the potential presence of a liquid hydrogen release or spill. All first aid incidents and above must be entered into the Pattern Reporting Tool no later than 24 hours after the event. For additional information refer to Pattern SMS 503 Incident Notification, Reporting, and Investigation Procedure.

Frozen tissue is painless and appears yellow and waxy. Tissue becomes painful and turns pink or red upon thawing.

Cardiac malfunctions are likely when the internal body temperature drops to 27°C (80° F), and death may result when the internal body temperature drops to 25°C (76° F). If the body temperature is depressed, the patient must be warmed gradually to avoid shock and/or cardiac malfunctions.

1. **Ensure Personal Safety:**
   a. Wear appropriate personal protective equipment (PPE), including insulated gloves and eye protection.
   b. Assess the scene for potential hazards and ensure that it is safe for both the rescuer and the victim.

2. **Call for Professional Help:**
   a. Dial emergency services immediately and provide detailed information about the incident, including the type of cryogenic substance involved.

3. **Assess the Victim:**
   a. Check for responsiveness. If the victim is unresponsive, initiate CPR if trained to do so.
   b. Look for signs of life-threatening conditions, such as breathing difficulties or severe bleeding.

4. **Remove from Exposure:**
   a. Move the victim to a safe and well-ventilated area to prevent further exposure to the cryogenic substance.

5. **Protect Yourself:**
   a. Continue wearing PPE to avoid contact with the cryogenic substance.

6. **Remove Wet Clothing:**
   a. If clothing is wet from the cryogenic substance, gently remove it to prevent further contact and promote warming.

7. **Assess Extent of Injury:**
   a. Examine the affected areas for signs of frostbite, which may include pale or white skin, numbness, or a waxy appearance.

8. **Do Not Rub or Massage:**
   a. Do not rub or massage the affected areas, as this can cause additional damage to the tissue.
   b. It is safest to do nothing except protecting the affected area with a loose cover and transporting the injured person to a medical facility.
   c. Some important things to remember:
      i. Don't remove frozen gloves, shoes, or clothing.
      ii. Don't massage affected body parts.
      iii. Don't expose affected body parts to temperatures above 44°C (112° F), such as a heater or a fire.
      iv. Don't use safety showers, eyewash fountains, or other sources of water.
      v. Don't apply snow or ice to affected area.

vi. Don't apply ointments.

9. **Warm the Victim:**
   a. Gradually warm the affected areas using warm (not hot) water, if available. Immerse the affected areas for 20-30 minutes.
   b. If warm water is not available, use body heat by placing the affected areas against warm skin.

10. **Elevate and Support:**
    a. Elevate the affected limbs to reduce swelling, if applicable.
    b. Provide support to the affected areas with a sterile, non-stick bandage.

11. **Do Not Rewarm If Refreezing is Possible:**
    a. Do not attempt to rewarm the affected areas if there is a risk of refreezing.

12. **Monitor Vital Signs:**
    a. Continuously monitor the victim's vital signs, including breathing and circulation, until professional help arrives.

13. **Comfort and Reassure:**
    a. Offer comfort and reassurance to the victim to reduce stress and anxiety.

14. **Accident Investigation**

All accidents / incidents must be investigated and documented in accordance with Pattern SMS 503 Incident Notification, Reporting, and Investigation Procedure

Medical assistance for a cryogenic-induced injury should be obtained as soon as possible. Treatment of frozen tissue requires medical supervision because incorrect first aid practices invariably aggravate the injury.

9.2.2 FIRST AID FOR AMMONIA INHALATION / CONTACT

Ammonia exposure can occur through inhalation or contact with the skin or eyes. It's crucial to approach such situations with caution. A liquid phase exposure on skin can cause both thermal burns (frost bite) and chemical burns (caustic/alkaline). First aid for skin is copious amounts of water. If there is a liquid phase exposure, it can freeze clothing to skin. Decontaminate with water first prior to removing contaminated clothing. Keep in mind that duration of exposure and a person’s physical makeup can also impact severity of symptoms if there are any pre-existing conditions. The greater the concentrations the worse the symptoms may be, including potentially fatal doses. The Federal OSHA Permissible Exposure Limit is 50 ppm. The NIOSH Recommended Exposure Limit is 25 ppm and the IDLH (Immediately Dangerous to Life and Health) value is 300 ppm. The greater the concentration of ammonia the worse the effects will be. Health effects can range from irritation to fatal doses. Ammonia is moisture seeking. You will feel it in mucus membranes like the eyes, nose, and throat. Moist areas of the skin will sting. Higher doses can lead to bronchial spasm and even pulmonary edema. Ammonia has good early warning characteristics as it can

be detected at low levels thus warning those in the area to evacuate the area. First aid for inhalation is move to fresh air, laterally and upwind. Oxygen can be administered if needed.

If you suspect someone has been exposed to ammonia, follow these general first aid guidelines. Artificial Respiration and CPR are only to be administered by trained personnel.

For Inhalation:

1. **Call for Help:**
   a. Call emergency services (911 or your local emergency number) and provide information about the situation.

2. **Move to Fresh Air:**
   a. Ensure that the concentration in the ammonia room is below 150ppm and you are wearing your full-face respirator. If indoors, open all windows and doors to improve ventilation. Obtain medical attention immediately.
   b. Immediately get the person away from the source of ammonia to fresh air.
   c. If indoors, open windows and doors to improve ventilation.

3. **Assess Breathing:**
   a. Check the person's breathing. If they are not breathing or having difficulty breathing, initiate CPR if you are trained to do so.

4. **Remove Contaminated Clothing:**
   a. If the person's clothing is contaminated, remove it while taking precautions to avoid contact with the ammonia.

5. **Eye Irrigation:**
   a. If liquid or gaseous ammonia contacts the eyes, the employee needs to be removed from the contaminated area and continuously flush eyes with tempered water for 20 minutes. Ensure that the eyes are held open and there is direct contact between the water and eyes. Encourage blinking of the eyes to help with the irrigation of the eye(s).

6. **Do Not Delay:**
   a. Seek professional medical attention promptly. Ammonia exposure can cause serious respiratory and eye damage, and it is essential to have the person evaluated by healthcare professionals.

For Skin Contact:

1. **Remove Contaminated Clothing:**
   a. Quickly and carefully remove any clothing that may be contaminated with ammonia. Handle the clothing with gloves to avoid skin contact.

2. **Flush with Water:**
   a. Rinse the affected skin with copious amounts of cool, running water for at least 15 minutes. Use a safety shower or hose if available.

3. **Avoid Hot Water:**
   a. Do not use hot water, as it may increase the absorption of ammonia through the skin.

4. **Seek Medical Attention:**
   a. Call for emergency medical help, as ammonia exposure can lead to skin burns and other complications.

5. **General Precautions:**
   a. Protect Yourself:
      i. Wear personal protective equipment (PPE), such as gloves and a mask, to protect yourself from exposure while providing first aid.
   b. Do Not Use Neutralizing Agents:
      i. Avoid using neutralizing agents unless directed by medical professionals, as they may react with ammonia and worsen the situation.
   c. Keep the Person Warm:
      ii. Cover the person with a blanket to keep them warm, as exposure to ammonia can lower body temperature.

Medical assistance for an Ammonia Contact / Inhalation injury should be obtained as soon as possible as it can cause serious respiratory and eye damage. All first aid incidents and above must be entered into the Pattern Reporting Tool no later than 24 hours after the event. For additional information refer to Pattern SMS 503 Incident Notification, Reporting, and Investigation Procedure.

9.2.3 PERSONAL PROTECTIVE EQUIPMENT (AMMONIA INCIDENTS)

Depending on the ammonia concentration, PPE requirements will change. Contact lenses are not to be worn whenever entering or working in the ammonia plant. The SDS for the chemical should be consulted to determine the hazards associated with ammonia. It is imperative to wear appropriate personal protective equipment (PPE) when handling potentially hazardous materials. Consult the Material Safety Data Sheet (MSDS) for the chemical to identify associated hazards. To uphold state-of-the-art quality and standardization, all Safety and Emergency Response Equipment must receive prior approval from the Safety Department before purchase. The Safety Department is committed to ongoing research to identify improved and more efficient PPE for emergency response. For additional information on respiratory protection refer to Pattern SMS 514 Respiratory Protection Program. For additional information on personal protective equipment refer to Pattern SMS 516 Personal Protective Equipment. Refer to the table below for PPE requirements.

General access to plant areas where ammonia can be present: Due to the corrosive effects of ammonia, it is necessary during some tasks to cover up skin that may be exposed. • coveralls or other work clothes (It is important to note that clothing must not be contaminated with grease, lubricants, or cleaners as they can react violently with ammonia gas causing severe burns.) • CSA approved safety boot with minimum six inch upper. • Gloves

• Eye protection (Contact lenses are not to be worn whenever entering or working in the ammonia plant.)
In areas where ammonia is known to be present up to 150ppm Due to the corrosive effects of ammonia, it is necessary during some tasks to cover up skin that may be exposed. • Coveralls or other work clothes (It is important to note that clothing must not be contaminated with grease, lubricants, or cleaners as they can react violently with ammonia gas causing severe burns.) • CSA approved safety boot with minimum six inch upper. • Gloves • Respirator. A full-face dual canister air purifying respirator is required when ammonia concentrations are greater than 0ppm. The full-face respirator must be equipped with cartridges that protect the worker against ammonia exposure. The worker must be clean shaven while wearing a respirator and have been fit tested within the last year. • Ammonia Sensor or monitor
Concentrations greater than 150ppm Only trained operations personnel or members of the ERT will be permitted to enter areas where concentrations exceed 150ppm. Below are the PPE requirements: • A NIOSH-certified CBRN full-face-piece SCBA operated in a pressure-demand model, or a pressure-demand supplied air hose respirator with an auxiliary escape bottle. • One- or two-piece anhydrous ammonia resistant suit (for example, neoprene) • Gauntlet style anhydrous ammonia resistant gloves (for example, neoprene). • Chemical-resistant boots with a steel toe and shank. • Coveralls, long underwear, a hard hat worn under the chemical-resistant suit, and chemical-resistant disposable boot-covers worn over the chemical-resistant suit are optional items. • Ammonia sensor or monitor
Note: In areas where there is a possibility of ammonia leaks, and a quick escape may be necessary a cache of Emergency escape hoods will be strategically spaced in these work areas.

9.2.4 FATALITY

Dealing with a work-related fatality is an extremely sensitive and challenging situation that requires a careful and compassionate approach. Additionally, it is essential to involve legal and HR professionals throughout the process.

1. **Immediate Response:**
   a. Ensure the immediate safety of all employees.
   b. Contact emergency services and provide necessary medical attention.
   c. Shut down/turn off any equipment/machinery that may cause additional safety hazard.
   d. Secure the area to preserve evidence and prevent further incidents.

2. **Notify Authorities:**
   a. Follow local legal requirements for reporting workplace fatalities to the relevant authorities. External services such as the local RCMP detachment in Placentia, the hospital, and/or fire department shall be contacted as required by the Incident Commander. The Occupational Health and Safety branch shall be immediately contacted in the event of a work-related fatality incident.
   b. Cooperate fully with any investigations that may follow.

3. **Inform Next of Kin:**
   a. Assign a designated representative (such as a member of the HR team or a supervisor) to personally inform the deceased employee's next of kin.
   b. Communicate the news with empathy, sensitivity, and compassion.
   c. Provide support resources or assistance, such as grief counseling services.

4. **Supporting Employees:**
   a. Hold a meeting with the affected employees to inform them of the situation.
   b. Provide emotional support and counseling services for employees who may be affected by the loss.
   c. Ensure that all employees are aware of available resources for coping with grief.

5. **Investigation:**
   a. Conduct a thorough internal investigation into the circumstances of the fatality.
   b. Cooperate with external agencies, such as occupational health and safety authorities, as required.
   c. Identify any potential violations or hazards that may have contributed to the incident.

6. **Documentation:**
   a. Document all actions taken and decisions made throughout the process.
   b. Keep thorough records of the investigation and any changes made to prevent future incidents.

7. **Review and Improve:**
   a. Conduct a post-incident review to identify areas for improvement in safety protocols and procedures.
   b. Implement any necessary changes to prevent similar incidents in the future.

8. **Media and Public Relations:**
   a. Designated Spokesperson: Designate a spokesperson to communicate with the media and address concerns from the public.
   Regular Updates: Provide regular updates to stakeholders, the public, and the media to ensure accurate information dissemination.

9. **Investigation and Analysis:**
   a. Post-Incident Analysis: Conduct a thorough investigation to determine the cause of the fire or explosion.

b. Lessons Learned: Identify lessons learned from the incident and incorporate them into safety protocols and training.

Any reporting to the public or media regarding Emergency Response events or accidents will be made directly by or on authority of Argentia Renewables Corporate Affairs Manager. Notification to next-of-kin shall be conducted under the direction of the Corporate Affairs Department. Only the RCMP is permitted to release the victim's name.

9.2.5 FIRE / EXPLOSION AND EVACUATION

9.2.5.1 EMERGENCY EVACUATION PROCEDURE

The following conditions (not all inclusive) may require personnel to evacuate the Site:

- Fire
- Flooding
- Earthquakes
- Pandemic Emergencies
- Civil Unrest
- Chemical Release
- Bomb Threat

The Emergency Evacuation procedure contains following information posted in different strategic spots of the facility.

- Emergency telephone number (709-227-XXXX or 911)
- Emergency equipment location (portable fire extinguisher, first aid kit)
- Evacuation Plot Plan with evacuation routes, gates, and muster points

A sign representing the muster point will be identified in a safe area outside of the facility. Following any evacuation supervision/HSE will conduct a roll call of all employees for accountability purposes. For evacuation purposes there will be two ways to access/egress the site. The main security gate can count as one. Wind indicators will be strategically placed around the muster areas to ensure employees choose appropriate muster areas that are upwind of any emergency.

As a complement to the emergency procedure, an acoustic emergency signal (lasting approx. 1 minute) must be operational. Forms for emergency signal depend on facilities. They typically could take the following types.

- Alarm for fire
- Alarm for Ammonia Leak
- Hydrogen Leak
- Alarm for Shelter-in-Place
- Evacuation sign
- All clear signal

In the Event of a Fire:

a) If you see smoke or flames, use care:
   - Contain the fire by closing all doors as you leave.

- Activate the nearest Fire Alarm pull station (Pull stations are located near all building exits)
- Report the fire by dialing 709-227-xxxx.
- Evacuate or extinguish (In most cases, it is best to Evacuate)

b) Use a Fire Extinguisher only if:
- You have been trained.
- You have your back to an unobstructed exit.
- You have a fully charged and proper type unit for the fire you are fighting.
- The fire is contained, and you have reported the fire-by-Fire Alarm or **911** activation.
- Everyone else has left the area.
- There is little smoke or flames.

c) Never fight a fire if:
- You lack a safe way to escape should your efforts fail.
- It has left its source of origin.
- You are unsure of the type of extinguisher you need or have.
- If you can't control the fire within 30 seconds, abandon your efforts, close the door(s), and evacuate immediately.

9.2.5.2 WARDENS

Wardens play an important role in ensuring each building is prepared for an emergency. Along with the emergency plan, wardens are an important risk control measure to ensure that the site is prepared should an emergency situation, potentially a fire, occur.

Key duties of the fire wardens include:
- To assist in implementing and improving effective emergency procedures in the workplace.
- To help prevent emergencies by monitoring the adequacy of the hazardous risk control measures.
- To raise awareness with other staff about the various hazards that exist.
- To instruct workers/contractors/visitors how to respond in an emergency.
- To lead the fire drills and real evacuation procedures-each appointed warden must be familiar with all escape routes and exits from their designated area.
- To ensure all workers/contractors/visitors are accounted for during an evacuation; and,
- To assist all people on site should an emergency occur, including assisting people with special needs (ex: helping someone in a wheelchair to evacuate).

If the emergency (fire) alarm/siren is sounded, wardens have a duty to assist in the safe evacuation of workers/contractors/visitors from the hazard immediately, and to ensure that their designated area has been cleared.

During an evacuation, wardens need to:
- Direct everyone to leave the building using all the appropriate routes and exits (and not inappropriate exits such as lifts).
- Check all accessible spaces in workspaces, including the bathroom, to make sure everyone as evacuated – this should be done on the way out of the building so that the warden isn't putting themselves at risk by re-entering the evacuated area.

- Close each door upon inspection starting from one end of the building working their way towards the emergency exit. Closing each door will also help isolate the various hazards; and,
- Guide everyone to the assembly area and assist in checking that everyone has arrived safely using the Roll Call form and communicating with the ERT upon arrival.

Below is the list of appointed wardens for the following buildings: (to be completed later)

Building	Appointed Wardens	Contact	Alternate Wardens	Contact
Security				
Main Building				
MTCE Building				
Warehouse				

9.2.5.3 BUILDING EVACUATION

You should familiarize yourself with the evacuation routes posted in all buildings. If an evacuation order is issued for your building, or if it were necessary to evacuate due to an emergency, fully cooperate with Safety and Management personnel and:

- Take only keys, wallets, and essential belongings with you.
- If possible, wear weather appropriate clothing.
- If you are the last one to exit your room close, and lock doors.
- Proceed in an orderly fashion to the exit closest to your work area as shown on the posted emergency evacuation procedures map. Follow the directions of your Area Coordinator.
- Walk, don't run, to the nearest exit.
- Use stairs, not elevators.
- Assist people with special needs.
- Get input from the individual how you can help before attempting any rescue technique or giving assistance. Ask how they can best be assisted or moved and whether there are any special considerations, methods, or any items that need to be brought with the person during the evacuation.
- Upon leaving the building, proceed to the area designated for your group on the posted emergency evacuation procedures map. Stay away from trees and overhead electrical wires.
- Once at the emergency Muster point the Facility Manager or designate will account for all personnel and report back to security. If you are not in your normal work location when the evacuation alarm is sounded exit with the group, then you are to assemble with your respective work group.
- Provide any assistance to ERT or other agencies as requested. Do not enter any damaged area until you have been authorized by the Facility Manager.

9.2.5.4 VISUAL /HEARING EVACUATION FOR EMERGENCIES

In case of an evacuation, follow these steps:

Category	Evacuation steps
Blind or Visual Impairment	• Ask the person who is visually impaired f they would like assistance or guidance in leading them out of the building to the Emergency Evacuation Meeting Location. • Give verbal instructions to the person who is visually impaired regarding the safest exit route by using compass directions, estimated distances, and directional terms. (i.e., "from where we're standing, the exit door leading to the main floor of the office building is 10- 20 feet down the hall on the right past the kitchen. There is a stairwell leading to the side exit onto Power Street. The stairwell has 28 steps and there are handrails on both sides, etc.). • Do not walk up and grasp the arm of a visually impaired person and attempt to lead them out of the building. First ask if she would like to hold onto your arm as you exit, especially if there is debris in the area or you need to exit through a crowd. • Give other relevant verbal instructions or information (e.g., "elevators cannot be used, "door handle is on the left and the door opens outward "this exit leads to the east side of the Generating Station, etc.).
Deaf or Hard of Hearing	• Get the attention of a person with a hearing disability by either touch or by making eye contact. • Clearly state the situation and reason for evacuation. Have a pen and paper handy to write a brief statement if the person does not seem to understand. • Offer visual instructions by pointing toward exits or evacuation maps showing the safest exit routes. • If there is imminent danger and evacuation cannot be delayed, the person with a disability should be carried or helped from the building in the best and fastest manner (the person with the disability is the best authority as to how to be moved out of the building). • As you make your way out, encourage those you encounter to exit as well. • Follow instructions of the Department of Safety and Security or other identified emergency personnel. • Wait for instructions before returning to your building after an evacuation.

9.2.5.5 EMERGENCY EVACUATION AREAS AND EMERGENCY MEETING POINTS

Muster assembly areas will be determined for all working areas of the Project, assigned an identifying letter, and plotted on site map(s). These assembly areas will be identified as EMERGENCY EVACUATION AREAS. Evacuation Areas are pre-designated meeting place(s) where employees are to gather in the event of an emergency when site evacuation is required, at this location, all site employees can be accounted for. Evacuation areas will be designed specifically to account for wind dispersion of any potential ammonia vapor release. These points will be clearly defined by blue three-sided signs with white lettering.

Emergency Meeting Points will also be determined for all working areas of the Project, assigned a number which will correlate with the area and be plotted on site map(s). These points are designated locations, for area personnel to meet emergency response services and then escort them to the incident location. These points will be clearly defined by red three-sided signs with white lettering.

Emergency Shelters will be identified for all areas of the Argentia Renewables worksite. These approved shelter areas will be identified and plotted on site maps(s). The Shelter -In-Place locations are for personnel to be sheltered from any ammonia gas, these locations will have the ability to have windows and doors sealed and ventilation systems shut-off for emergency purposes. These points will be clearly defined by green three-sided signs with white lettering.

9.2.5.6 MEDICAL EMERGENCY

In the case on a medical emergency, follow these steps:

- Contact security and provide them with the following details.
  - explain the type of emergency,
  - the location,
  - condition, and
  - number of victims
  - Let the dispatcher know of any safety hazards, chemical spill, fire, fumes, etc.
- Do not hang up unless told to do so by the dispatcher.
- Security will contact 911 and contact the ERT for immediate assistance.
- Do not move the victim unless there is danger of further injury if they are not moved.
- Render first-aid or CPR only if you have been trained.
- First aid kits are located throughout all buildings. Have someone retrieve the first aid kit.
- Do not leave the injured person except to summon help.
- Comfort the victim until emergency medical services arrive.
- Have someone stand outside the building to flag down the ambulance and/or Safety and Security when they reach the vicinity.

9.2.5.7 LOCALIZED FIRES

A life-saving device, the fire extinguisher, strategically placed near an exit for easy access, can swiftly extinguish a small fire or at least control the flames until professional firefighters arrive. Extinguishers are labeled with classifications such as A, B, or C, indicating their effectiveness against ordinary combustibles, flammable liquids, or electrical fires. Some are versatile with A-B-C classification, suitable for all three types.

The primary differentiator among extinguishers is their size, generally adhering to the notion that bigger is better. However, the weight of larger extinguishers may pose maneuverability challenges. The weight specified on an extinguisher account for the chemical content, with the canister adding extra pounds.

Using an Extinguisher:

Extinguishers will be placed in accordance with NFPA code for installation, accessibility, and location of hazard. All maintenance and inspections of fire extinguishers will be in accordance with NFPA 10 – Standard for Portable Fire Extinguishers.

The selection of fire extinguishers for a given situation shall be determined by the below factors;

- Type a fire most likely to occur.
- Size of fire most likely to occur.
- Hazards in the area where the fire is most likely to occur.
- Energized electrical equipment in the vicinity of the fire.
- and ambient temperature conditions.

To help you remember how to use an extinguisher, use the acronym **PASS**:

- **P**ull the extinguisher's safety pin.
- **A**im the chemical at the source of the flames rather than at the flames themselves, standing at least 6 feet from the fire (or as directed on the extinguisher's label).
- **S**queeze the trigger and hold it, keeping the extinguisher upright.
- **S**weep the source of the flames until the extinguisher runs dry.

Whenever you have used an extinguisher, whether or not it is completely empty, you must replace it or refill it right away.

Class of Fires for Proper Type of Fire Extinguishers:

Class A fires consist of ordinary combustibles such as wood, paper, fabric, and most kinds of trash.

Class B: Flammable liquid and gas

These are fires whose fuel is flammable or combustible liquid or gas. These fires follow the same basic fire tetrahedron (heat, fuel, oxygen, chemical reaction) as ordinary combustible fires, except that the fuel in

question is a flammable liquid such as gasoline, or gas such as natural gas. A solid stream of water should never be used to extinguish this type because it can cause the fuel to scatter, spreading the flames. The most effective way to extinguish a liquid or gas fueled fire is by inhibiting the chemical chain reaction of the fire, which can be done by the use of a dry chemical extinguishing agents, although smothering with CO2 or, for liquids, foam is also effective.

Class C: Electrical

Electrical fire may be fought in the same way as an ordinary combustible fire, but water, foam, and other conductive agents are not to be used. While the fire is or possibly could be electrically energized, it can be fought with any extinguishing agent rated for electrical fire. Once electricity is shut off to the equipment involved, it will generally become an ordinary combustible fire.

Fire extinguishers are located throughout every building, vehicles, mobile equipment, and dock area.

9.2.5.8 CHEMICAL FIRES

Fire residues may contain highly toxic materials requiring respiratory protection and impermeable protective clothing to prevent exposure through skin contact, or inhalation of toxic vapors, smoke, or soot.

The person(s) identifying the chemical fire should not in any event attempt to fight a toxic chemical fire under any means for health and safety concerns.

1. If the chemical fire is within a building room than the person(s) will immediately back out of the space and if possible close the door and seal if possible.
2. The person(s) after leaving the area will activate the manual fire alarm system and when safe should call or radio security and request ERT response.
3. All workers/visitors/contractors will evacuate the immediate vicinity and proceed to a muster point or safe location upwind of the chemical fire. The warden(s) will evacuate and document all persons from the building.
4. Security may need to initiate a call to 911 and request emergency responder assistance.
5. The EC upon arrival at the incident will take lead of the scene and ensure that all workers have evacuated the immediate vicinity to the designated muster point or a safe location away from the fire.
6. The EC will meet with the warden(s) if applicable to ensure all workers are accounted for during the evacuation.
7. The EC will collect information (SDS) on any Dangerous Goods involved in, or close to, the fire. The EC will ensure this information is presented to the fire department upon arrival.
8. The EC (if required) will direct and coordinate to seal nearby storm sewers and set up a berm along the berth face to prevent toxic exiting the project footprint.

9. The EC will wait for the arrival of the ERT and / or fire department and assist them to address the chemical fire. The EC will provide the fire department with pertaining information of the chemical substance and confirm the clearance of the vicinity of all people.
10. The EC will continue to control the scene and keep people at a safe distance, as per the EAP.

9.2.5.9 COMPRESSED AIR OR FLAMMABLE GAS FIRE

There is the potential that compressed gas cylinders will explode catastrophically and with no warning. Compressed gases on site include the propane tanks, oxygen tanks and acetylene welding tanks.

The person(s) identifying the compressed air or flammable gas fire should not in any event attempt to fight a fire involving compressed or flammable gas under any means for health and safety concerns.

1. All workers/visitors/contractors will evacuate the immediate vicinity and proceed to a muster point or safe location upwind. The warden(s) will evacuate and document all persons from the building.
2. The person(s) should call security and request the Emergency response Team to respond.
3. Security may initiate a call to 911 and request emergency responder assistance. Security will also assist to escort emergency responders to the incident immediately.
4. The EC upon arrival at the incident will take lead of the scene and ensure that all workers have evacuated the immediate vicinity to the designated muster point or a safe location away from the fire.
5. The EC will meet with the fire warden(s) if applicable to ensure all workers are accounted for during the evacuation.
6. The EC will collect information (SDS) on any Dangerous Goods involved in, or close to, the fire. The EC will ensure this information is presented to the fire department upon arrival.
7. The EC will wait for the arrival of the ERT and/ or fire department and assist them to address the compressed air or flammable fire. The EC will provide the fire department with pertaining information of the substance and confirm the clearance of the vicinity of all people.
8. The EC will continue to control the scene and keep people at a safe distance, as per the EAP.

9.2.5.10 FIRES ON MOBILE EQUIPMENT

Fires on mobile equipment can present multiple types of health and safety hazards to operators, workers in the vicinity and cause large costs in damages to the equipment.

Below are potential fire hazards that can occur on various mobile equipment:

1. Engine compartment – The engine compartment contains an assortment of fluids, fuels, oils, and greases as well as congested wires, hoses, and accumulated debris, all very near high heat sources.

2. Battery compartments – Battery compartments are a potential fire hazard when combustible materials build-up on the top of the battery. These materials, in the presence of moisture, can cause a short circuit.
3. High pressure hoses – Hot fluid spraying from a ruptured high-pressure hose or leaking from a loose flange or fitting could find its way to a source of ignition.
4. Belly pan – The belly pan can accumulate not only leaking fuel from the vehicle, but external debris as well. Due to its unique location a fire starting in the belly pan could quickly engulf the entire vehicle.
5. Hydraulic/Fuel pumps – Due to the high pressures involved with these pumps, fluid spraying from a leaking pump could find its way to a heat source and cause ignition.

The person(s) identifying the mobile equipment fire should not in any event attempt to fight a fire involving compressed or flammable gas under any means for health and safety concerns.

1. If equipped activate the fixed fire suppression system on the mobile equipment.
2. The person(s) should call security and request the Emergency response Team to respond.
3. Security may initiate a call to 911 and request emergency responder assistance. Security will also assist to escort emergency responders to the incident immediately.
4. The EC upon arrival at the incident will take lead of the scene and ensure that all workers have evacuated the immediate vicinity.
5. The EC will collect information (SDS) on any Dangerous Goods involved in, or close to, the fire. The EC will ensure this information is presented to the fire department upon arrival.
6. The EC will wait for the arrival of the ERT and/ or fire department and assist them to address the compressed air or flammable fire. The EC will provide the fire department with pertaining information of the substance and confirm the clearance of the vicinity of all people.
7. The EC will continue to control the scene and keep people at a safe distance, as per the EAP.

9.2.5.11 FIRES ON MARINE VESSELS

Evacuate unwanted personnel from the ship (crew members only should remain on board to assist the Fire Department, if requested).

The EC upon arrival at the incident will take lead of the scene and ensure that all workers have evacuated the immediate vicinity to the designated muster point or a safe location away from the fire.

The EC may call Security on Channel 1. Security may need to assist with calling 911 and request emergency responder assistance. Security will also assist to escort emergency responders to the incident immediately.

The EC may direct Security to contact the following:

1. Port of Argentia - (709-227-5502)
2. Transport Canada - (613- 996-6666)
3. Vessel's Agent – (xxx-xxx-xxxx)

Obtain a copy of the vessel pre-fire plan, if possible, and provide this to the Fire Department upon their arrival.

The EC will wait for the arrival of the fire department and assist them to address the vessel fire.

The EC will continue to control the scene and keep people at a safe distance, as per the EAP.

9.2.5.12 FIRES IN VARIOUS BUILDINGS

1. The person(s) will pull the fire alarm immediately and evacuate the building to proceed to the muster point or safe location upwind of the building fire.
2. All workers/visitors/contractors will evacuate the immediate vicinity and proceed to a muster point or safe location upwind of the building fire. The warden(s) will evacuate and document all persons from the building.

Below is a site map illustrating the locations of these designated marshaling areas (marshalling points will be highlighted when site layout progresses.)

3. The person(s) identifying the fire should quickly assess and determine the level of fire to address the situation based on small (localized) fire.
4. The EC upon arrival at the incident will take lead of the scene and ensure that all workers have evacuated the immediate vicinity to the designated muster point or a safe location away from the fire.
5. The EC may direct Security to call 911 and request the Placentia Fire Department if possible.
6. Security will also assist to escort emergency responders to the incident immediately.
7. The EC will meet with the warden(s) if applicable to ensure all workers are accounted for during the evacuation.
8. Do not re-enter the burning building. Conditions can change dramatically and there is the potential for a “flash-over”.
9. The EC will wait for the arrival of the ERT and or fire department and assist them to address the building fire. The EC will provide the fire department with pertaining information and confirm the clearance of the vicinity of all people.
10. The EC will continue to control the scene and keep people at a safe distance, as per the EAP.
11. Do not re-enter the building(s) until the EC declares the area safe through the confirmation of the emergency agencies which may include fire department or police.

9.2.6 HYDROGEN FIRE PROTECTION AND SUPPRESSION

Normally hydrogen fires are not extinguished until the supply of hydrogen has been shut off or exhausted since there is a danger of re-ignition and explosion. Personnel who work around hydrogen will be trained in the characteristics of hydrogen fires and proper procedures for dealing with them. In areas where Hydrogen is being produced or stored ultraviolet (UV) or infrared (IR) flame detectors will be installed.

Since hydrogen has a very wide flammability range and low ignition energy, it should be assumed that any hydrogen leak or release is likely to result in hydrogen fire.

Hydrogen is colorless, odorless, burns with a nearly invisible flame (especially during daylight hours), and gives off relatively little radiant heat, a hydrogen fire is often difficult to detect. Thermal imaging cameras and flame detectors should be used to verify that a hydrogen flame is present. If these tools are not available, personnel should cautiously approach a suspected leak and watch for thermal waves that signal the presence of a flame and put combustible objects (e.g. a broom) or dust particles into the suspected flame to detect its presence.

Although hydrogen fires do not produce smoke themselves, burning of nearby combustible materials can result in smoke. Personnel should be aware that smoke inhalation can be a danger in a hydrogen fire.

Hydrogen fires can damage or ignite objects in the vicinity through heat transmitted by radiation and convection.

Training for first responders arriving at a hydrogen incident will include the following actions:

- Incident command and control areas.
- Unauthorized personnel.
- Upwind precaution.

- Venting gas.
- Thermal waves that would signal hydrogen flames.
- Elimination of ignition sources.
- Precautions while approaching hydrogen fire.
- Procedure for hydrogen-fed fire, protect adjacent surfaces.

9.2.6.1 HYDROGEN GAS FIRE PROCEDURE

Argentia Renewables will establish emergency shut-down procedures for a hydrogen gas fire in the processing plant to ensure the safety of personnel, equipment, and the surrounding environment. Due to its flammable nature handling hydrogen requires special precautions.

Immediate Response:

1. **Isolate and Shutdown**
   a. Radio to control room to shutdown flow
   b. Initiate local stop and manual valves
   c. Press local emergency stop button

1. **Assess the Situation:**
   a. Before taking any action, assess the size and severity of the fire. Determine if it's safe to attempt to extinguish the fire or if evacuation is necessary.
   b. If possible, identify the source of the hydrogen gas leak and shut it off. This will prevent additional fuel from feeding the fire.

2. **Activate Emergency Services:**
   a. Activate fire alarm system at nearest pull station.
   b. Advise all staff via radio communication that an uncontrolled hydrogen leak condition exists, and that evacuation is required.

3. **Protective Equipment**
   a. Thermal imaging camera
   b. Structural Firefighting PPE
   c. Insulated hand tools
   d. Positive Pressure SCBA

4. **Evacuation and Safety:**
   a. Initiate evacuation procedures for all personnel in the affected and surrounding areas.
   b. Use pre-established evacuation routes and assembly points.
   c. Account for all personnel and visitors to ensure everyone is safely evacuated.

PROTECTIVE CLOTHING

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing provides thermal protection **but only limited chemical protection.**
- Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

EVACUATION

Immediate precautionary measure

- Isolate spill or leak area for at least 100 meters (330 feet) in all directions.

Large Spill

- Consider initial downwind evacuation for at least 800 meters (1/2 mile).

Fire

- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.
- In fires involving Liquefied Petroleum Gases (LPG) (UN1075), Butane (UN1011), Butylene (UN1012), Isobutylene (UN1055), Propylene (UN1077), Isobutane (UN1969), and Propane (UN1978), also refer to BLEVE – SAFETY PRECAUTIONS (Page 366).

In Canada, an Emergency Response Assistance Plan (ERAP) may be required for this product. Please consult the shipping paper and/or the ERAP Program Section (page 390).

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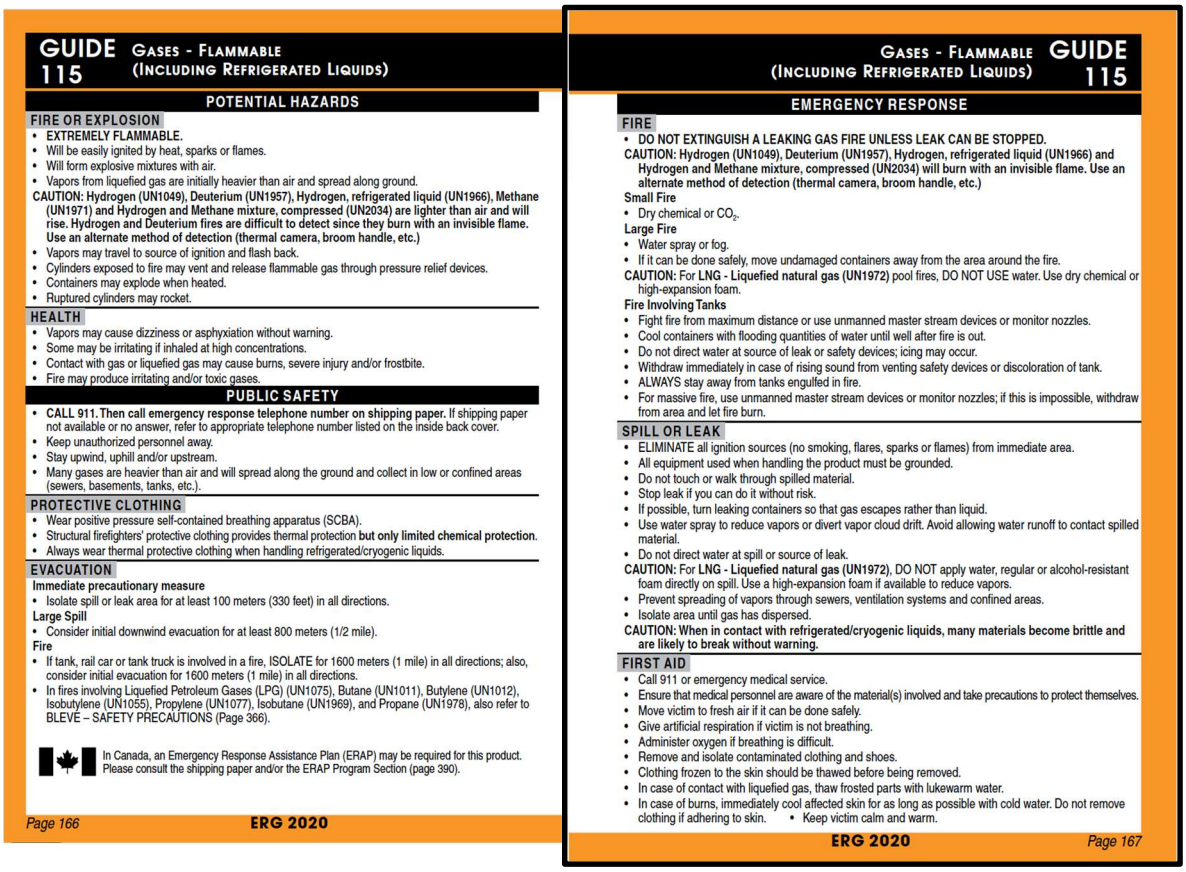
When a superimposed 1.6 km radius is placed around the Argentia Renewables Plant the majority of the Argentia Peninsula is affected. Just outside the 1.6 km radius is the Argentina Ferry Terminal. However, the route for the North Sydney Nova Scotia Argentia ferry lies within the perimeter.



GUIDE 115 GASES - FLAMMABLE (INCLUDING REFRIGERATED LIQUIDS)

POTENTIAL HAZARDS

FIRE OR EXPLOSION
- EXTREMELY FLAMMABLE.
- Will be easily ignited by heat, sparks or flames.
- Will form explosive mixtures with air.
- Vapors from liquefied gas are initially heavier than air and spread along ground.

CAUTION: Hydrogen (UN1049), Deuterium (UN1957), Hydrogen, refrigerated liquid (UN1966), Methane (UN1971) and Hydrogen and Methane mixture, compressed (UN2034) are lighter than air and will rise. Hydrogen and Deuterium fires are difficult to detect since they burn with an invisible flame. Use an alternate method of detection (thermal camera, broom handle, etc.)

- Vapors may travel to source of ignition and flash back.
- Cylinders exposed to fire may vent and release flammable gas through pressure relief devices.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

HEALTH
- Vapors may cause dizziness or asphyxiation without warning.
- Some may be irritating if inhaled at high concentrations.
- Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite.
- Fire may produce irritating and/or toxic gases.

PUBLIC SAFETY
- **CALL 911. Then call emergency response telephone number on shipping paper.** If shipping paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
- Keep unauthorized personnel away.
- Stay upwind, uphill and/or upstream.
- Many gases are heavier than air and will spread along the ground and collect in low or confined areas (sewers, basements, tanks, etc.).

PROTECTIVE CLOTHING
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing provides thermal protection **but only limited chemical protection.**
- Always wear thermal protective clothing when handling refrigerated/cryogenic liquids.

EVACUATION

Immediate precautionary measure
- Isolate spill or leak area for at least 100 meters (330 feet) in all directions.

Large Spill
- Consider initial downwind evacuation for at least 800 meters (1/2 mile).

Fire
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions.
- In fires involving Liquefied Petroleum Gases (LPG) (UN1075), Butane (UN1011), Butylene (UN1012), Isobutylene (UN1055), Propylene (UN1077), Isobutane (UN1969), and Propane (UN1978), also refer to BLEVE – SAFETY PRECAUTIONS (Page 366).

In Canada, an Emergency Response Assistance Plan (ERAP) may be required for this product. Please consult the shipping paper and/or the ERAP Program Section (page 390).

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GASES - FLAMMABLE (INCLUDING REFRIGERATED LIQUIDS) GUIDE 115

EMERGENCY RESPONSE

FIRE
- DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED.

CAUTION: Hydrogen (UN1049), Deuterium (UN1957), Hydrogen, refrigerated liquid (UN1966) and Hydrogen and Methane mixture, compressed (UN2034) will burn with an invisible flame. Use an alternate method of detection (thermal camera, broom handle, etc.)

Small Fire
- Dry chemical or CO_2.

Large Fire
- Water spray or fog.
- If it can be done safely, move undamaged containers away from the area around the fire.

CAUTION: For **LNG - Liquefied natural gas (UN1972)** pool fires, DO NOT USE water. Use dry chemical or high-expansion foam.

Fire Involving Tanks
- Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles.
- Cool containers with flooding quantities of water until well after fire is out.
- Do not direct water at source of leak or safety devices; icing may occur.
- Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- ALWAYS stay away from tanks engulfed in fire.
- For massive fire, use unmanned master stream devices or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

SPILL OR LEAK
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames) from immediate area.
- All equipment used when handling the product must be grounded.
- Do not touch or walk through spilled material.
- Stop leak if you can do it without risk.
- If possible, turn leaking containers so that gas escapes rather than liquid.
- Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material.
- Do not direct water at spill or source of leak.

CAUTION: For **LNG - Liquefied natural gas (UN1972)**, DO NOT apply water, regular or alcohol-resistant foam directly on spill. Use a high-expansion foam if available to reduce vapors.
- Prevent spreading of vapors through sewers, ventilation systems and confined areas.
- Isolate area until gas has dispersed.

CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning.

FIRST AID
- Call 911 or emergency medical service.
- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
- Move victim to fresh air if it can be done safely.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.
- Remove and isolate contaminated clothing and shoes.
- Clothing frozen to the skin should be thawed before being removed.
- In case of contact with liquefied gas, thaw frosted parts with lukewarm water.
- In case of burns, immediately cool affected skin for as long as possible with cold water. Do not remove clothing if adhering to skin. • Keep victim calm and warm.

ERG 2020 Page 167

5. **Emergency Shutdown Procedures:**
   a. Argentia Renewables will establish and clearly document the emergency shutdown procedures for hydrogen-related processes.
   b. These procedures will include the specific steps to shut down equipment, valves, and processes associated with hydrogen.
   c. Plant equipment will be easily identified, emergency shutdown buttons or switches, valves, and pump labels.

6. **Fire Extinguishment**
   a. Keep a safe distance from the fire while applying the extinguishing agent. Hydrogen fires can be particularly hazardous due to their invisible flames, high heat, and potential for explosion. Continuously monitor the situation for any signs of reignition or escalation.
   b. Use an infrared camera to detect flame.

7. **Fire Suppression Systems**
   a. Fire suppression systems should be activated manually or automatically in the event of a fire.

8. **Fire Suppression:**
   a. If the fire is small and manageable, attempt to use portable fire extinguishers that are appropriate for the type of fire (e.g., electrical, chemical).

9. **Preparation of the Site:**
   a. Erect safety barriers and warning signs to restrict access to the fire/explosion site.

10. **Safety Briefing:**
    a. All personnel entering the plant must have attended plant orientation and hydrogen awareness training before entering.
    b. Safety protocols, using personal protective equipment (PPE), and communicating effectively will be emphasized during this training.

11. **External Assistance:**
    a. If required security will provide emergency services with detailed information about the location, size, and nature of the incident.
    b. Upon arrival of the Placentia Fire Department security will guide them to the emergency location and help establish communication with the Emergency Coordinator.

12. **Monitoring:**
    a. Utilize remote monitoring systems to assess the situation and provide real-time information to emergency responders.
    b. Monitor wind direction to predict the potential spread of smoke or fire.

13. **Media and Public Relations:**
    a. Only the Plant Manager or designate is authorized to communicate with the media and address concerns from the public.
    b. To ensure accurate information dissemination, the Plant Manager or Designate will provide regular updates to stakeholders, the public, and the media.

14. **Investigation and Analysis:**
    a. Upon the All Clear being given the Incident Commander will lead an Incident Investigation to determine the cause of the fire or explosion.
    b. If lessons learned are found from the incident investigation, they will be incorporated into the safety procedures and immediately communicated to affected employees.

15. **Documentation:**
    a. All Incident Investigations are to be documented and include, actions taken, lessons learned, and recommendations for future improvements.
    b. Comply with any regulatory requirements for reporting incidents.

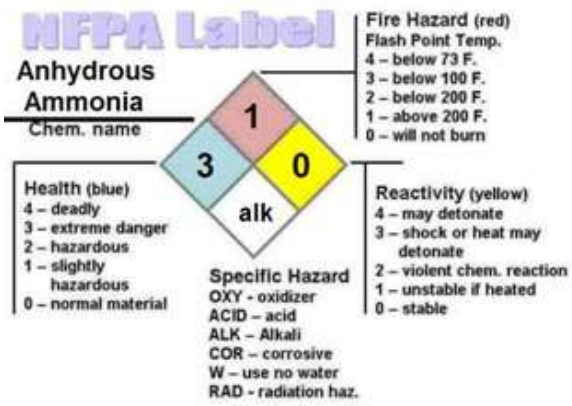
9.2.7 AMMONIA EMERGENCIES

9.2.7.1 AMMONIA LEAK PROCEDURE

For the purposes of EAP planning, an ammonia leak is considered an emergency when the instantaneous concentration reaches 150 ppm and the leak is uncontrolled. Strobe lights and audible alarms will engage when the ammonia concentration reaches 150 ppm. Qualified personnel are to be contacted immediately to address the situation.

Each year Argentia Renewables will provide the local fire departments with the following information:

- Scale map of the facility.
- Location of suitable staging areas.
- Drainage patterns and sewer or tile inlet location.
- Nurse tank parking areas.
- Ammonia storage tank and line shut off valves.
- Other hazards i.e. Hydrogen tanks, propane, and fuel tanks.
- Location of utility emergency shut offs.
- Day and night telephone numbers (office, home, and cellular numbers) of facility operators.
- Location(s) of material safety data sheets (SDS) for ALL hazardous chemicals stored.
- On site location of facility emergency response plan(s).



National Fire Protection Association (NFPA) hazard rating guide label for ammonia is HEALTH (3) “extreme danger”, FIRE HAZARD (1) - “flash point above 200°F”, and SPECIFIC HAZARD (ALK) - “alkali”, and REACTIVITY (0) - Stable. Some NFPA labels may omit “ALK” and/or change the HEALTH rating to (2) - “hazardous” when referring to ammonia gas.

AMMONIA LEAK EMERGENCY RESPONSE

1. **Isolate and Shutdown**
   a. Radio to control room to shutdown flow
   b. Initiate local stop and manual valves
   c. Press local emergency stop button.

2. **Activate Emergency Services:**
   a. Activate fire alarm system at nearest pull station.
   b. Advise all staff via radio communication that an uncontrolled ammonia leak condition exists, and that evacuation is required.
   c. Advise neighboring businesses and stakeholders of the risk of ammonia vapour cloud.
   d. Contact Security, advise that there is an ammonia leak, provide the location.
   e. Initiate emergency evacuation and shelter in place procedures.

3. **Establish Command and Control:**
   a. The Emergency Coordinator will take charge of the emergency response.
   b. Set up an Incident Command Centre (ICC) at a safe distance.

4. **Evacuation and Safety:**
   a. Initiate evacuation procedures for all personnel in the affected and surrounding areas.
   b. Use pre-established evacuation routes and assembly points.
   c. Account for all personnel and visitors to ensure everyone is safely evacuated.

5. **Isolate and Secure the Area:**
   a. Establish a safety perimeter around the ammonia leak to prevent unauthorized access.
   b. Control traffic and keep bystanders away from the affected area.
   c. If the source is not immediately stopped it should be diverted to a safe or lower impact (distance from people) location if possible.
   d. Liquified ammonia and can form a heavy low-lying vapour cloud that stays low to ground and slowly moves down wind and dissipates over time as it warms and natural rises in air.
   e. Using site anemometer and nearby weather station data, monitor the wind speed, direction, and ammonia concentrations down wind of the visible vapour cloud.

6. **Personal Protective Equipment (PPE):**
   a. Ensure that all qualified responders wear appropriate PPE, including self-contained breathing apparatus (SCBA), chemical-resistant suits, gloves, and eye protection.

7. **Spill or leak location emergency response:**
   a. Initiate appropriate and approved detailed response procedures for ammonia cloud and spill clean-up.
   b. It may be possible to contain the leak through plugging; however, only highly trained personnel with appropriate equipment will be authorized to approach on ongoing leak to attempt to stop the flow. Such an attempt may only be taken in pairs and with the necessary precautions of emergency service standing by to assist.
   c. Ammonia cloud suppression techniques by use of fire hose water spray may be used only by trained responders.
   d. The safest approach is to leave the immediate areas and evacuate all areas downwind and within the potential impact zone as will be monitored and communicated by the ERT.
   e. In the event of an uncontrolled, high level ammonia alarm, evacuation of the facility and nearby businesses will be required.
   f. Review the Emergency Response Guidebook (ERG) 2020.
   g. Liaise with contractors and senior staff as they arrive and debrief on situation. Provide a floor plan of the facility being evacuated.
   h. The Placentia Fire Department in consultation with site management will advise when it is safe to allow re-entry into an evacuated building.

9.2.7.2 COMMUNITY NOTIFICATION

Possible sources of ammonia release include the ammonia storage tank, ammonia handling equipment, pipelines, pumps and the ammonia loading arms. In the event of a release, it is extremely important to notify all surrounding neighbors in a timely fashion and to define the extents of the impacted zone should a release occur. Based on the current design details the impact zone has been identified through vapor cloud dispersion modelling using AEGL- 2 and AEGL-3 exposure limits, as defined in section 8.6.1.1.

Although the impact of an ammonia exposure at these concentrations to surrounding neighbors could be quite extreme, the probability of an event such as a tank rupture, extended full flow from a ruptured pipe or loading arm rupture is extremely remote due to the intended mitigation design features and established prudent industry operating procedures. Some of these mitigations include installation of double wall containment at the ammonia storage tank, auto-isolating emergency valves on pipelines, field and personal gas detection monitors, person-watch during any ship loadings (where operators are in constant communication with each other) and constant on-site weather condition monitoring.

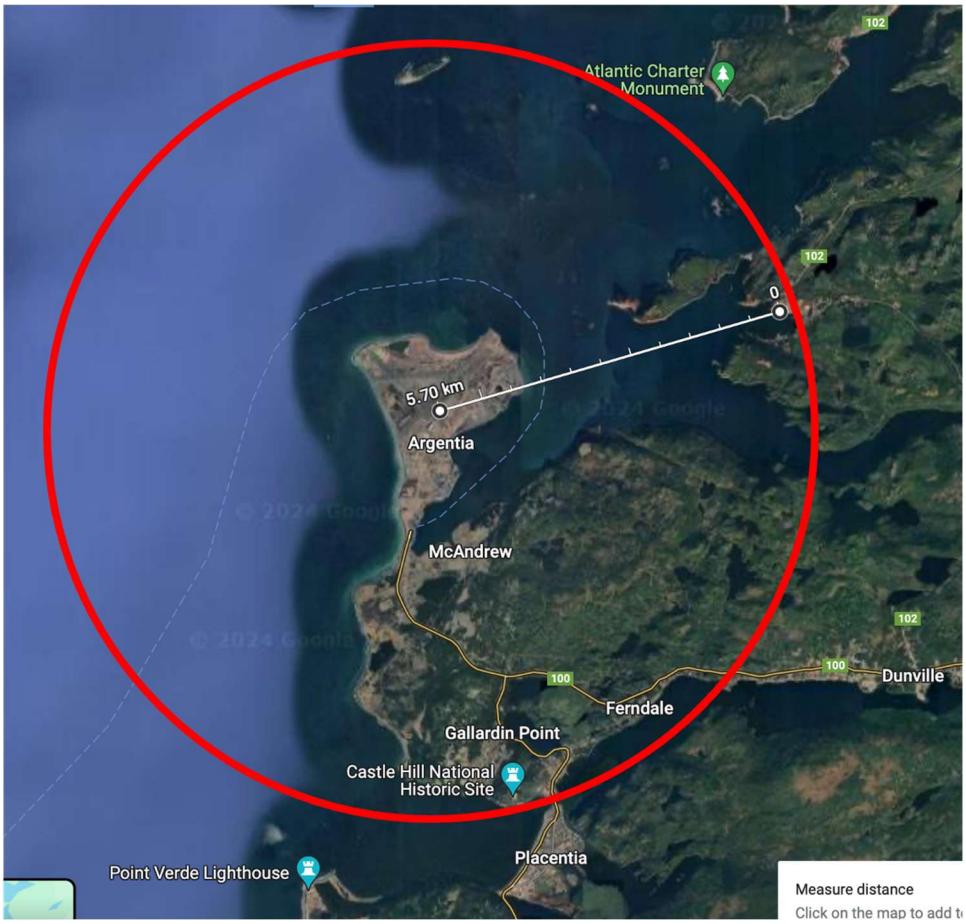
The atmospheric conditions and wind direction play a major role in identifying risk zones, timing of potential ammonia contact and concentration. Risk during an ammonia release is highest during extremely stable atmospheric conditions (such as would occur during a temperature inversion event) and low wind speeds.

From cloud modelling only the worst-case catastrophic event failure of a complete tank collapse during very stable atmospheric conditions and low and stable wind speed (<5km/h) in the direction of nearby towns would impact the nearby communities of Fox Harbour, Freshwater, or Placentia. This scenario is entirely avoidable by installing double wall tank system, which is the industry norm and the intent of the project design team.

A slightly higher potential impact area, which could occur following a pipeline leak is the land area in and immediately surrounding the Argentia northside (peninsula). Any operating entities at the current dock area and land immediately surrounding the plant site are within potential impact zones and will need to have good communication and evacuation protocols in place.

If a significant ammonia leak happens and analysis indicates that an ammonia cloud could potentially reach nearby businesses or communities, all potentially affected parties will be notified about the prevailing situation and advised on necessary actions to be taken.

a. Radio to control room to shutdown flow
b. Initiate local stop and manual valves.
c. Press local emergency stop button.



9.2.7.3 AMMONIA FIRE

Responding to an ammonia fire demands a prompt and coordinated emergency reaction to mitigate potential harm to individuals, assets, and surroundings. It's crucial to understand that tackling ammonia fires poses significant risks, and only adequately trained experts outfitted with suitable protective equipment should engage in managing such emergencies. The subsequent protocol delineates fundamental guidelines and procedures for addressing an ammonia fire:

1. **Activate Emergency Services:**
    a. Activate fire alarm system at nearest pull station.
    b. Advise all staff via radio communication that an uncontrolled ammonia leak condition exists, and that evacuation is required.
    c. Advise neighboring businesses and stakeholders of the risk of ammonia vapour cloud.
    d. Contact Security, advise that there is an ammonia leak, provide the location.
    e. Initiate emergency evacuation and shelter in place procedures.

2. **Establish Command and Control:**
    a. The Emergency Coordinator will take charge of the emergency response.
    b. Set up an Incident Command Centre (ICC) at a safe distance.

3. **Evacuation and Safety:**
    a. Initiate evacuation procedures for all personnel in the affected and surrounding areas.
    b. Use pre-established evacuation routes and assembly points.
    c. Account for all personnel and visitors to ensure everyone is safely evacuated.

4. **Isolate and Secure the Area:**
    a. Establish a safety perimeter around the ammonia leak to prevent unauthorized access.
    b. Control traffic and keep bystanders away from the affected area.
    c. If the source is not immediately stopped it should be diverted to a safe or lower impact (distance from people) location if possible.
    d. Liquified ammonia and can form a heavy low-lying vapour cloud that stays low to ground and slowly moves down wind and dissipates over time as it warms and natural rises in air.
    e. Using site anemometer and nearby weather station data, monitor the wind speed, direction, and ammonia concentrations down wind of the visible vapour cloud.

5. **Personal Protective Equipment (PPE):**
    a. Ensure that all responders wear appropriate PPE, including self-contained breathing apparatus (SCBA), chemical-resistant suits, gloves, and eye protection.

6. **Recommended Fire Suppression:**
    a. Use water spray or fog to cool adjacent containers and equipment to prevent further spread of the fire.
    b. Avoid direct water application on the ammonia leak, as it may cause splattering and increase the release of ammonia vapor.
    c. For small fires use dry chemical or carbon dioxide.
    d. For large fires use water spray, fog, or regular foam. Move containers from the fire area, if possible, to do so without risk to personnel. Do not get water inside containers. Damaged cylinders should be handled by a specialist only.
    e. For fire involving tanks, fight fire from a maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Do not direct water at source of leak or safety device; icing may occur. Withdraw immediately in case of rising sound from venting safety device or discoloration of tank. Always stay away from tanks engulfed in fire.
    f. Below are guidelines for approaching an Ammonia Fire with Fire Hoses;
        i. Fog streams provide a protective curtain for a safe approach to the source.
        ii. Attack using 2, 1½ inch lines. Consider additional lines if available.
        iii. Both lines should apply 95 gallons per minute with 100 psi at each nozzle end.
        iv. Attack crew should consist of 5 members. A crew leader flanked by a nozzle person and hose handler on each of the leader's sides. All on supplied air.
        v. The crew leader should be wearing ammonia rated gloves. All must be on supplied air (SCBAs) and enough air must be available.
        vi. Rotate nozzles applying maximum flow with the widest fog pattern.
        vii. Angle your approach to avoid high downwind concentrations.
        viii. A rapid high and wide rotation is more effective for ammonia absorption.

ix. Nozzle end holders should rotate in unison like the wheels on a bike.
x. If a line fails or crew member develops skin irritation evacuate immediately and reassess.
xi. Narrow sweep when closing in on source.
xii. Avoid pools of ammonia.
xiii. Force vapors down to the ground
xiv. Narrow fog sweep significantly as you close in on source.
xv. Crew leader reaches to valve and tightens it stopping flow.

7. **Specialized Firefighting Agents:**
   a. If available, consider using dry powder or specialized firefighting agents designed for ammonia fires.
   b. Follow manufacturer guidelines and recommendations for the use of specific agents.

8. **Emergency Ventilation:**
   a. Implement emergency ventilation to disperse ammonia vapors away from the fire scene.
   b. Ensure proper airflow direction to prevent the spread of toxic fumes.

9. **Medical Assistance:**
   a. Provide immediate medical attention to anyone exposed to ammonia, including first aid for inhalation or skin contact.
   b. Set up a medical triage area for assessing and treating casualties.

10. **Environmental Monitoring:**
    a. Continuously monitor the air quality for ammonia levels and adjust response actions accordingly.
    b. Run-off from fire control may cause pollution.
    c. If the situation allows control and properly dispose of run-off (effluent).

11. **Decontamination:**
    a. Establish decontamination procedures for responders and affected personnel.
    b. Implement decontamination measures for equipment and PPE used during the response.

12. **Public Notification:**
    a. Communicate with the public and nearby communities about the situation, providing necessary information and instructions.

13. **Aftermath Assessment:**
    a. Conduct a thorough assessment of the incident aftermath, including damage assessment, air quality monitoring, and potential environmental impacts.

14. **Documentation and Lessons Learned:**
    a. Document all actions taken during the emergency response.
    b. Conduct a debriefing session to analyze the response and identify areas for improvement.

9.2.8 SHIP-LOADING AMMONIA EMERGENCY

The bunkering operation with its handling, connection and disconnection of heavy bunkering hoses is subjecting the personnel involved to the risk of being directly exposed to ammonia.

To reduce the risk of leakages, the layout of the bunkering station should enable a smooth bunkering procedure by providing ample space for the necessary operational steps with lifting equipment supporting the mounting of heavy bunkering hoses. Bunkering hoses should be equipped with dry-disconnect couplings and break-away devices that will prevent overstressing hoses and manifold in case of a drift-off scenario. To limit the exposure time, the bunkering control station should be in a safe location enabling the crew to remotely oversee the bunkering operation.

The bunkering lines onboard should be arranged in such a way that it is possible to drain the ammonia to the storage tank and the bunkering hose back to the bunkering facility. The ship bunkering line should be purged with inert gas after fueling operations to eliminate the risk of ammonia leakages when it is not in use.

There are several other design features which will reduce the consequence of leakage during bunkering:

1. Training ship personnel and Argentia Renewables staff on correct bunkering procedures.
2. Proper mechanical shielding of all leakage points on the bunkering manifold including temporary mechanical shielding of the bunkering connection.
3. Leakage detection with automatic closing of bunker valve.
4. Water spray system above the bunkering manifold to reduce toxic vapors in the bunkering station.
5. Spill tray below the bunkering manifold to collect any leakage and to drain the water / ammonia overboard.
6. Manual emergency stop
7. A ship-shore link (SSL) or an equivalent means for automatic and manual Emergency Shutdown (ESD) communication to the bunkering source.

Following is a guideline for emergency responders:

1. **Emergency Notification:**
    a. Immediately notify the control operator to immediately stop the transfer of ammonia.
    b. Use established communication channels such as radio, phone, or emergency alarm systems.

2. **Personnel Safety:**
    a. All personnel involved in the transfer of ammonia must have the appropriate PPE to protect them from accidental contact with ammonia.
    b. Evacuate personnel from the immediate danger zone to designated assembly points.
    c. Ensure that everyone is accounted for and in case of an employee exposure to ammonia place the worker in the emergency shower.

3. **Activate Emergency Response Team:**
   a. Mobilize the emergency response team to manage the situation.
   b. Assign specific roles and responsibilities to team members.
   c. Ensure that team members are equipped with the appropriate personal protective equipment (PPE).

4. **Isolate the Source:**
   a. Identify and isolate the source of the emergency (e.g., leak, spill, fire).
   b. Use operational and ship emergency shutdown procedures to stop loading operations and isolate equipment.
   c. Deploy fire suppression systems if necessary.

5. **Evaluate the Situation:**
   a. Assess the nature and extent of the emergency.
   b. Determine the potential risks, including the stability of the vessel and the cargo.
   c. Consider environmental implications and the potential impact on surrounding areas.

6. **Communicate with the Vessel:**
   a. EC to establish communication with the vessel's captain, crew, and relevant personnel.
   b. Share information about the emergency and collaborate on actions to address the situation.
   c. Request the vessel's assistance in implementing emergency procedures.

7. **Containment and Mitigation:**
   a. Implement measures to contain and mitigate the emergency.
   b. Use containment booms, barriers, or other equipment to control spills.
   c. Deploy firefighting equipment to extinguish fires, if applicable.

8. **Coordinate with External Agencies:**
   a. Collaborate with local authorities, environmental agencies, and emergency services.
   b. Provide accurate and timely information to external agencies to facilitate their response efforts.

9. **Documentation and Reporting:**
   a. Maintain detailed records of the emergency, actions taken, and outcomes.
   b. Prepare incident reports for regulatory authorities and the vessel's management.

10. **Debrief and Review:**
    a. Conduct a thorough debriefing session with all involved personnel.
    b. Review the effectiveness of the emergency response and identify areas for improvement.
    c. Update emergency response plans based on lessons learned.

11. **Return to Normal Operations:**
    a. Only resume ship-loading operations after obtaining approval from relevant authorities and ensuring that the emergency is fully resolved.

9.2.9 SHELTER IN PLACE

A Shelter-in-Place protocol is a set of guidelines designed to protect individuals and communities during emergencies or hazardous situations. It is crucial to have a well-defined plan to ensure the safety and well-being of people in case of events like natural disasters, chemical spills, or other emergencies. During an accidental release of hazardous materials, employees may be required to shelter indoors to prevent exposure to the hazardous material or event.

Buildings will be identified where employees can Shelter-in-Place. The areas will provide adequate protection from chemical release; windows sealed and ventilation systems capable of being shut down to prevent hazardous materials from entering the building.

An accidental release of ammonia on the site may require the Facility Manager to activate the Shelter-In-Place alarm.

Each designated Shelter-in-Place location will be provided with the following essential items:

- Water
- non-perishable food
- first aid supplies
- flashlight, batteries
- Provide appropriate personal protective equipment (PPE), such as respiratory protection, for employees in the shelter locations.
- blankets
- Duct Tape
- Communication system, landline, or radio
- Shut-down procedure for shutting down or modifying Heating, Ventilation, and Air Conditioning (HVAC) systems to minimize the circulation of external air.
- Attendance log sheets
- Emergency response instruction

Employees upon hearing the Shelter-in-Place alarm will:

- If in doors, stay there. If outside, go indoors immediately. Close doors and windows.
- Shut off all sources of ignition.
- If noticeable odour is detected cover your nose and mouth with a wet cloth.
- If outdoors and alarm is sounded proceed directly to a Shelter-in-Place location.
- Conduct a rollcall of all personnel and communicate this to security.

A severe weather event may necessitate you to Shelter-in-Place until the threat of bad weather has passed. Relocating from your normal work area to a space that has no windows or to a lower floor may increase your chances of survival. It is recommended that you:

- Move to the lowest level of the building- they usually provide the best protection.
- Move to an interior room with no windows, or a hallway on the lowest floor possible.
- Move to an interior stairwell if all rooms have windows.
- Stay in the center of the room away from doors and windows.

- Stay in place until the danger has passed.

The Heating and Ventilation system may be shut down or changed to re- circulate air to prevent drawing in outside air.

As part of the annual review of this plan site operations will conduct an emergency drill to test the adequacy of this protocol.

9.2.10 MISSING EMPLOYEE PROCEDURE

The purpose of the missing employee procedure is to establish response procedures for situations which involve missing employees during employment.

The concerns associated with dealing with missing employee(s) can vary dependent upon the circumstances. The following is a guideline to manage the safety of the person(s) who are missing / suspected missing.

Below are guidelines to follow:

1. **Define the Time Frame:**
   a. Establish a clear timeframe for when an employee is considered missing. This may vary depending on the company's policies and the nature of the work.

2. **Check Records and Schedule:**
   a. Verify the employee's schedule and attendance records to confirm their absence.
   b. Review any recent communication or requests from the employee that might provide insight into their absence.

3. **Contact Emergency Contacts:**
   a. If the employee is not reachable, try contacting their emergency contacts listed in their personnel file.
   b. Respect privacy laws and company policies when communicating with emergency contacts.

4. **Internal Communication:**
   a. Inform relevant personnel, such as the employee's supervisor, HR, and any team members who may be affected by the absence.
   b. Maintain confidentiality while sharing information within the organization.

5. **Attempt to Reach the Employee:**
   a. Try contacting the employee through various channels (phone, email, messaging) to determine the reason for their absence.
   b. Contact family and ensure the person is not at home.
   c. Reach out to the employee's friends or colleagues for information.

6. **Check In with Co-workers:**
   a. Speak with the employee's co-workers to see if they have any information about the missing employee's whereabouts or well-being.

7. **Review Security and Access Records:**
   a. Check security and access logs to see if the employee has entered the workplace recently, or if there are any unusual activities.

8. **Notify Authorities:**
   a. If there are genuine concerns about the employee's safety, contact local authorities for assistance. Follow legal and company protocols in doing so.

9. **Follow-up:**
   a. If you have located the missing or lost person notify the management team
   b. Notify all appropriate groups-family, RCMP, other worker search groups
   c. If injured, render first aid as able/required

10. **Document Everything:**
    a. Keep a detailed record of all actions taken, including communications, attempts to contact the employee, and any information gathered.

11. **HR Involvement:**
    a. Involve the HR department to ensure compliance with company policies and legal regulations.
    b. HR may assist in assessing the situation and providing guidance on the appropriate course of action.

12. **Support for Team:**
    a. Provide support to the employee's team members, acknowledging any concerns they may have and assuring them that the situation is being addressed appropriately.

13. **Return-to-Work Interview:**
    a. Once the employee is located or returns, conduct a return-to-work interview to understand the reason for their absence and discuss any necessary support.

9.2.11 CHEMICAL SPILLS

Where chemical substances require handling, transport, and storage at the project site in bulk quantities there is risk of spill, and consequently potential effects to people, property, or the environment. Procedures for clean-up and recovery of spilled chemicals are the responsibility of the departments in which they are being used. For spills outside of the confines of the workplace where chemicals are being used (i.e. during transport of chemicals by vehicle from the port facility to the production site) assistance for clean-up and recovery may be provided under the guidance and direction of the respective department. Where applicable, the site Emergency Rescue Team may be required to review clean-up procedures for such chemicals. For detailed information refer to Pattern EMS 205 Spill Prevention, Countermeasure, and Control Plan

Material safety data sheets for all WHMIS controlled substances are available at locations in which they are used and online under the site WHMIS system. A master MSDS database shall be available to the local hospital and security office.

Here's a general procedure you can follow for managing a workplace spill:

1. **Assess the Situation:**
   - Evaluate the type of spill (chemical, oil, water, etc.) and its potential hazards.
   - Determine the size of the spill and whether it poses an immediate threat to employees, the environment, or property.

2. **Alert Others:**
   - If the spill is significant or poses a danger, immediately notify all employees in the affected area.
   - Use the workplace's emergency communication system, such as alarms, intercoms, or other designated methods.

3. **Isolate the Area:**
   - Establish a perimeter around the spill to prevent the spread of contaminants and to protect employees and others from exposure.
   - Use caution tape, cones, or signs to mark off the affected area.

4. **Personal Protective Equipment (PPE):**
   - Ensure that employees involved in spill cleanup wear appropriate PPE, such as gloves, safety goggles, and, if necessary, respiratory protection.
   - Provide training on the proper use of PPE and ensure that it is readily available.

5. **Containment:**
   - If possible, contain the spill using appropriate materials (absorbent pads, booms, etc.) to prevent further spread.
   - Be cautious not to exacerbate the situation, especially in the case of chemical spills.

6. **Evacuation if Necessary:**
   - If the spill is hazardous and cannot be safely managed, evacuate the affected area following established evacuation procedures.
   - Ensure that employees are directed to designated assembly points.

7. **Spill Response Team Activation:**
   - Activate the ERT to manage the cleanup and containment efforts.
   - If ERT is not required, assign responsible individuals to handle the situation.

8. **Spill Cleanup:**
   - Use appropriate spill cleanup materials and methods depending on the type of spill (i.e., absorbents, neutralizing agents, etc.).

- Follow the specific guidelines for handling the spilled material as outlined in safety data sheets (SDS).

9. **Proper Disposal:**
   - Dispose of contaminated materials according to local, provincial, and federal regulations.
   - Clearly label and secure waste containers for proper disposal.

10. **Reporting:**
    - Report the spill to the relevant authorities, such as the environmental agency or emergency services, as required by regulations.
    - Document the incident in an incident report, including details of the spill, response actions taken, and any follow-up measures.

11. **Decontamination:**
    - Decontaminate affected surfaces and equipment as necessary.
    - Ensure that all employees involved in the spill cleanup undergo decontamination procedures.

9.2.11.1 DECONTAMINATION OF FIRST RESPONDER

Decontamination of first responders is a crucial procedure to minimize the risk of exposure to hazardous materials and contaminants.

- Begin washing PPE of the first responder using soap and water solution and a soft brush. Always move in a downward motion (from head to toe). Make sure to get into all areas, especially folds in the clothing. Wash and rinse (using cold or warm water) until the contaminant is thoroughly removed.
- Remove PPE by rolling downward (from head to toe) and avoid pulling PPE off over the head. Remove the SCBA after other PPE has been removed.
- Place all PPE in labeled durable 6-mil polyethylene bags. Follow manufacturer guidelines for cleaning and disinfecting equipment.

9.2.11.2 DECONTAMINATION OF PATIENT/VICTIM:

Decontamination of patients is a crucial procedure to minimize the risk of exposure to hazardous materials and contaminants.

- Remove the patient/victim from the contaminated area and into the decontamination corridor.
- Remove all clothing (at least down to their undergarments) and place the clothing in a labeled durable 6-mil polyethylene bag.
- Thoroughly wash and rinse (using cold or warm water) the contaminated skin of the patient/victim using a soap and water solution. Be careful not to break the patient/victim's skin during the decontamination process and cover all open wounds.
- Cover the patient/victim to prevent shock and loss of body heat.
- Move the patient/victim to an area where emergency medical treatment can be provided.
- Regularly monitor the health and vital signs of first responders during and after decontamination.

- Provide medical evaluation and treatment for any signs or symptoms of exposure.

9.2.12 ENVIRONMENTAL INCIDENT RESPONSE PROCEDURE

Accidental release of deleterious substances into the environment has the potential to occur during storage, handling, and transfer activities.

Environmental response for large spills, in most circumstances, involves an intense manual labor effort. Therefore, in addition to trained response personnel, it may be necessary to request additional assistance to aid in the recovery and rehabilitation of a contaminated area. The size, amount, and nature of the material spilled, as well as the general characteristics of the surrounding environment, will dictate the number of responding personnel.

All Regulatory reporting to be done by Argentia Renewables authorized personnel.

Emergency Response Team will perform a post-incident debriefing.

Below are guidelines for Spill Response:

1. **Assess the Situation:**
    a. Immediately assess the size, nature, and severity of the spill.
    b. Identify the spilled substance(s) and their potential hazards.
    c. Evaluate the immediate risks to personnel, the environment, and property.
    d. Determine if casualties exist and provide medical assistance if necessary.

2. **Activate Emergency Response Team:**
    a. Activate the emergency response team and notify relevant personnel.
    b. Ensure that all employees are aware of the spill and follow established evacuation procedures if necessary.

3. **Isolate and Secure the Area:**
    a. Isolate the spill area to prevent unauthorized access.
    b. Secure the source of the spill, if possible, to minimize further release.
    c. Identify potential fire hazards and eliminate potential sources of ignition.
    d. Note quantity and type of product.

4. **Personal Protective Equipment (PPE):**
    a. Ensure that personnel responding to the spill are equipped with appropriate PPE, such as gloves, goggles, and protective clothing.

5. **Communication:**
    a. Establish communication with local emergency services, if required.
    b. Assess the size and nature of the spill area and assess the requirement for additional personnel and resources.
    c. Notify relevant authorities, such as environmental agencies, as per regulatory requirements.

6. **Evacuation and First Aid:**
    a. If the spill poses immediate danger, evacuate personnel to a safe location.
    b. Provide first aid to anyone affected by the spill, if necessary.

7. **Containment and Recovery:**
    a. Use appropriate containment measures to prevent the spread of the spill.
    b. Deploy absorbents, booms, or other materials to recover the spilled substance.
    c. Follow established procedures for the proper disposal of recovered materials.

8. **Decontamination:**
    a. Decontaminate affected personnel and equipment following established protocols.
    b. Dispose of contaminated PPE and materials properly.

9. **Reporting:**
    a. Report the spill to relevant regulatory agencies as required by law.
    b. Document the incident, including actions taken and outcomes. For additional information refer to Pattern SMS 503 Incident Notification, Reporting, and Investigation Procedure.

10. **Review and Improvement:**
    a. Conduct a post-incident review to analyze the response and identify areas for improvement.
    b. Update procedures based on lessons learned from the spill.

11. **Training and Awareness:**
    a. Provide training to employees on spill response procedures regularly.
    b. Increase awareness of the importance of spill prevention and response measures.

12. **Regulatory Compliance:**
    a. Ensure that all actions taken during the spill response comply with local, state, and federal regulations.

9.2.13 PIPELINE LEAK

During operations, pipelines are used to carry process chemicals throughout the facility and through a pipe corridor that extends to the wharf in Coopers Cove for ship loading.

The pipeline is constructed from high-density polyethylene (HDPE)-lined steel and laid on grade in a trench route along the access road to Coopers Cove. Additionally, a reclaim water line and wastewater line also parallels the pipeline that carry process-related water. In the event of accidental release, any spill of process-related water must be controlled to minimize potential impacts to the environment.

If an accidental release occurs, designed systems are in place to minimize the leak however, any spilled material to the environment must be contained and remediated. The following is a general guideline that can be followed to minimize and remediate any spilled material to the environment:

1. **Emergency Response Activation:**
   a. Activate the emergency response system.
   b. Alert all relevant personnel about the leak.
   c. Notify emergency services, including the fire department and hazardous materials (HAZMAT) response teams.

2. **Initial Assessment:**
   a. Determine the type and quantity of the leaked chemical.
   b. Identify the location and extent of the leak.
   c. Evaluate potential hazards to personnel, the environment, and surrounding areas.

3. **Evacuation and Isolation:**
   a. If necessary, initiate an immediate evacuation of personnel from the affected area.
   b. Isolate the affected area to prevent the spread of the chemical leak.

4. **Personal Protective Equipment (PPE):**
   a. Ensure that all personnel involved in the response wear appropriate PPE to protect against exposure to hazardous substances.

5. **Control and Containment:**
   a. Attempt to shut off or isolate the leaking section of the pipeline, following established emergency shutdown procedures.
   b. Use containment booms, barriers, or other methods to prevent the spread of the chemical.

6. **Mitigation:**
   a. Deploy resources to minimize the impact of the leak, such as using absorbents or neutralizing agents.
   b. Implement strategies to reduce the risk of fire or explosion.

7. **Decontamination:**
   a. Follow decontamination procedures for personnel and equipment.
   b. Decontaminate affected individuals and equipment as they leave the contaminated area.

8. **Monitoring:**
   a. Implement air and water monitoring to assess the extent of contamination and potential exposure risks.
   b. Continuously monitor the situation to adapt the response as needed.

9. **Documentation:**
   a. Keep detailed records of the incident, including actions taken, resources deployed, and communications.

b. Document any injuries, exposures, or environmental impact.

10. **Reporting:**
    a. Report the incident to Environment Canada 1-800-563-9089.
    b. Provide any necessary documentation and information about the incident.

11. **Remediation:**
    a. Develop and implement a plan for cleaning up and remediating the affected area.
    b. Comply with regulatory requirements for reporting and cleanup.

9.2.14 SPILLS ON LAND / WATER / AIR

Responses for a chemical spill or other release may involve many different actions and may be affected by a variety of regulatory requirements. Response actions and procedures will also be contingent upon the nature and quantity of the materials that are released.

In order to determine the level of spill response capabilities required the site must first determine what chemical are present at the site and in what quantities. Safety data sheets and chemical labelling can be used to determine the hazards associated with each chemical.

In the event of a spill of oil or chemicals the following spill response measures shall be taken as appropriate:

If a spill of fuels, oils, lubricants, or other harmful substances occurs during the construction / operation of the project, the following procedure will be implemented to ensure that the spill is contained as close as possible from the component system as much as possible and ultimately to eliminate hazardous materials entering the environment.

Spill Response Steps:

1. **STOP THE FLOW (when possible)**
    a. Act quickly to reduce the risk of environmental impacts.
    b. Close valves, shut off pumps or plug holes/leaks (ONLY operate equipment that we are authorized to operate).
    c. Stop the flow or the spill at its source (where possible).

2. **ENSURE SAFETY**
    a. Ensure Personal/Public, Electrical and Environmental Safety
    b. Wear appropriate Personal Protective Equipment (PPE) in accordance to spilled product SDS.
    c. Never rush in, always identify the product spilled before taking action.
    d. Warn people in the immediate vicinity.
    e. Ensure that ignition sources are protected or removed if spill is a flammable material.

3. **SECURE THE AREA**

a. Limit access to the spill area.
b. Prevent unauthorized entry onto the site.

4. CONTAIN THE SPILL

a. Block off and protect drains, sewers, and culverts (proactively).
b. Contain spill as close to the source as possible using spill sorbent materials.
c. Prevent spilled material from entering any other drainage structure.
d. If necessary, use a dyke, sandbags, man-made berms, or any other method to prevent any uncontrolled discharge.
e. Make every effort to minimize contamination.
f. Deploy Boom and Barriers: Use containment booms and barriers to prevent the spread of the spilled substance. This helps in isolating the affected area and minimizing the impact on surrounding waters.
g. Deploy Absorbent Materials: Deploy absorbent materials such as pads, socks, or specialized absorbent booms to contain and absorb the spilled substance.
h. Apply Dispersants: Depending on the nature of the spilled substance, consider using approved dispersants to break down and disperse the oil or chemical.
i. Use Skimmers: Deploy skimmers to physically remove the spilled substance from the water surface.

5. NOTIFY/ REPORT

a. Notify the Argentia Renewables Facility Manager (providing spill details). The Facility Manager or designate will be responsible for notifying ERT and external environmental agencies (if applicable). Note that all spills shall be reported internally regardless of product or quantity.

6. CLEAN-UP

a. All equipment and/or material used in clean up (e.g. used sorbent, oil containment materials, etc.) will be disposed of in accordance with the Waste Management Guideline.
b. Accidental spills may produce special wastes (e.g. material with > 3% oil) and contaminated soil. All waste disposals will comply with the Environmental Management Act and applicable Regulations.
c. Contaminated soil will be treated and dealt with as required on a site-specific basis.
d. For water-based clean-up and recovery use pumps and vacuums to recover the spilled substance from the water.
e. Spill response kits and equipment will be replenished.

7. SPILL REPORTING

The spill report will include the following information:

a. Name and phone number of person reporting the spill.
b. Name and phone number of person involved with the spill.
c. Location and time of the spill.
d. Type and quantity of material spilled.
e. Cause and effect of spill.
f. Details of action taken or proposed to contain the spill and minimize its effect.
g. Names of agencies on the scene.

h. Names or other persons or agencies advised.

8. **Coordinate with External Agencies:**
   a. Collaborate with local authorities, environmental agencies, and emergency services.
   b. Provide accurate and timely information to external agencies to facilitate their response efforts.

9. **Documentation and Reporting:**
   a. Maintain detailed records of the emergency, actions taken, and outcomes.
   b. Prepare incident reports for regulatory authorities and the vessel's management.

10. **Debrief and Review:**
    a. Conduct a thorough debriefing session with all personnel involved.
    b. Review the effectiveness of the emergency response and identify areas for improvement.
    c. Update emergency response plans based on lessons learned.

During the implementation of the spill response plan, time is of the essence – the actions taken in the first few hours, or even minutes, determine the extent of the impact. Even small spills can have disastrous results under certain circumstances. Safety will be the first consideration and the response will be planned accordingly – however proactive preparation and planning are central in the implementation of immediate spill response actions.

9.2.15 PERSON OVERBOARD

Work in and around the marine environment at marine facilities could potentially result in a person overboard situation.

Upon initial notification of a person overboard by a first person on-scene, primary response will involve an attempt to retrieve the victim using locally available water rescue equipment. Areas that involve work in or near water will be equipped with life rings, and adequate rescue rope. Additionally, if workers are required to work on or near water, they will be required to wear a personal flotation device.

The Man Overboard (MOB) procedure is designed to efficiently and safely recover a person who has fallen into a water body during marine operations. This procedure aims to minimize response time, maximize visibility, and coordinate actions among the crew to ensure a successful and swift recovery.

1. **Immediate Alert:**
   - The person who first observes the MOB incident must shout "Man Overboard!" to alert the crew.
   - Point at the person in the water to direct the attention of others.

2. **Call for assistance:**
   - Designate a member to activate emergency services, maintain visual contact with the person overboard.

3. **Throw, Don't Go:**
   - If the worker is within reach and conscious, throw a buoyant object such as a lifebuoy or rope to them. Instruct them to grab onto it while maintaining a safe distance.
   - Deploy a lifebuoy or any other suitable flotation device towards the person in the water.
   - Ensure that the device is properly secured and has a line attached for retrieval.

4. **Continuous Monitoring:**
   - Maintain visual contact with the person in the water.
   - Assign a crew member to continuously point at and keep eyes on the MOB until recovery is complete.

5. **Prepare Recovery Equipment:**
   - Ready a recovery ladder, man-overboard recovery sling, or any other appropriate equipment for lifting the person back on board.

6. **Execute Recovery:**
   - Approach the person in the water cautiously to avoid causing additional harm.
   - Use a boat hook or other tools to assist in reaching the person.
   - Deploy the recovery equipment and pull the person safely back on land.

7. **Medical Assessment:**
   - Provide immediate first aid and medical attention as necessary.

9.2.16 VEHICLE / EQUIPMENT INCIDENT PROCEDURE

Responding to a motor vehicle accident on a worksite requires a well-defined and organized procedure to ensure the safety of individuals, the environment, and property.

Potential for vehicle incidents or accidents at the project site exist with activities such as:

- Passenger vehicle movement carrying people and freight throughout the project site.
- Travel from site to the port site.
- Heavy equipment travel and transport on access roads throughout the project site.

The potential risk of vehicle incident varies according to changing conditions. These conditions may include:

- Road conditions (including dust, loose roadbed or unstable road shoulders, ice/snow cover).
- Mechanical failure in vehicle systems; and/or
- Operator error in judgment.

Where vehicle upset presents risk of injury and environmental spill, preservation of life and health will be first priority.

In case of an incident involving vehicle and operator, the following steps will be taken after the emergency notification procedure has been initiated:

1. **Activate Emergency Services:**
   a. Immediately notify Security through the site emergency number.
   b. Security will immediately contact ERT and emergency services (911) if required and provide them with the necessary information about the accident and if dangerous goods involved.
   c. Clearly communicate the location of the accident, the types of dangerous goods, and any other relevant details.

2. **Assess the Situation**
   a. Ensure your own safety first. Wear appropriate personal protective equipment (PPE).
   b. Assess the severity of the accident and determine the types and quantities of dangerous goods involved.
   c. Identify potential hazards, such as fire, leaks, or spills.

3. **Establish an Incident Command:**
   a. Designate a competent person as the incident commander to manage the response efforts.

4. **Isolate and Evacuate:**
   a. Establish an exclusion zone around the accident site to prevent unauthorized access.
   b. If dangerous goods are involved, evacuate personnel from the immediate vicinity, considering wind direction and potential hazards.

5. **Control Ignition Sources:**
   a. Eliminate or control ignition sources, such as turning off engines, prohibiting smoking, and avoiding the use of electronic devices.

6. **Containment and Mitigation:**
   a. Implement measures to contain and control spills, leaks, or releases of dangerous goods.
   b. Use appropriate containment devices, absorbent materials, or barriers to prevent the spread of hazardous substances.
   c. If the vehicle is stable determine if personnel can be immediately extricated from the vehicle without injury or immediate first aid requirements.
   d. If the vehicle is unstable the ERT must secure it with blocking for stability if required.

7. **Provide First Aid and Medical Assistance:**
   a. If there are injured persons, provide first aid as necessary.
   b. Coordinate with emergency medical services to ensure prompt medical attention.

8. **Notify Relevant Authorities:**
   a. Inform relevant regulatory authorities about the accident as required and if required national reporting requirements for dangerous goods incidents.

9. **Communicate with Stakeholders:**
    a. Establish a communication plan to keep workers, emergency responders, and other stakeholders informed about the situation and any necessary actions.

10. **Decontamination:**
    a. If dangerous goods are involved implement decontamination procedures for affected individuals, equipment, and the environment.

11. **Clean-Up and Remediation:**
    a. Develop and implement a plan for the safe clean-up and remediation of the accident site.
    b. Dispose of contaminated materials in accordance with applicable regulations.

9.2.17 WILDLIFE INCIDENTS

Since Argentia Renewables operates in areas with many wildlife habitats it is possible that different types of animals may be encountered during normal working activities. This procedure provides direction for managers and employees who may have such encounters by:

- Ensuring that individuals to whom this policy applies are aware of the ways to prevent and respond to a wildlife encounter.
- Providing a means for employees to request deterrents (such as bear spray or air horn) and address the hazards associated with the use of such deterrents.
-

Wildlife encounters at the project site are common. Interaction with animals such as caribou, moose and black bears has the potential to impact people, property, and the environment. Feeding of wildlife on site is a contravention of the Wildlife act and therefore not permitted on Argentia Renewables properties. Potential incidents may include:

- Vehicle-wildlife collision on site access roads.
- Physical encounter with black bears causing personal harm or property damage.
- Damage to water treatment pond liners and fatality of animals such as caribou, moose, and black bears if they become trapped in sedimentation ponds; and
- Encounters with rabid animals such as foxes.

When animals (e.g. black bear, moose, caribou, or foxes) pose a threat or a problem in the project area, the priority will be personnel safety. After measures have been taken to minimize risk of injury to people, consideration must be given to minimize impact to the animals. Live animal traps cannot be set within the Argentia Renewables area unless permission is granted by the Department of Natural Resources. Responsive actions for the situation will be determined by the Environmental Coordinator through consultation with the Facility Manager or designate, and the Department of Natural Resources, Forestry Services Branch.

Security personnel may conduct response for wildlife control as determined by the Environmental Coordinator. All actions must comply with Wildlife Division regulations and permits. For additional information refer to Pattern EMS 202 Wildlife Incident Reporting System.

9.2.17.1 TRAINING REQUIREMENTS

The following training requirements will be observed:

- Employees will receive training or instruction in wildlife awareness and encounter techniques before undertaking any field work outside the surveyed facility boundaries.
- Training will be refreshed every three years.
- Records of training in wildlife awareness and encounter techniques will be retained in the Pattern Training database.
- Records will be made available to the local Joint Health and Safety Committee upon request.

9.2.17.2 BIRDS

In circumstances where 10 or more bird mortalities are recorded in a single event due to collision with wind energy infrastructure(s) will be considered a reportable wildlife incident, the following process will be followed:

1. **Safety First:**
   a. Before starting any activities, ensure that personal protective equipment (PPE) is worn by those involved in handling the dead birds. This may include gloves, masks, and appropriate clothing.
   b. Identify and assess any potential safety hazards in the area, such as nearby machinery, chemicals, or other risks.
   c. Only trained response teams to safely handle injured birds and coordinate with local wildlife rehabilitation centers.

2. **Site emergency contact:**
   a. Contact Security who will then contact the Environmental Coordinator.

3. **Regulatory Compliance:**
   a. Contact the Provincial Environment Department for direction.

4. **Isolation and Marking:**
   a. Isolate the area where the dead bird(s) are located to prevent interference from other personnel and wildlife.
   b. Clearly mark the area to alert others of the situation and restrict access.
   c. Consult with the environmental coordinator to determine if Bird Scare Cannon placement needs to be put in operation.
   d. If nesting birds are identified in area they are not to be disturbed. Nests can be dismantled after the birds have vacated the nest.

5. **Documentation:**
   a. Record details such as the location, date, and time of discovery.
   b. Take photographs if necessary for documentation and reporting purposes.

6. **Identification:**
   a. If possible, attempt to identify the species of the dead bird(s). This information may be relevant for reporting and monitoring purposes.

7. **Contact Relevant Authorities:**
   a. Notify appropriate authorities, such as local environmental agencies, animal control, or health departments.

8. **Disposal Options:**
   Determine the appropriate method of disposal based on regulations and guidelines. Options may include:
   a. Burial: Bury the dead bird(s) at an appropriate depth, following local guidelines.
   b. Incineration: If available, incinerate the carcasses following environmental regulations.
   c. Contact a licensed waste disposal service for assistance.

9. **Avoiding Further Contamination:**
   a. Minimize the risk of contamination by handling the dead birds carefully and avoiding contact with bodily fluids.
   b. Clean and disinfect any tools or equipment used in the process.

10. **Reporting:**
    a. Report the incident to the appropriate regulatory agencies, as required by local laws.
    b. Provide any necessary documentation and information about the incident.

11. **Review and Preventive Measures:**
    a. Conduct a review of the incident to identify potential causes and implement preventive measures to avoid future occurrences. Wildlife incidents are to be submitted through the Technical Services Environmental Incident Ticketing System.
    b. Consider measures to deter birds from the industrial site to prevent future incidents.

12. **Training and Awareness:**
    a. Ensure that all personnel involved in the process of handling dead birds are trained on the procedures for handling dead birds. All employees are to be made aware of the importance of reporting such incidents promptly.

9.2.17.3 BEARS:

In the event that a bear is reported within the Argentia Renewables work area, the Security Officer must be contacted. This bear must be posing a risk to fellow workers or considered to be nuisance (ex, in a garbage bin) before any expected action. Security personnel will contact the Environmental Coordinator who will assume responsibility for the bear complaint.

The Environmental Coordinator will evaluate and investigate the complaint. If it is determined that the bear has become a nuisance or is placing workers at risk, the Environmental Coordinator will contact the Department of Natural resources and recommend that a live bear trap be deployed.

Encountering a bear at the workplace is a highly unusual situation and can pose significant risks to both employees and the bear itself. It's crucial to prioritize safety and follow proper protocols to ensure the well-being of everyone involved. In circumstances where interaction with a bear has been reported will be considered a reportable wildlife incident, the following process will be followed:

1. **Safety First:**
   a. Remind everyone to remain calm and avoid making sudden movements or loud noises.
   b. Designate someone to assess the bear's behavior from a safe distance.

2. **Site emergency contact:**
   a. Contact Security who will then contact the Environmental Coordinator.

3. **Alert Others:**
   a. Use a loudspeaker or another communication method to alert all employees of the bear sighting.
   b. Encourage everyone to move to a safe area or indoors if possible.

4. **Secure the area:**
   a. If the bear is outside, ensure that all entry points to the building are secure to prevent the bear from entering.
   b. Lock doors and windows, and barricade if necessary.

5. **Contact Relevant Authorities:**
   a. Upon direction from the Environmental Coordinator Security will notify the appropriate authorities, such as local environmental agencies, animal control, or health departments.

6. **Evacuation**
   a. If the bear is in close proximity to the workplace, consider implementing the shelter-in-place plan.
   b. Establish a safe assembly point away from the bear’s location.

7. **Employee Safety**
   a. Instruct employees not to approach the bear, attempt to feed it, or make any sudden movements.
   b. If indoors, advise employees to stay away from windows and doors facing the bear.

8. **Monitor the Bear:**
   a. Continue monitoring the bear's behavior while waiting for wildlife authorities to arrive.
   b. Record any changes in the bear's behavior and report them to authorities.

9. **Wildlife Authorities Arrival:**

a. Follow the guidance of wildlife authorities when they arrive.
b. They may use non-lethal methods to encourage the bear to leave the area.

10. **Identification:**
    a. If possible, attempt to identify the species of the dead bird(s). This information may be relevant for reporting and monitoring purposes.

11. **Return to Normal Operations:**
    a. Wildlife incidents are to be submitted through the Technical Services Environmental Incident Ticketing System.
    b. Once the bear has left the area and authorities confirm it is safe, employees will be given the “All Clear” and return to normal operations.

9.2.17.4 OTHER ANIMALS:

Any animal that is discovered that:

- Pose a threat to workers safety,
- Is injured,
- Whose proximity to operating areas is such that the animal is at risk, or the animal has become a nuisance, contact must be made with security or will advise the environmental coordinator.

The Environmental Coordinator will evaluate and investigate the complaint. If it is determined that the animal has become a nuisance or is placing workers at risk, the Environmental Coordinator will contact the Department of Natural Resources and recommend that a live trap be deployed to relocate the animal.

If the animal is injured, the Environmental Coordinator must contact the department of Natural resources office immediately. All wildlife incidents must be submitted through the Technical Services Environmental Incident Ticketing System.

9.2.18 INCLEMENT WEATHER

Conditions of heavy and sustained precipitation, high winds and blizzard whiteout conditions have the potential to affect normal operating conditions and systems. Potential disruption of primary services such as communications and electricity require consideration for contingency planning and recognition of contingency resources. Additionally, if conditions persist, potential consequences causing property damage, evacuation may be necessary.

During times of inclement weather, the following actions may be considered through consultation between the Safety Department, and departmental managers:

- suspension of operations.
- ensuring status and stand-by of emergency back-up systems (water management system pumps, communications, electricity); and
- consideration for evacuation and mustering including alternate areas and temporary sources of heat.

For detailed information refer to Pattern SMS 521 Inclement Weather Policy.

9.2.18.1 FLOODS / STORM SURGE

Minor or area flooding on site could occur because of a water main break, loss of power to sump pumps, or major multiple rainstorms. For imminent or actual flooding, and only if you can safely do so:

- Secure vital equipment, records, and other important papers.
- If present in your area, report all hazardous materials (chemical, biological, and/or radioactive) to Supervision.
- Move to higher, safer ground.
- Shut off all electrical equipment.
- Do not attempt to drive or walk-through flooded areas.
- Wait for further instructions on immediate action.
- If the building must be evacuated, follow the instructions on Building Evacuation.
- Do not return to your building if you have been evacuated by flooding until you have been instructed to do so.
- Take a product inventory reading of all aboveground tanks including water level readings.
- Above ground tanks should be filled to a level at least 25% above the estimated/predicted floodwater elevation.

9.2.18.2 TORNADO

Experts have estimated that around 230 tornadoes occur in Canada each year, though only around 60 are formally confirmed with most occurring in Southern Ontario, the southern Canadian Prairies and southern Quebec.

Site management shall monitor the weather to provide advanced warnings of potential Tornado generating conditions to employees and contractors.

If a Tornado Watch is issued, then a Tornado is possible. Site management shall issue a Tornado Watch to employees and contractors in the field and provide further instructions. At minimum, crews should prepare to seek shelter.

Tornadoes can occur with little or no warning. To ensure everyone stays safe if a tornado occurs in the area workers can take precautionary actions, including:

- Review and understand the emergency action plan.
- Actively participate in emergency drills
- Know the on-site shelter-in-place location.
- Learn the warning signs of a tornado.
- Pay attention to news of thunderstorms.
- Review response and recovery plans.

Weather forecasting alone cannot guarantee an accurate prediction of a Tornado, and some Tornadoes do occur without a Tornado Warning. During the storm season, employees, contractors, and visitors shall use

the following guidance to identify the potential for Tornado Hazards in their vicinity and should contact site management if any of the indicators below are observed.

Early indicators of Tornadoes in the immediate area may include:

- Strong, persistent rotation in the cloud base.
- Whirling dust or debris on the ground under a cloud base – Tornadoes may not have a funnel.
- Hail or heavy rain followed by either a dead calm or a fast, intense wind shift. Many Tornadoes are wrapped in heavy precipitation, and therefore not visible.
- Loud, continuous roar or rumble as this does not fade in a few seconds like thunder.
- At night, small, bright, blue green to white flashes at ground level near a thunderstorm (as opposed to silvery lightning up in the clouds). These mean power lines are being snapped by very strong winds, as it may be a Tornado, and
- At night, persistent lowering from the cloud base, illuminated or silhouetted by Lightning, especially if it is on the ground or there is a blue-green-white power flash underneath.

9.2.18.3 STRONG WINDS

Site management shall monitor weather to provide advanced Warnings of potential strong wind conditions to employees and contractors in the field.

Workers shall confirm wind speeds prior to commencing working at heights in strong wind conditions and follow wind speed requirements as outlined in SMS 511Working at Heights Procedure Appendix B: Wind Speed Limits.

Before going back up tower, all crews will make an individual determination if it is safe to go back up based on the wind speed averages provided by the turbine they are working on. This is based on the wind speed limitations outlined in SMS 511 Working at Heights Procedure Appendix B: Wind Speed Limits.

9.2.18.4 HURRICANE

Hurricane season officially runs from June through November when the waters of the Atlantic Ocean are warm enough to produce a tropical cyclone, a category of weather systems that includes tropical depressions, tropical storms, and hurricanes. These systems bring mild temperatures, high winds, and often heavy rain.

Hurricanes are a form of tropical cyclones that are capable of causing devastating damage to communities and infrastructure. Hurricanes are storm systems with circulating air and sustained wind speeds of 74 miles per hour or higher. The strongest hurricanes can have wind speeds exceeding 155 miles per hour. The Atlantic hurricane season lasts from June to November and peaks between August and October. For additional on hurricanes refer to Pattern SMS 504 Emergency Preparedness and Response Procedure Appendix H.

Below are activities that will be conducted when hurricanes are forecasted:

- Clear drains and basins
- Trim branches and cut down dead trees.

- Secure all loose items outdoors to prevent them from becoming flying debris.
- If possible non-essential workers should be permitted to work remotely
- Ensure all bunded areas are drained of water. Check before pumping to ensure that no contaminants are present.
- Coordinate all deliveries to site.
- Have an emergency kit available and be prepared for at least 72 hours, with food, water, batteries, a portable radio, and prescription medications.
- Stay up to date by monitoring forecast information and local news.

9.2.18.5 THUNDERSTORM AND LIGHTNING

Weather can have an adverse effect on the work to be done as well as the safety of everyone involved. Lightning specifically, can have serious, even fatal outcomes if not monitored and mitigated efficiently. The Security Team will monitor all reports of lightning near to and on the Argentia site.

The primary methods of obtaining the information regarding lightning will be to check the lightning radar website (https://weather.gc.ca/lightning), the SkyScan or equivalent handheld lightning meters as well as field observations. This document will focus on how the Security Team will monitor the lightning activities and communicate this information site-wide.

The Security Team will provide verbal or email updates to all parties at the Argentia Ammonia Plant on approaching lightning conditions to supervision to help prepare the work force during impending lightning events. The Security Team members will be tasked with monitoring lightning using the SkyScan lightning monitors from different vantage points on site and communicating relevant information.

As soon as any lightning has been reported or detected, the Security Team will closely monitor the lightning with the SkyScan handheld units. The Security Team will monitor the lightning until there is no more evidence of lightning for a period of 30 minutes.

If lightning is detected security will communicate by radio that lightning has been detected. There are three different messages that will be passed depending on the range of lighting:

1. 15-30 km - “This is a lightning advisory that lightning has been detected in the area. (Employees should be prepared to stop work and seek shelter as the storm moves closer). Please follow your respective work procedure and standby for updates.” Employees working at the wind farm should prepare to leave the turbine and seek shelter.
2. 5-15 km - “This is a lightning warning. Lightning has been detected within 5-15 km. Please follow your specific lightning protocol and standby for updates.” For workers working in the windfarm if safe to do so they should exit he farm to a safer location. *For workers not evacuated and inside tower, sit or stand at the centre of the platform and do not touch the tower wall. Contact your immediate supervisor using radio to provide them with turbine number.*
3. 0-5 km - This is a lightning warning. Lightning has been detected within 5 km. All outside workers should be inside a building or vehicle, or safe zone inside tower.
4. All Clear – “There has been NO Lightning detected for a period of 30 minutes, the Lightning Advisory/Warning is ended.” (This message will also go out as an ALL CALL on site radio system.)

If the SkyScan system is not operating Security will inform all workers of this and workers are to use the Flash/Bang method for lightning protection:

To get an estimate of the distance to the lightning strike; count the seconds between the flash and the thunder, then divide by 5. This rough calculation will give you an estimate of distance from you to the strike, in miles. (Kilometers = miles x 1.609). (Example: 31 seconds between flash and thunder; 31 / 5 = 6.2).

9.2.18.6 WINTER WEATHER

This Winter Weather Operations Policy is established to ensure the safety and well-being of all employees during adverse winter weather conditions. The primary objective during winter weather is the safety of all employees. Employees are encouraged to use their best judgment and prioritize personal safety when commuting to and from work. The policy aims to ensure the continuity of essential operations while adapting to and mitigating the impact of winter weather conditions. For additional information refer to Pattern SMS 521 Inclement Weather Policy. If a storm watch is issued by Environment Canada, the following steps shall be taken:

1. **Monitoring Weather Conditions:**
   - Security will be assigned to monitor weather forecasts and conditions to anticipate potential disruptions.
   - Security upon becoming aware of severe winter weather will collect all applicable information from Environment Canada and provide a summary to site management who are responsible for assessing the severity of the weather and making decisions regarding office closures or changes to operations.

2. **Communication:**
   - Employees will be informed of changes in office hours or closures via email, text message, or other designated communication channels.
   - Close all shed and building doors and windows.
   - Turn off all non-essential utilities.
   - Regular updates will be provided to keep employees informed about the evolving weather situation.

3. **Remote Work:**
   Remote Work Option:
   - Employees may be encouraged or required to work remotely during severe winter weather conditions to ensure their safety.
   - Guidelines for remote work, including expectations for communication and productivity, will be provided.

   Equipment and Connectivity:
   - Employees are responsible for ensuring they have the necessary equipment and a stable internet connection to work remotely.

- In case of technical difficulties, employees should promptly communicate with their supervisors.

4. **Office Operations:**
   - Delayed Opening or Closure:
   - If a decision is made to delay the office opening or close it entirely, employees will be informed of the new schedule.
   - Essential personnel may be required to report to the office even in case of closure.
5. **Flexible Work Hours:**
   - Employees may be allowed to adjust their work hours during winter weather conditions to accommodate commuting challenges.
   - Flexible hours must be communicated and agreed upon with supervisors.

6. **Commuting:**
   Safety First:
   - Employees are responsible for assessing their own safety when commuting during winter weather and should use their judgment in deciding whether it is safe to travel.
   - Use of public transportation or carpooling may be promoted to reduce individual risk.

7. **Safety Measures**
   - Employees should dress appropriately for winter weather and use caution when walking in icy or snowy conditions.
   - Argentia Renewables will take measures to maintain safe and clear pathways on the premises during winter weather.

8. **Leave and Absences:**
   - Employees facing commuting challenges may request time off, use paid time off, or explore alternative work arrangements.
   - Supervisors will consider individual circumstances and make accommodations as appropriate.

9.2.18.7 ICING

Icing refers to any type of accumulation of ice or snow on a structure. Icing occurs when water present in the air freezes after it comes in contact with a surface. This can either occur within clouds (in-cloud icing) or result from precipitation (precipitation icing). In-cloud icing usually forms rime, while precipitation icing forms glaze, drizzle, or wet snow.

If icing occurs, it may affect wind turbine operations and maintenance in different ways. For instance, if ice accretes on rotor blades, it reduces the aerodynamic performance of the turbine and is likely to induce production losses. Also, rotor blade icing increases vibrations and fatigue loads and can reduce turbine lifespan. Icing on a wind turbine may also lead to measurement and control errors as well as mechanical and/or electrical failures.

After an icing event, icing related hazards such as ice throw or ice fall are most likely to occur when temperatures rise and are close to or above 0°C. Ice tends to shed because of small vibrations or blade bending.

It should be noted that ice fall is not only limited to wind turbines, but as accumulated ice may also fall from any iced structure on a wind farm.

Icing conditions may be present if one or more of the following is true:

- Freezing rain occurred in the last 24 hours.
- The temperature has hovered at or around freezing during Precipitation.
- Ice or compacted snow is visible on any part of the turbine.
- Ice or compacted snow has fallen off the turbine in the last 24 hours.
- Ice or compacted snow formations are present within the vicinity of the turbine.
- The temperature was above 32°F / 0°C after Icing conditions were present; or
- The current temperature is between -2 and +2 degrees Celsius (28.4 and 35.6 F).

In the event of any of these conditions, site management will issue an ice Watch and instructions to workers to remain clear of areas where there is an icefall potential. For additional information on Icing refer to Pattern 521 Inclement Weather.

9.2.18.8 EARTHQUAKES

The following advice is adapted from the information on earthquakes that can be obtained from Emergency Preparedness Canada at its Internet site: http://www.ocipep-bpiepc.gc.ca. For additional information refer to Pattern SMS 521 Inclement Weather Policy.

GENERAL INFORMATION

Whether you are in a house, a high-rise, a mobile home, etc., these are some suggestions for protecting your employees and the property of your company or employer during an earthquake.

AFTER AN ALERT OF A POSSIBLE EARTHQUAKE

- Move or firmly attach objects that could fall and injure you, such as books, plants, or pottery.
- Ensure that hot-water tanks are well secured to prevent them from falling over and rupturing gas lines or electric wires.
- Show personnel how to turn off the water, electricity, and gas.
- Always have a battery-powered radio handy, a flashlight, and spare batteries. The radio could be the only source of information after an earthquake.
- Have a survival kit containing food, water, sleeping bags, medications, and a first aid kit. Periodically refresh the provisions of food and water. You may have to stay in your house or apartment for several days if it is impossible or very difficult to move around and communicate.
- Plan and conduct regular rehearsals to ensure that all employees know what to do in the event of an emergency.
- Identify all emergency exits, alarms and extinguishers.

DURING AN EARTHQUAKE

- Stay away from windows.
- Stay in the apartment, office, or house during the earthquake. In multi-storied building, avoid elevators because they could become stuck or damaged if the electricity goes out during or after the earthquake.
- Stay away from heavy furniture, shelves, and anything else that could fall over.
- Take shelter beneath a desk, table or piece of solid furniture and hold on to it. If the furniture moves, move along with it.
- If it is impossible to take refuge beneath some furniture, stay along an inside wall and protect yourself as much as possible.
- In a high-rise, the alarm bells and water sprinklers could turn on.
- If an earthquake occurs while driving, personnel should:
    i. Stop as quickly and as safely as possible;
    ii. Move the vehicle to the shoulder or curb, away from utility poles, overhead wires, and out from under overpasses; and
    iii. Stay in the car and set the parking brake. Turn on the radio for emergency broadcast information. A car may jiggle violently on its springs, but it is a good place to stay until the shaking stops. If a power line falls on the car, stay inside until a trained person removes the wire.
- If an earthquake occurs while up tower, personnel should:
    i. Remain in the location that they are in until the shaking stops, and
    ii. Once shaking stops, monitor alerts for known aftershocks, and once it is safe, put on harness and other fall protection equipment and start to climb down tower. In the event of aftershocks, personnel should stop climbing and hold on to the ladder, and then continue climbing down. Personnel should not use lifts to climb down directly after an earthquake.

AFTER AN EARTHQUAKE

- Expect secondary shocks that often follow an earthquake.
- Inspect your immediate area for hazards (fires, spills, hanging debris, etc.).
- Do not use matches, lighters, electric switches, or any source of ignition until you are certain that there are no gas leaks.
- Wear good shoes and protective clothing because the ground might be littered with splinters of glass and other debris.
- Help to locate the injured and provide first aid.
- Listen to the radio to hear instructions from emergency services.
- Check whether the building or house has been damaged. If the damage is serious, do not hesitate to evacuate it.

9.2.19 PANDEMIC

A pandemic or communicable disease event will be emotionally charged situation and we recognize that we won't be able to identify and have answers to all the “What Ifs” in advance off an outbreak. However, with the significant risk a communicable disease event poses to Argentia Renewables and its operations, it is prudent to begin considering the critical decisions that will have to be made to maintain a safe and

supportive environment while ensuring business continuity. For additional information on Pandemic refer to SMS 504 Emergency Preparedness and Response Procedure Appendix C Pandemic Plan.

1. **Prevention:**
    a. All employees are encouraged to maintain good personal hygiene, including regular handwashing with soap and water for at least 20 seconds.
    b. Hand sanitizers and disinfecting wipes will be made available throughout the workplace.
    c. Employees must practice respiratory hygiene, including covering their mouth and nose with a tissue or elbow when coughing or sneezing.
    d. Avoid close contact with individuals displaying symptoms of communicable diseases.

2. **Reporting:**
    a. Employees experiencing symptoms of a communicable disease must report their condition to their immediate supervisor or HR as soon as possible.
    b. If an employee has been diagnosed with a communicable disease, they should inform HR confidentially for appropriate support and guidance.

3. **Workplace Protocols:**
    a. Employees diagnosed with a communicable disease may be required to work remotely or take leave until they are medically cleared to return to the workplace.
    b. Supervisors will work with HR to assess the need for temporary adjustments, such as remote work, flexible schedules, or additional protective measures.
    c. All considerations for work routines will be in accordance with guidelines specified by the Department of Health.

4. **Confidentiality:**
    a. Information regarding an employee's health condition will be kept confidential to the extent allowed by law.
    b. Employees are reminded to respect the privacy of their colleagues and avoid spreading rumors or disclosing personal health information.

5. **Communication:**
    a. Argentia Renewables will provide regular updates and guidance on communicable disease prevention measures.
    b. Employees will be informed of any confirmed cases within the organization while maintaining confidentiality and privacy.

6. **Travel Guidelines:**
    a. Employees are required to follow company guidelines and travel advisories when planning work-related travel.
    b. Any employee returning from a high-risk area must report their travel to HR and may be required to self-isolate or work remotely for a specified period.

7. **Compliance:**

a. Failure to comply with this policy may result in disciplinary action, up to and including termination, depending on the severity of the violation.

9.2.20 CONFINED SPACE RESCUE PROCEDURE

Confined space rescue in the workplace is a critical procedure that involves the safe retrieval of individuals who are trapped or in distress within a confined space. For additional information on Confined Spaces refer to Pattern SMS 508 Confined Space Program.

In case a worker must be rescued from a confined space Argentia Renewables will ensure that emergency response is available to provide the technical rescue requirements for each of these emergencies, below is a summary of confined space rescue procedure.

1. **Prevention and Assessment:**
   a. Identify and assess all confined spaces in the workplace.
   b. Implement measures to prevent unauthorized access to confined spaces.
   c. Clearly label and communicate the hazards associated with confined spaces.
   d. Conduct a thorough risk assessment before any work is performed in confined spaces.

2. **Confined Space Entry Permit:**
   a. Develop and implement a confined space entry permit system.
   b. Require a permit for any work inside a confined space, outlining the scope of work, entry conditions, and safety measures.
   c. Designate an entry supervisor responsible for authorizing and overseeing confined space entry.

3. **Training and Equipment:**
   a. Ensure all personnel involved in confined space rescue are adequately trained.
   b. The ERT will be trained on the use of personal protective equipment (PPE), communication devices, and rescue tools.
   c. ERT will conduct monthly inspections on all rescue equipment, including harnesses, ropes, ventilation equipment, and communication devices, copies of the inspection report will be forwarded to the HSE advisor.

4. **Rescue Team Formation:**
   a. The rescue team will be familiar with the layout and potential hazards of confined spaces.
   b. ERT will develop and practice rescue scenarios regularly through drills and simulations.

5. **Communication Protocols:**
   a. Establish clear communication protocols for all personnel involved in confined space work.
   b. Use reliable communication devices such as radios to maintain constant contact.
   c. Implement an effective alarm system to signal emergencies and initiate rescue procedures.

6. **Rescue Plan:**

a. Develop a detailed confined space rescue plan, including step-by-step procedures.
b. Identify primary and secondary means of entry and exit.
c. Outline the use of ventilation and atmospheric monitoring during rescue operations.
d. Establish roles and responsibilities for each member of the rescue team.

7. **Emergency Response:**
   a. In the event of an emergency, activate the confined space rescue team immediately.
   b. Assess the situation from a safe location and determine the appropriate rescue method.
   c. Implement pre-planned rescue procedures, considering the specific hazards present.

8. **Post-Rescue Evaluation:**
   a. After the rescue, conduct a debriefing session to evaluate the effectiveness of the rescue operation.
   b. Identify any areas for improvement and update the confined space rescue plan accordingly.

9. **Documentation:**
   a. Maintain detailed records of confined space entry permits, training sessions, and rescue drills.
   b. Document any incidents, near misses, or actual rescues for analysis and improvement.

9.2.21 HIGH ANGLE RESCUE RESPONSE PROCEDURE

This procedure is intended to act as a guide. High angle rescues are those in which the rescuers must be supported by a lifeline to keep them from falling. High angle rescues may also be either above or below grade and may involve the raising or lowering of victims. Each emergency situation offers its own individual challenges: therefore, we cannot expect, nor do we try, to offer individual solutions. The following is a generic procedure for high angle rescue that is intended to be used as a guide to perform a risk assessment to develop a unique procedure required for a given event. For additional information on working from heights refer to Pattern SMS 511 Working at Heights Procedure.

1. **Activate Emergency Services:**
   a. Immediately notify Security through the site emergency number.
   b. Security will immediately contact ERT and emergency services (911) if required and provide them with the necessary information about the incident / accident.
   c. Clearly communicate the location of the accident and any other relevant details.

2. **Assess the Situation**
   a. Ensure your own safety first. Ensure that all rescue team members wear appropriate PPE, including helmets, harnesses, gloves, and eye protection.
   b. Identify the specific high angle rescue scenario and assess the risks involved.
   c. Gather information about the victim's location, the elevation, and any potential hazards.
   d. Determine the appropriate rescue technique based on the specific situation.

3. **Establish an Incident Command:**

a. Designate a competent person as the incident commander to manage the response efforts.

4. **Isolate and Evacuate:**
   a. Establish an exclusion zone around the incident / accident site to prevent unauthorized access.

5. **Rescue Team Deployment:**
   a. Deploy trained and equipped rescue team members to the location of the victim.
   b. Follow established communication protocols to coordinate the rescue efforts.

6. **Victim Stabilization:**
   a. Assess the condition of the victim and provide immediate medical attention if necessary.
   b. Stabilize the victim to prevent further injury during the rescue process.

7. **Anchor Systems:**
   a. Identify secure anchor points for the rescue system, such as strong and stable structures.
   b. Rig anchor systems using certified equipment, ensuring redundancy for added safety.

8. **Rescue Equipment:**
   a. Use specialized rescue equipment such as ropes, pulleys, harnesses, and descenders.
   b. Ensure that all equipment is in good working order and has been inspected regularly.
   c. Rigging and Lowering Systems:
   d. Set up rigging systems for lowering or raising the victim, depending on the situation.
   e. Use controlled descent devices to ensure a safe and controlled lowering process.

9. **Rescue Operation:**
   a. Execute the planned rescue operation with precision and caution.
   b. Maintain constant communication between team members and the victim during the rescue.

10. **When lowering / raising the injured:**
    a. Wherever possible a stretcher should be used.
    b. A suspected injury should be treated as an actual injury.
    c. Injured will remain on stretcher until at hospital.
    d. If treatment required during raising / lowering, secure injured against movement to provide first aid.

11. **Rescuers going aloft should:**
    a. Wear hard hats (with chin stays down).
    b. Safety Harness.
    c. Self-Contained Breathing Apparatus (SCBA) (if environment requires).
    d. Take a coiled rope of sufficient length to reach the ground.
    e. Resuscitation equipment.
    f. Equipment should be attached to the rescuer freeing both hands for climbing.
    g. Two rescuers aloft at one time, at the most three.

12. **To raise / lower a patient where a stretcher cannot be utilized:**
    a. Tie a rescue knot onto the patient.
    b. Using two or three men on the lifeline, raise or lower the patient to a safe level.
    c. Use of a pulley directly above the opening will simplify the operation.
    d. Guy ropes can be used to provide a safer and more comfortable lift.

13. **Breathing Air Required**
    a. Due to air limitations of Self-Contained Breathing Apparatus (SCBA) all participants must be in
    b. a safe area within fifteen minutes.
    c. Once air to injured is accomplished, a secondary air supply must be in place within seven minutes as dictated by two people breathing on one twenty-minute Air Pak.
    d. Raising a SCBA for the injured will provide him with an air supply while being transferred.

14. **Post-Rescue Evaluation:**
    a. Conduct a debriefing session after the rescue to evaluate the effectiveness of the operation.
    b. Identify any areas for improvement and update the high angle rescue plan accordingly.

15. **Documentation:**
    a. Maintain detailed records of confined space entry permits, training sessions, and rescue drills.
    b. Document any incidents, near misses, or actual rescues for analysis and improvement.

The Emergency Response Team Coordinator, or designate ground leader, while directing the operation from the ground must be constantly aware of all signals from all Team Members and must coordinate these signals to ensure a safe rescue.

If unable to respond to the injured person in position medical responder will advise treatment advice until injured is brought to elevation and turned over to the medical responder.

As soon as the stretcher (with patient) has started its descent completely in control of the ground crew, the rescue crew aloft should be headed for a safe area, not waiting to retrieve the equipment left at the rescue level.

At the completion of the rescue (actual or practice) all of the equipment used must be inspected, cleaned, and restored to a serviceable condition. Care is to be taken that all hazards have been corrected before retrieving any equipment.

A post-incident debriefing will take place following all incidents and exercises to assess the response and determine learnings for continual performance improvement.

9.2.22 FLARING / VENTING

Flaring is the controlled burning of fuel or waste gas that takes place during production and processing. fuel or waste gas is ignited at the top of a flare stack, causing the characteristic flame associated with flaring. Some odours may be associated with flaring.

Venting is a controlled release of unburned gases into the atmosphere, such as natural gas or other hydrocarbon vapours, water vapour, or other gases. Venting may occur during operational processes and during maintenance activities. Odours may be associated with venting.

If an uncontrolled event of flaring and/or venting occurs, follow the below procedure:

1. **Activate Emergency Services:**
   a. Immediately notify Security through the site emergency number.
   b. Security will immediately contact ERT and emergency services (911) if required and provide them with the necessary information about the accident.
   c. Clearly communicate the location of the accident and any other relevant details.

2. **Assess the Situation**
   a. Ensure your own safety first. Ensure that all rescue team members wear appropriate PPE, including helmets, harnesses, gloves, and eye protection and respiratory protection.
   b. Determine the type and quantity of the leaked chemical.
   c. Identify the location and extent of the leak.
   d. Evaluate potential hazards to personnel, the environment, and surrounding areas.

3. **Establish an Incident Command:**
   a. The incident commander to manage the response efforts.

4. **Isolate and Evacuate:**
   a. Establish an exclusion zone around the accident site to prevent unauthorized access.
   b. If safe to do so, turn off pumps and close valves to stop product flow.
   c. Eliminate all sources of ignition.

5. **Rescue Team Deployment:**
   a. Deploy trained and equipped rescue team members to be on standby.
   b. Follow established communication protocols to coordinate the rescue efforts.

6. **Personal Protective Equipment (PPE):**
   a. Ensure that all personnel involved in the response wear appropriate PPE to protect against exposure to hazardous substances.

7. **Shelter in Place**
   a. If required, the shift supervisor should trigger a “shelter in place” alarm, all personnel to follow appropriate protocol(s).

8. **Additional resources**

a. Shift supervisor to notify security of any additional resource requirements.
b. Shift supervisor will give an All Clear when the emergency has been controlled.

9. **Monitoring:**
   a. Implement air and water monitoring to assess the extent of contamination and potential exposure risks.
   b. Continuously monitor the situation to adapt the response as needed.

10. **Documentation:**
    a. Keep detailed records of the incident, including actions taken, resources deployed, and communications.
    b. Document any injuries, exposures, or environmental impact.

11. **Reporting:**
    a. Report the incident to Environment Canada 1-800-563-9089.
    b. Provide any necessary documentation and information about the incident.

12. **Remediation:**
    a. Develop and implement a plan for cleaning up and remediating the affected area.
    b. Comply with regulatory requirements for reporting and cleanup.

13. **Media and Public Relations:**
    a. Designated Spokesperson: Designate a spokesperson to communicate with the media and address concerns from the public.
    b. Regular Updates: Provide regular updates to stakeholders, the public, and the media to ensure accurate information dissemination.

9.2.23 FAILURE OF INDUSTRIAL WATER SUPPLY

Water is supplied to the plant from the Town of Placentia municipal water supply. Water, after being treated to be suitable for the process will then be used in the production stream. The plant design includes a Fire Water Tank that is designed to contain sufficient water to support firefighting on site. As it is early in the design phase, tank capacities have yet to be determined. All tank capacities will meet NFPA 22 Standard for Water Tanks for Private Fire Protection requirements and address the need to deal with an ammonia release.

In the event that there is a loss of water supply, the plant will have to be shut down, isolated, and purged. The cause of the loss of water will have to be identified and the plant will remain shut-down until the cause of the failure is identified and corrected. Fire water will still be available during this investigation.

Emergency shut-down procedures in an ammonia processing plant are critical to ensuring the safety of personnel, protecting the environment, and preventing equipment damage. The loss of water in an ammonia plant can lead to potentially dangerous situations, including the formation of anhydrous ammonia, which is highly reactive and poses serious risks.

1. **Emergency Alarm Activation:**
   a. Upon detecting water loss or other critical parameters, activate the emergency alarm system to alert all personnel in the plant.

2. **Emergency Communication:**
   a. Establish communication with all relevant personnel, including control room operators, shift supervisors, and emergency response teams.
   b. Utilize communication channels such as radios, intercoms, and other established means to ensure rapid and widespread notification.

3. **Isolate Affected Area:**
   a. Quickly identify the affected area and isolate it from the rest of the plant.
   b. As per operating procedures close relevant valves and shut off equipment to contain the situation and prevent the spread of potential hazards.

4. **Activate Emergency Shutdown Systems:**
   a. Initiate the emergency shutdown systems to bring critical equipment to a safe state.
   b. Ensure that the emergency shutdown procedures are well-documented and understood by all operators.

5. **Evacuation Procedures:**
   a. If required implement evacuation procedures for personnel in the affected area and nearby zones.
   b. Personnel will travel to the assembly points outside to gather and await further instructions.

6. **Emergency Response Teams:**
   a. Mobilize emergency response teams to assess the situation, control any leaks, and mitigate potential hazards.

7. **Ventilation and Atmosphere Monitoring:**
   a. Implement ventilation strategies to disperse any released gases and prevent their accumulation.
   b. Continuously monitor the atmosphere for ammonia levels and other potential hazards.

8. **Coordination with Emergency Services:**
   a. Establish communication with local emergency services and provide them with necessary information about the situation.
   b. Collaborate with external agencies to enhance the effectiveness of the emergency response.

9. **Investigation and Reporting:**
   a. Conduct a thorough investigation into the cause of the water loss and the subsequent emergency.
   b. Document all events and actions taken during the emergency for regulatory reporting and internal analysis.

10. **System Restart Protocols:**
    a. Protocols for safely restarting the ammonia processing plant after the emergency has been contained and mitigated will be initiated.
    b. Ensure that all necessary checks and tests are performed before resuming normal operations.

9.2.24 SOCIAL DISTURBANCE

In the event of social disturbances developing or events arising on or around Site, Site Security will notify the Site Manager or designate.

- Security will secure all access gates. Access will be restricted to authorized personnel only.
- Security will monitor activities at gate locations and maintain regular status updates to supervision.
- The Site Manager will determine activation level of Emergency Response Plan.
- All outside assistance will be coordinated through the Site Manager or designate.
- All communication with media will be coordinated through the Site Manager or designate.
- Emergency Response Team (safety / medical, emergency personnel) will maintain readiness for any required response.

9.2.25 OFF-SITE EMERGENCY RESPONSE PROCEDURE

The purpose of the off-site emergency procedure is to establish response procedures for emergency situations that occur off-site during and as a direct result of development and construction of the Project.

The following is the response sequence in the event of an off-site emergency incident:

- Radio / phone contact is made with the Security for (medical / fire / rescue emergency personnel).
- Security personnel receiving the call will obtain information as to:
  - Nature of the emergency.
  - Number of persons involved.
  - Location; and
  - Any other information that might be required.
- Security receiving the call will advise the caller that assistance is on the way and to maintain control of the situation as best as possible. Receiver may also advise on actions that they can commence in the meantime, as well as to call back in a specified time period.
- Security Personnel receiving the call will notify the Emergency Coordinator to decide on what response is required.
- If required Emergency Coordinator and/or Security will contact Emergency Response Team Members by radio transmission.
- Emergency Response Team will arrive on the scene, make an assessment, and take appropriate actions.
- Each Emergency Response Team member will inform the EC of their arrival.
- Security will secure the gate, maintaining a clear access for emergency vehicles.
- Security will notify management and any additional Emergency Response.
- Off-Site Environmental Emergency will assist in the incident response if required.

- Emergency Response Team will arrive on the scene, make an assessment, and take appropriate actions.

9.2.26 FOREST FIRE

The purpose of the Forest Fire procedure is to establish an emergency response procedure for forest fire(s) incident situations that could develop on and off site during the development and construction of the Argentia Renewables Project.

Argentia Renewables mandates that contractors engaged in clear-cutting operations as part of the project construction must possess a comprehensive plan for forest fire prevention and response. All individuals working in, or around wooded areas are required to have a 20lb dry chemical extinguisher readily available for immediate use in the event of a fire.

Project staff upon discovering a fire will immediately call 1-866-709-3473.

When reporting, the following information will be provided:

- Name.
- Telephone or mobile number.
- Location, in as much detail as possible.
- Size of fire.
- Fuel type fire is burning in (i.e., timber, slash grass, etc.).
- Observed weather details.
- Wind direction and presence of gusts.
- Time of discovery.
- Distance to water supply.
- Potential danger to personnel and equipment.
- Action being taken.
- Additional resources required.

In the event the fire cause may be suspicious, note any people or vehicles in the area. The RCMP may require specific measures to be taken to preserve the scene for further investigation.

If there is a crew on site, the supervisor or most qualified person will ensure the safety of all personnel and will direct and supervise suppression activities until relieved by Forestry personnel. This person will:

- Ensure the rest of the crew is notified and cease operations.
- Maintain contact with emergency services and the Department of Forestry.
- Designate someone to document.
- How and when the fire originated (preserve the scene if arson is suspected).
- Time of discovery.
- Time initial suppression action was taken.
- Time remainder of crew arrived at the fire.
- Time equipment arrived or was set up (i.e., cats, pumps, etc.).

The crew must continue fire suppression action until no longer safe to do so or other assigned duties until relieved by DNR personnel.

Below is the suggested guideline for dealing with a forest fire:

1. **Early Detection and Monitoring:**
   a. Establish a robust fire detection system that includes lookout towers, aerial surveillance, and remote sensing technologies.
   b. Monitor weather conditions, including wind speed and direction, humidity, and temperature, to predict fire behavior.

2. **Emergency Communication:**
   a. Develop a comprehensive communication plan involving local authority, emergency services, and the public.

3. **Establish an emergency hotline for reporting fires promptly.**
   a. Utilize public notification systems, such as sirens, text alerts, and social media, to disseminate information quickly.

4. **Activate Emergency Response Team:**
   a. As soon as a fire is detected, activate the emergency response team, including firefighters, law enforcement, and emergency medical services.
   b. Ensure that all responders are well-trained in wildfire response and have the necessary personal protective equipment (PPE).

5. **Incident Command System (ICS):**
   a. Implement the Incident Command System to establish a clear chain of command and coordination among responding agencies.

6. **Evacuation Planning:**
   a. Develop evacuation plans for at-risk communities and communicate evacuation orders early.
   b. Coordinate with law enforcement for traffic control and public safety during evacuations.

7. **Resource Mobilization:**
   a. Request additional firefighting resources, including personnel, equipment, and aircraft, based on the severity of the fire.
   b. Collaborate with neighboring jurisdictions and agencies for mutual aid.

8. **Establish Fireline and Control Measures:**
   a. Identify and create firebreaks and containment lines to control the fire's spread.
   b. Use aerial resources, such as water-dropping helicopters and air tankers, to support ground operations.

9. **Community Outreach:**
   a. Keep the public informed about the fire's status, evacuation orders, and safety measures.
   b. Provide information on shelters, emergency services, and support for those affected.

10. **Recovery Planning:**
    a. Develop a recovery plan to address the aftermath of the fire, including rehabilitation of affected areas and support for displaced residents.
    b. Collaborate with local, state, and federal agencies to access resources for recovery efforts.

11. **Media and Public Relations:**
    a. Designated Spokesperson: Designate a spokesperson to communicate with the media and address concerns from the public.
    b. Regular Updates: Provide regular updates to stakeholders, the public, and the media to ensure accurate information dissemination.

12. **Investigation and Analysis:**
    a. Post-Incident Analysis: Conduct a thorough investigation to determine the cause of the fire or explosion.
    b. Lessons Learned: Identify lessons learned from the incident and incorporate them into safety protocols and training.

9.2.27 DISLODGING OF WIND TOWER OR TURBINE BLADE

Early detection is the best mitigation to prevent catastrophic failures by completing routine inspections. However, catastrophic failures can occur due to natural weather events.

In the event that a turbine or turbine blade suffers a catastrophic failure that piece of equipment is to be isolated and de-energized. The area must be cordoned off to prevent entry from untrained personnel and all stakeholders and local authorities notified.

Due to the size and weight of turbines/turbine blades, mobile cranes will be required to either repair or remove the damaged equipment.

The following are steps to be taken when dealing with this type of emergency:

1. **Notification and Coordination:**
    a. Notify relevant authorities, including local emergency services and utility companies, about the dislodging operation.
    b. Coordinate with all stakeholders, such as landowners, maintenance teams, and regulatory agencies.

2. **Isolation and Lockout:**
    a. Isolate the wind turbine or tower from the power grid to prevent electrical accidents.
    b. Implement lockout/tagout procedures to ensure that the turbine is de-energized and cannot be accidentally restarted during the dislodging process.

3. **Equipment and Tools:**

a. Gather the necessary equipment and tools required for the dislodging operation. This may include cranes, winches, rigging equipment, and specialized tools.
b. Ensure that all equipment is in good working condition and properly certified.

4. **Safety Briefing:**
   a. Conduct a comprehensive safety briefing for all personnel involved in the dislodging operation.
   b. Emphasize the importance of following safety protocols, using personal protective equipment (PPE), and communicating effectively.

5. **Preparation of the Site:**
   a. Clear the area around the wind turbine to create a safe working zone.
   b. Erect safety barriers and warning signs to restrict access to the dislodging site.

6. **Secure the Blade or Tower:**
   a. Use appropriate rigging equipment to secure the damaged blade or tower in place.
   b. If dealing with a tower, ensure that it is properly supported to prevent any collapse.

7. **Disassembly and Removal:**
   a. If applicable, disassemble components of the turbine or blade to facilitate removal.
   b. Use cranes or other lifting equipment to carefully lift and dislodge the blade or tower from its mounting.

8. **Transportation and Storage:**
   a. Safely transport the dislodged component to a designated storage area.
   b. Ensure proper documentation and labeling for identification purposes.

9. **Site Cleanup and Restoration:**
   a. Remove any debris or materials from the dislodging site.
   b. Conduct a final safety check to ensure that the area is secure.

10. **Inspection and Documentation:**
    a. Inspect the dislodged component for further damage and document any findings.
    b. Provide a detailed report of the dislodging operation, including photographs and observations.

11. **Inspection and Documentation:**
    a. Inspect the dislodged component for further damage and document any findings.
    b. Provide a detailed report of the dislodging operation, including photographs and observations.

9.2.28 FIRE IN A WIND TURBINE

When working in the nacelle, technicians shall always wear the appropriate PPE and carry an AED and self-rescue gear. If either one or both wind technicians are up tower when a fire or explosion occurs, they

should only contact emergency services through security. If there are no technicians at the bottom of the turbine, the technician up tower should report the location of the fire, potential cause, and any injuries to the Site Manager.

If the fire is small and at the beginning phase and if the technician is trained in using a fire extinguisher, they should attempt to extinguish the fire for as long as it is safe to do so. If the fire is growing rapidly, the technician should exit the nacelle immediately using the ladder. If the ladder is inaccessible, they should exit onto the roof of the nacelle and use an approved (Tractel or equivalent) safety harness or personal self-rescue device to rappel off the turbine; they shall not use the hoist to evacuate the tower during a fire or explosion. When evacuating, the technician should close all doors and hatches if safe to do so.

Dealing with a fire or explosion in a wind turbine requires a systematic and well-coordinated response to ensure the safety of personnel and the surrounding environment. The following procedure outlines general steps to be taken in the event of a fire or explosion in a wind turbine.

Immediate Response:

1. **Notification and Coordination:**
   a. Notify security to activate ERT. Security will activate 911 services upon request by Incident Commander.

2. **Evacuation:**
   a. Evacuation Plan: Implement the pre-established evacuation plan, ensuring that all personnel are aware of escape routes and assembly points.
   b. Assembly Points: Designate assembly points at a safe distance (minimum 250m) from the wind turbine to account for all personnel.

3. **Isolation and Lockout:**
   a. Isolate the wind turbine or tower from the power grid to prevent electrical accidents.
   b. Implement lockout/tagout procedures to ensure that the turbine is de-energized and cannot be accidentally restarted during the dislodging process.

4. **Equipment and Tools:**
   a. Gather the necessary equipment and tools required for the fire/explosion operation. This may include cranes, winches, rigging equipment, and specialized tools.
   b. Ensure that all equipment is in good working condition and properly certified.

5. **Safety Briefing:**
   a. Conduct a comprehensive safety briefing for all personnel involved in the fire/explosion operation.
   b. Emphasize the importance of following safety protocols, using personal protective equipment (PPE), and communicating effectively.

6. **Preparation of the Site:**
   a. Clear the area around the wind turbine to create a safe working zone.
   b. Erect safety barriers and warning signs to restrict access to the fire/explosion site.

7. **Fire Suppression:**
   a. Fire Extinguishers: If the fire is small and manageable, attempt to use portable fire extinguishers that are appropriate for the type of fire (e.g., electrical, chemical).
   b. Fire Suppression Systems: Activate any built-in fire suppression systems that may be installed in the turbine.

8. **External Assistance:**
   a. Emergency Services: Provide emergency services with detailed information about the location, size, and nature of the incident.
   b. Fire Department Liaison: Establish communication with the local fire department to guide them to the turbine site.

9. **Monitoring:**
   a. Remote Monitoring: Utilize remote monitoring systems to assess the situation and provide real-time information to emergency responders.
   b. Wind Direction Monitoring: Monitor wind direction to predict the potential spread of smoke or fire.

10. **Media and Public Relations:**
    a. Designated Spokesperson: Designate a spokesperson to communicate with the media and address concerns from the public.
    b. Regular Updates: Provide regular updates to stakeholders, the public, and the media to ensure accurate information dissemination.

11. **Investigation and Analysis:**
    a. Post-Incident Analysis: Conduct a thorough investigation to determine the cause of the fire or explosion.
    b. Lessons Learned: Identify lessons learned from the incident and incorporate them into safety protocols and training.

12. **Documentation:**
    a. Incident Report: Document the incident thoroughly, including actions taken, lessons learned, and recommendations for future improvements.
    b. Regulatory Reporting: Comply with any regulatory requirements for reporting incidents.

13. **Recovery:**
    a. Recovery Plan: Develop a recovery plan to assess the damage, repair or replace equipment, and restore the wind turbine to normal operations.
    b. Post-Incident Training: Conduct training sessions based on the lessons learned to enhance the preparedness of personnel for future incidents.

9.2.29 WIND TOWER RESCUE

Rescuing someone from a wind tower is a complex and potentially dangerous operation that requires specialized training and equipment. It is crucial to follow safety protocols and work with trained professionals.

For additional information on working from heights refer to Pattern SMS 511 Working at Heights Procedure. The following is a general outline for a wind tower rescue procedure.

1. **Activate Emergency Services:**
   a. Immediately notify Security through the site emergency number.
   b. Security will immediately contact ERT and emergency services (911) if required and provide them with the necessary information about the accident / incident.
   c. Clearly communicate the location of the accident and any other relevant details.

2. **Risk Assessment and Planning:**
   a. Conduct a thorough risk assessment to identify potential hazards associated with the wind tower rescue.
   b. Develop a detailed plan that includes safety measures, equipment requirements, and a timeline for the wind tower rescue operation.
   c. Immediately notify Security through the site emergency number.
   d. Security will immediately contact ERT and emergency services (911) if required and provide them with the necessary information about the accident.
   e. Clearly communicate the location of the accident and any other relevant details.

3. **Scene Assessment:**
   a. Ensure the safety of the rescue team by assessing the wind conditions, weather, and other potential hazards.
   b. Establish communication with the person in distress if possible.
   c. Identify the location of the person on the wind tower and assess the condition of the tower structure.

4. **Notification and Coordination:**
   a. Designate a competent person as the incident commander to manage the response efforts.
   b. Notify relevant authorities, including local emergency services and utility companies, about the wind tower rescue operation.
   c. Coordinate with all stakeholders, such as landowners, maintenance teams, and regulatory agencies.

5. **Isolation and Lockout:**
   a. Isolate the wind turbine or tower from the power grid to prevent electrical accidents.
   b. Implement lockout/tagout procedures to ensure that the turbine is de-energized and cannot be accidentally restarted during the rescue process.

6. **Equipment and Tools:**

a. Gather the necessary equipment and tools required for the wind tower rescue operation. This may include cranes, winches, rigging equipment, and specialized tools.
b. Ensure that all equipment is in good working condition and properly certified.

7. **Personal Protective Equipment (PPE):**
   a. Ensure that all rescue team members are equipped with appropriate PPE, including fall protection gear, helmets, gloves, and safety glasses.

8. **Rescue Team Deployment:**
   a. Deploy trained and equipped rescue team members to the location of the victim.
   b. Follow established communication protocols to coordinate the rescue efforts.

9. **Victim Stabilization:**
   a. Assess the condition of the victim and provide immediate medical attention if necessary.
   b. Stabilize the victim to prevent further injury during the rescue process.
   c. If the emergency is a fall in which the victim is suspended by his/her harness from the hub or top of the nacelle, the technician up-tower with the victim will assist according to their training. The Tractel device (or equivalent) will be anchored to the nacelle and connected to the lanyard of the victim. The victim will be raised with the Tractel until tension is released from the lanyard so that the lanyard can be disconnected from its anchor point on the nacelle or hub. The lanyard will still be connected to the Tractel. The victim will then be lowered to the ground by the up-tower technician. The down-tower rescue crew will assist the victim as he or she reaches the ground.
   d. An injured person inside the nacelle may be lowered down the tower ladder using the Tractel according to training procedures. If the victim needs to be stabilized, wait until the Fire Department or Emergency Medical Services arrives to stabilize the victim with a backboard. The backboard will be lowered with the Tractel. Technician or emergency personnel will go down below the backboard to make sure it does not hang up on obstructions on the way down. Upon reaching the first deck, assistance will be required from ground personnel to lower the victim to the control deck.

10. **Anchor Systems:**
    a. Identify secure anchor points for the rescue system, such as strong and stable structures.
    b. Rig anchor systems using certified equipment, ensuring redundancy for added safety.

11. **Rescue Equipment:**
    a. Use specialized rescue equipment such as ropes, pulleys, harnesses, and descenders.
    b. Ensure that all equipment is in good working order and has been inspected regularly.
    c. Rigging and Lowering Systems:
    d. Set up rigging systems for lowering or raising the victim, depending on the situation.
    e. Use controlled descent devices to ensure a safe and controlled lowering process.

12. **Rescue Operation:**
    a. Execute the planned rescue operation with precision and caution.
    b. Maintain constant communication between team members and the victim during the rescue.

13. **When lowering / raising the injured:**
    a. Wherever possible a stretcher should be used.
    b. A suspected injury should be treated as an actual injury.
    c. Injured will remain on stretcher until at hospital.
    d. If treatment required during raising / lowering, secure injured against movement to provide first aid.

14. **Rescuers going aloft should:**
    a. Wear hard hats (with chin stays down).
    b. Safety Harness.
    c. Self-Contained Breathing Apparatus (SCBA) (if environment requires).
    d. Take a coiled rope of sufficient length to reach the ground.
    e. Resuscitation equipment.
    f. Equipment should be attached to the rescuer freeing both hands for climbing.
    g. Two rescuers aloft at one time, at the most three.

15. **To raise / lower a patient where a stretcher cannot be utilized:**
    a. Tie a rescue knot onto the patient.
    b. Using two or three men on the lifeline, raise or lower the patient to a safe level.
    c. Use of a pulley directly above the opening will simplify the operation.
    d. Guy ropes can be used to provide a safer and more comfortable lift.

16. **Breathing Air Required**
    a. Due to air limitations of Self-Contained Breathing Apparatus (SCBA) all participants must be in
    b. a safe area within fifteen minutes.
    c. Once air to injured is accomplished, a secondary air supply must be in place within seven minutes as dictated by two people breathing on one twenty-minute Air Pak.
    d. Raising a SCBA for the injured will provide him with an air supply while being transferred.

17. **Safety Briefing:**
    a. Conduct a comprehensive safety briefing for all personnel involved in the rescue operation.
    b. Emphasize the importance of following safety protocols, using personal protective equipment (PPE), and communicating effectively.

18. **Post-Rescue Evaluation:**
    a. Conduct a debriefing session after the rescue to evaluate the effectiveness of the operation.
    b. Identify any areas for improvement and update the high angle rescue plan accordingly.
19. **Preparation of the Site:**
    a. Clear the area around the wind turbine to create a safe working zone.
    b. Erect safety barriers and warning signs to restrict access to the rescue site.

20. **Rope Access Systems:**

a. Establish a secure rope access system, using specialized equipment designed for high-angle rescue operations.
b. Ensure that all ropes, harnesses, and anchor points are inspected and meet safety standards.

21. **Ascend to the Person in Distress:**
    a. Ascend/descend the wind tower using proper climbing techniques and equipment.
    b. Communicate with the person in distress to provide reassurance and gather information about their condition.

22. **Casualty Assessment and Stabilization:**
    a. Assess the condition of the person in distress and provide any necessary first aid.
    b. Stabilize the person using specialized rescue techniques.

23. **Evacuation:**
    a. Determine the most appropriate method of evacuation, considering the person's condition, the tower's structure, and the available equipment.
    b. Lower the person safely to the ground using the established rope access system.

24. **Post-Rescue Procedures:**
    a. Provide medical attention to the rescued person on the ground.
    b. Debrief the rescue team to discuss the operation, identify any issues, and implement improvements for future rescues.

25. **Media and Public Relations:**
    a. Designated Spokesperson: Designate a spokesperson to communicate with the media and address concerns from the public.
    b. Regular Updates: Provide regular updates to stakeholders, the public, and the media to ensure accurate information dissemination.

26. **Investigation and Analysis:**
    a. Post-Incident Analysis: Conduct a thorough investigation to determine the cause of the fire or explosion.
    b. Lessons Learned: Identify lessons learned from the incident and incorporate them into safety protocols and training.

The Emergency Response Team Coordinator, or designate ground leader, while directing the operation from the ground must be constantly aware of all signals from all Team Members and must coordinate these signals to ensure a safe rescue. If unable to respond to the injured person in position medical responder will advise treatment advice until injured is brought to elevation and turned over to the medical responder.

As soon as the stretcher (with patient) has started its descent completely in control of the ground crew, the rescue crew aloft should be headed for a safe area, not waiting to retrieve the equipment left at the rescue level.

At the completion of the rescue (actual or practice) all of the equipment used must be inspected, cleaned, and restored to a serviceable condition. Care is to be taken that all hazards have been corrected before retrieving any equipment.

A post-incident debriefing will take place following all incidents and exercises to assess the response and determine learnings for continual performance improvement.

9.2.30 SELF-RESCUE FROM A WIND TOWER

Self-rescue from a wind tower is a critical skill that individuals working in the wind energy industry should be familiar with. All employees ascending a windmill will be trained in the self-recue procedure. If the ladder is inaccessible, they should exit onto the roof of the nacelle and use a Tractel or personal self-rescue device to rappel off the turbine. For additional details refer to the manufacturer's instructions on how to use rescue equipment. Below is a general guideline for self-rescue from a wind tower:

1. **Stay Calm:**
   a. Take a deep breath and try to remain calm.
   b. Assess your situation and ensure that you are not in immediate danger.

2. **Communication:**
   a. Use your communication device (e.g., radio or cellphone) to notify Security and your supervisor about the situation.
   b. Clearly communicate your location, the nature of the problem, and your intention to initiate self-rescue.
   c. Personal Protective Equipment (PPE):
   d. Ensure that you are wearing all necessary PPE, including a harness, helmet, and any other required safety gear.

3. **Check Anchor Points:**
   a. Verify the integrity of your anchor points, such as the safety line attached to your harness. If possible, secure a backup anchor point if you have concerns about the existing one.

4. **Assess the Descent Path:**
   a. Look for a safe descent path down the tower. This could include the ladder, or any other designated route.

5. **Equipment Inspection:**
   a. Check your self-rescue equipment, such as a descender or self-rescue device, to ensure it is in proper working condition.

6. **Attach Self-Rescue Device:**
   a. If equipped, attach your self-rescue device to the anchor point on the tower and connect it to your harness. Follow the manufacturer's instructions for proper usage.

7. **Descend Safely:**
   a. Begin your descent using the self-rescue device, maintaining a controlled and steady pace.

b. Keep your body positioned appropriately and be mindful of your surroundings.

8. **Constant Communication:**
   a. Continue to communicate your progress with your team or supervisor using your communication device.

9. **Ground Assistance:**
   a. Coordinate with your team on the ground to ensure that someone is ready to assist you upon reaching the ground.

10. **Post-Rescue Evaluation:**
    a. Once safely on the ground, participate in a post-rescue evaluation with your team to discuss the incident, identify any lessons learned, and update safety protocols if necessary.

9.2.31 ROADBLOCK OR LACK OF ACCESS

Upon notification of a roadblock or impeded site access, Argentia Renewables Site Management shall suspend site operations until access to/from site is available and unobstructed.

Security shall directly contact Argentia Renewables Site Management at any time where there is reason to believe that access to the site is hindered and may cause problems in the event of a situation requiring emergency response.

9.2.32 BOMB THREATS

The purpose of this procedure is to provide guidelines for employees and management to follow in the event of a bomb threat, ensuring the safety and security of all personnel and assets within the workplace.

1. **Immediate Response:**
   a. Stay Calm:
      i. In the event of a bomb threat, remain calm and focused.
      ii. Avoid spreading panic among colleagues.
   b. Notification:
      i. If you receive a bomb threat, call emergency services immediately (911) and inform them of the threat.
   c. Notify Management:
      i. Supervisor or manager about the bomb threat.
   d. Evacuation:
      i. If instructed to evacuate by emergency services or management, follow the designated evacuation routes.
      ii. Assist colleagues with disabilities or special needs during the evacuation.

2. **Recognition of a Bomb Threat:**
   a. Employees who receive a bomb threat via phone call, email, or any other means should stay calm and avoid engaging the caller in unnecessary conversation.

b. If a bomb threat is received via phone call, the recipient should follow a predefined set of questions to gather essential information while remaining calm and courteous. Questions may include:
    i. Have the person taking the call write down exactly what was said.
    ii. When is the bomb supposed to explode?
    iii. Where is the bomb located?
    iv. What does the bomb look like?
    v. Why was the bomb placed?
    vi. Take note of details such as the caller's voice, background noises, and any specific information provided by the caller.
c. If a bomb threat is received in a Written Threats:
    i. If a written bomb threat is discovered, employees should avoid handling the document unnecessarily. Preserve it for law enforcement analysis and notify management immediately.
    ii. Promptly report the threat to the designated authority or security personnel.
    iii. If the threat is written, put the letter and envelope in a plastic cover before copying, faxing or further handling.

3. Evacuation Procedures:

a. Follow Evacuation Routes.
b. Evacuate using the designated emergency exits and assembly points.
c. Avoid using elevators during evacuation.
d. Account for Personnel.
e. Managers and designated personnel must ensure a headcount at the assembly point to account for all employees.
f. Do Not Return Until Cleared:
g. Do not re-enter the building until emergency services or management declares it safe.

4. Search and Inspection:

a. Security personnel, in coordination with law enforcement, will conduct a thorough search of the premises.
b. Employees should not attempt to search for suspicious items on their own.
c. If a suspicious object is discovered, maintain a safe distance, and report it to the authorities immediately.

5. Communication Protocols:

a. Information Sharing:
    i. Avoid spreading rumors or unverified information.
    ii. Only share information from official sources.
b. Media Relations:
    i. Designate a spokesperson for communicating with the media.
    ii. Refrain from providing details that could compromise security.

6. Suspicious Packages:

a. Do Not Touch:
    i. Do not touch or tamper with any suspicious packages or objects.

ii. Report any such items to management or security personnel immediately.

b. Isolate the Area:
   i. If possible, cordon off the area around a suspicious package and keep others away.

c. Wait for Experts:
   i. Allow bomb disposal experts or law enforcement to assess and handle the situation.

7. Post-Incident Actions:

a. Debriefing:
   i. Conduct a debriefing session to discuss the incident and identify areas for improvement.

b. Review Procedures:
   i. Regularly review and update bomb threat response procedures to address any gaps or changes in the workplace environment.

c. Counseling and Support:
   i. Provide counseling and support services for employees affected by the incident.

d. Documentation:
   i. Document the details of the incident, response actions taken, and lessons learned for future reference.

9.2.32.1 BOMB THREAT CHECKLIST

BOMB AND SABOTAGE THREAT REPORT FORM

Time: _____ Date: _____ Number at which: _____ call is received

Questions to Ask:

1. When is the bomb going to explode?
2. Where is it right now?
3. What does it look like?
4. What kind of bomb is it?
5. What will cause it to explode?
6. Did you place the bomb?
7. Why?
8. What is your address?
9. What is your name?
10. Exact wording of the threat:

_____

_____

_____

_____

Sex: _____ Age: _____ Accent: _____

Caller's Voice (check all that apply):

Emotion	Calm	Excited	Angry	Crying	Laughing
Volume	Soft	Normal	Loud		

Speed	Slow	Normal	Rapid		
Tone	Deep	Normal	High	Nasal	
Breathing	Deep	Normal	Shallow	Heavy	
Impediments	Lisp	Stutter	Slurred	Raspy	Cough
Language	Foul	Educated	Ragged	Irrational	Incoherent
Message	Taped	Read by threat maker			
Familiarity	Unfamiliar	Disguised	Familiar		
Other:					

Background Noises (check all that apply):

Clear	Static	Local	Cellular	Long Distance
Music	Voices	Animals	Motor	PA System
Street	Factory	Office	House	Booth
Other:				

9.2.33 DANGER POSED BY DISTRAUGHT PERSON PROCEDURE

Dangers or hazards associated with dealing with a distraught person can be very significant and put individuals at risk. The hazards are real and must be taken seriously and should be classified as follows:

Below are guidelines to follow when dealing with a distraught person:

1. **Stay Calm:**
   a. Remain calm and composed to create a stable environment.
   b. Control your own emotions and reactions, as your demeanor will influence the distressed person.

2. **Find a Private Space:**
   a. If possible, move to a quiet and private area to ensure confidentiality.
   b. Respect the person's privacy and avoid discussing sensitive matters in open or crowded spaces.

3. **Express Empathy:**
   a. Begin the conversation by expressing empathy and concern for the person's well-being.
   b. Use open body language, maintain eye contact, and speak in a gentle tone to convey your genuine care.

4. **Listen Actively:**
   a. Allow the person to express their feelings and thoughts without interruption.
   b. Use reflective listening techniques, such as summarizing and paraphrasing, to demonstrate that you understand their perspective.

5. **Avoid Judgment:**
   a. Refrain from making judgments or offering immediate solutions.
   b. Focus on validating their emotions and experiences, creating a non-judgmental and supportive atmosphere.

6. **Ask Open-Ended Questions:**
   a. Encourage the person to share more about their feelings by asking open-ended questions.
   b. Avoid yes/no questions, as they may not provide the opportunity for the person to express themselves fully.

7. **Offer Support:**
   a. Communicate your willingness to support and assist in finding a solution.
   b. Ask if there's anything specific, they need or if there are resources that can help.

8. **Explore Solutions Together:**
   a. Collaborate on identifying potential solutions or coping strategies.
   b. Avoid imposing your own solutions; instead, work together to find options that align with the person's preferences and needs.

9. **Refer to Resources:**
    a. If appropriate, provide information about available workplace resources, such as counseling services, Employee Assistance Programs (EAP), or HR support.

10. **Follow Up:**
    a. Schedule a follow-up meeting to check on their well-being and see how they are progressing.
    b. Reassure them that it's okay to reach out if they need further assistance or just someone to talk to.

11. **Document the Conversation (if necessary):**
    a. Depending on the severity of the situation, document the conversation for future reference, especially if it involves workplace policies or potential interventions.

12. **Involve HR or Management (if needed):**
    a. If the situation requires further attention or intervention, involve HR or management personnel who are trained to handle such issues.

9.2.34 THREAT AGAINST PERSON PROCEDURE

The hazards associated with dealing with threats against a person can vary dependent upon the circumstances. The following is a guideline to manage the safety of the person(s) who are subjected to threats.

1. **Prevention:**
    a. Establish a clear code of conduct: Clearly define acceptable behavior in the workplace and communicate it to all employees.
    b. Conduct regular training: Provide employees with training on conflict resolution, stress management, and identifying potential warning signs.
    c. Implement a reporting system: Encourage employees to report any concerns or suspicious behavior promptly.

2. **Threat Assessment:**
    a. Designate a threat assessment team: Form a team composed of HR representatives, security personnel, and, if necessary, mental health professionals.
    b. Investigate reported threats: Thoroughly investigate any reported threats, taking into account the context, history, and credibility of the information.

3. **Immediate Response:**
    a. Ensure immediate safety: If an imminent threat is identified, take immediate steps to protect the potential victim and others in the vicinity.
    b. If personnel receive an injury, refer to the "Injury Accident or Medical Emergency" section in this document.

c. If the threat is of a direct personal nature and you are unable to avoid the situation or call for help, talk calmly to the person, and try to keep him or her as calm as possible.
d. Security if required, will ensure that local law enforcement has been contacted. Tell them whether the distraught person is armed, how many people are involved in the situation, and if anyone is injured. Isolate the site and evacuate as many people as possible from the immediate area.
e. Management if involved will observe the facts, assess the situation, and get employees away from any immediate danger. Managers will take whatever steps to reduce or eliminate the risks without putting anyone in danger. If there is a confrontation, try to calm the situation or disengage from the confrontation.
f. Involve law enforcement: If necessary, contact local law enforcement and provide them with all relevant information.

4. **Communication:**
   a. Notify the affected individual: If a credible threat is identified, inform the potential victim discreetly and provide guidance on personal safety measures.
   b. Communicate with employees: Keep employees informed about the situation to the extent that it does not compromise safety or security.

5. **Employee Support:**
   a. Offer counseling services: Provide affected individuals with access to counseling services to help them cope with the emotional impact of the threat.
   b. Encourage employee assistance programs: Promote the use of employee assistance programs for those experiencing stress or personal challenges.

6. **Restraining Orders and Legal Measures:**
   a. Pursue legal action if necessary: If the threat is criminal in nature, work with law enforcement to pursue restraining orders or legal measures to protect the individual.

7. **Workplace Restructuring:**
   a. Consider changes to work arrangements: If necessary, explore options such as changing work schedules, locations, or responsibilities to ensure the safety of the affected individual.

8. **Documentation:**
   a. Keep thorough records: Document all actions taken, communications, and investigations related to the threat to establish a clear trail of events.

9. **Continuous Monitoring:**
   a. Continue threat monitoring: Regularly reassess the situation and monitor for any signs of ongoing threats or concerns.

9.2.35 MEDIA INCIDENT PROCEDURE

The concerns associated with dealing with media can vary dependent upon the circumstances. The following is a guideline to manage the safety persons and company reputation in the event of a media incident.

1. **Identify the Situation:**
   a. Quickly assess the nature and scope of the media event. Determine whether it's a rumor, misinformation, or a legitimate issue that needs addressing.
   b. Security personnel are not to allow unauthorized media representatives access to the site of an emergency. Simply state that site access has been controlled as a safety consideration as a matter of company policy.

2. **Activate Crisis Communication Team:**
   a. Activate the crisis communication team. This team consists of key stakeholders, including representatives from public relations, legal, human resources, and senior management.

3. **Gather Information:**
   a. Collect all available information related to the media event. Identify the source, context, and potential impact. This will help in formulating an appropriate response.

4. **Legal Consultation:**
   a. Consult with the Argentia Renewables legal team to understand the legal implications of the situation. Determine the accuracy of the information and assess potential legal risks.

5. **Internal Communication:**
   a. Communicate with employees promptly and transparently. Provide accurate information about the situation and reassure them that the organization is actively addressing the issue.

6. **Media Monitoring:**
   a. The ECC will continuously monitor media channels for coverage and public sentiment. This will help in adjusting our communication strategy as the situation evolves.

7. **Select Spokespersons:**
   a. Only official spokespersons who are trained to handle media inquiries will give a media interview. Ensure they are well-prepared, confident, and have a thorough understanding of the situation.

8. **Craft a Unified Message:**
   a. Develop a clear and consistent message that addresses the issue, communicates Argentia Renewables stance, and outlines any corrective actions being taken. Ensure that this message aligns with your company values.
   b. When necessary, the management representative may give, or issue written statements to the media which only:

- Confirm what has happened.
- Express the company's genuine concern and state the safety record for the operation (if appropriate).
- Do NOT speculate about the cause of the emergency, even if you feel you know what it was.

c. Maintain a record of all contacts with the media.
d. Local contact with the media in any emergency must be directed through the management team. It is very important that all levels of the company coordinate their statements and interaction with the media in an emergency. No one else should make statements without this clearance.

9. **Media Response:**
   a. Coordinate with the designated spokespersons to respond to media inquiries. Stick to the prepared message and avoid speculation or unverified information.
   b. In all interactions with the media, do not let an adversarial relationship develop. Be polite and cooperative, within the above guidelines and policy.

10. **Social Media Management:**
    a. Actively manage your organization's social media accounts to address public concerns, correct misinformation, and provide real-time updates. Consider temporarily disabling comments if necessary.

11. **Engage with Stakeholders:**
    a. Reach out to key stakeholders, such as clients, partners, and investors, to keep them informed and address any concerns they may have.

12. **Post-Event Evaluation:**
    a. After the situation has been addressed, conduct a thorough post-event evaluation. Identify lessons learned and areas for improvement in crisis communication strategies.

13. **Implement Corrective Measures:**
    a. If the media event highlighted any internal issues, take the necessary steps to address and rectify them. This may involve policy changes, employee training, or other corrective measures.

14. **Monitor Aftermath:**
    a. Keep a close eye on the aftermath of the media event. Continue to monitor media coverage and public sentiment to ensure that the organization's reputation is being rebuilt positively.

9.2.36 UNAUTHORIZED OR SUSPICIOUS PERSON IN THE AREA

The concerns associated with dealing with unauthorized or suspicious person(s) can vary dependent upon the circumstances. The following is a guideline to manage the safety of the employees and property in the event of the presence of an unauthorized or suspicious person(s).

1. **Identification of Unauthorized or Suspicious Persons:**
   a. Employees should be trained to recognize signs of unauthorized or suspicious persons, such as individuals without proper identification, unfamiliar faces, or those behaving unusually.

2. **Reporting:**
   a. If an employee identifies someone unauthorized or suspicious, they should immediately report it to the designated authority or security personnel.
   b. If you encounter someone you do not recognize:
      - Ask politely, "May I help you?"
      - Verify their identity and purpose for being there.
      - Remain calm and do not become adversarial.
   c. Do not try to remove the person from the premises yourself.
   d. Note the person's description (height, weight, complexion, dress, etc.).
   e. If fellow employees encounter someone none of you recognize, contact supervision to determine if the person is authorized.
   f. Take note of the person's movements and which direction they go on site or in the building.
   g. Report the person immediately, if not already done so, to Supervision and/or Security.

3. **Stay Calm and Observant:**
   a. Instruct employees not to confront the person directly but to stay calm and observe from a safe distance.
   b. Note any distinctive features, clothing, or accessories that may help security personnel identify the individual later.

4. **Security Response:**
   a. Security personnel or designated authorities should respond promptly to the report.
   b. Use security cameras to monitor the person's movements and provide additional information.

5. **Assessment:**
   a. The responding personnel should assess the situation to determine the level of threat and take appropriate action.
   b. If the person is non-threatening, security may approach and ask for identification. If the person refuses or cannot provide proper identification, further steps may be necessary.

6. **Escorting the Person:**
   a. If the person is deemed suspicious or unauthorized, security personnel should escort them away from the work area.

b. The person may be asked to wait in a designated area while their identity and purpose are verified.

7. **Verification:**
   a. Verify the person's identity and purpose for being in the work area.
   b. This may involve checking identification, contacting relevant departments, or using other verification methods.

8. **Involving Law Enforcement:**
   a. If the situation escalates or the person's intentions are unclear, involve law enforcement according to established protocols.

9. **Documentation:**
   a. Keep a record of the incident, including the individual's details, actions taken, and any communication with law enforcement.

9.2.37 ENERGY TRANSMISSION FAILURE

A power failure may occur as a result of electrical outages, plumbing failure/flooding, gas leaks, steam line breaks, ventilation problems, elevator failures, etc. For your personal safety, in the event of a utility failure:

a. Immediately notify Supervision.
b. If the building must be evacuated, follow the building evacuation instructions.
c. Unplug all electrical equipment (including computers) and turn off light switches.
d. Use a flashlight: Do not light candles or use other kinds of flames for lighting.
e. Elevators:

If passengers are trapped in an elevator, advise them to stay calm and tell them you are getting help.

If it is safe for you to stay in the building, stay near the passengers until assistance arrives.

a. If you are trapped in an elevator, help will be there soon:
   - Use the Call Button of Phone to call for help.
   - Do not try to climb out or exit the elevator without assistance.

When power is lost;

- Power Company must be contacted immediately to determine the length of time required for restoring power.
- Turn off all electrical.
- Operations' personnel will execute standard operating procedure for shutting down ammonia process.
- Operators should continue to make rounds in the process areas. The equipment must continue to be monitored for leaks and any potential problems that may occur in an extended power outage.
- Operators will give special attention to sumps, drains and any other systems that can gravity fill.
- Keep people in your area calm. Tell them to wait for instructions. Supervisors shall ensure all workers under their Control are accounted for.

- In the event of an evacuation, remind people to be extra cautious if conditions along the evacuation route to the Muster Station are dark.
- Assess the situation and determine if the power outage was caused by an emergency or an incident.
- If the situation poses a risk to workers in the facility decide whether an evacuation is warranted.
- Ensure someone has been assigned to check / repair the generators such that they are ready to operate when needed.
- Before starting the generator plant, ensure all safeguards are in place and all work permits re-issued.
- Assess any damage to site, equipment, or environment.

Maintain the following preparations in advance:

- Make sure all emergency lighting is working.
- Make sure the radio communications are kept in good repair.
- Make sure you have access to working flashlights in each area.

For an extended power outage, the following time constraints have been identified:

- After one (1) hour, the Main Construction Office and the computer systems will not be functional.
- After four (4) hours, the phone systems will not be functional.

10 OTHER INFORMATION

10.1 MARSEC LEVEL CHANGES

The Argentia Renewables jetty normal security level operation occurs at a Marsec 1. However, the Federal Government, through Transport Canada, may direct Argentia Renewables to increase its security level, based on information of perceived or real threats. Threats that result in an increase in Marsec (Marine Security) can be localized to our facility, the region, or to the entire country. Furthermore, once a MARSEC change has been directed, only Transport Canada may lower the level of security. Argentia Renewables will remain at the prescribed Marsec level until instructed to change.

Increases in Security from MARSEC 1 to MARSEC 2 will include (but not limited to) the following:

- Increased security patrols by guards throughout the facility.
- Increased spot checks of vehicles accessing egressing the facility.
- Movement of trash containers from perimeter fence lines/access points.
- All mail closely examined.
- Inspection of all buildings.
- All ship gangways attended by security.

Increases in Security from MARSEC 2 to MARSEC 3 will include (but not limited to) the following:

- Further increases in security patrols by guards throughout the facility.
- Restriction of non-essential vehicles onto the site.
- Movement of trash containers from perimeter fence lines/access points.
- All mail closely examined; packages not expected will be refused.
- Inspection, including closure of all buildings.
- Restriction of all ship's crew onto facility.
- Restricted access of all non-essential persons onto to the site.
- In rare cases the ship may be ordered to depart immediately from the port.

10.2 MUTUAL AID

During the construction of the processing facility, the Town of Placentia will extend fire protection services throughout the initial construction phase until the facility achieves self-sufficiency in emergency response.

Argentia Renewables will supply any specialized equipment or training required by the Placentia Fire Department for Ammonia site operations. Regular site visits will be arranged for members of the Placentia Fire Department to familiarize themselves with the site layout and emergency protocols.

Once the Main Plant Site Emergency Response System is established and tested, mutual aid agreements will be established with other participants in the regional assistance program. These agreements aim to enhance the collective capability of all involved parties to respond efficiently to various emergencies, including but not limited to fires, chemical spills, hazardous material incidents, and other situations posing threats to public safety and the environment.

10.3 LOCAL COMMUNITY LIAISON COMMITTEE

Argentia Renewables will establish a Liaison Committee that will involve local stakeholders (communities, businesses, emergency services, schools, health care facilities etc..). The purpose of this committee will be to streamline communication strategies for ensuring the safety and well-being of area residents and businesses during emergencies.

Argentia Renewables will conduct regular public awareness campaigns to educate the community about emergency procedures, communication channels, and the importance of staying informed. Argentia Renewables will also establish a feedback mechanism to gather input from the community and industry stakeholders, allowing for continuous improvement of the communication strategy.

Argentia Renewables will implement the following systems:

- Invest in an integrated alert system that can send alerts via text messages, phone calls, and emails to residents and industry personnel.
- Utilize social media for real-time updates and to disseminate information quickly. Establish official accounts for emergency communications.

  Install sirens and public address systems in critical locations to broadcast emergency alerts.

10.4 COMMUNICATIONS WITH THE PUBLIC

10.4.1 INFORMATION

It is extremely important to inform the media when disasters occur, and the media should be thought of as allies. The information that is provided must be factual. It must also be coordinated with the various government agencies to avoid contradictory information that would only cause confusion. In all instances, the Site Manager or designate of Argentia Renewables Project, will liaise with the media.

10.4.2 PUBLIC RELATIONS POLICY

When emergency situations occur at the plant site or wind farm, the public must be informed accurately and periodically about the nature of the incident and the measure taken. During the first minutes of an emergency at the plant-site, before the Plant Manager arrives at the site, the OSC in consultation with the Plant Manager can provide factual information to the press and the public.

However, any information about an emergency must be forwarded to the Plant Manager, who will in turn, liaise with the media.

The main components of public relations are to:

- Control of the media.
- Control the dissemination of information.
- Manage the services provided to media representatives.
- Take photos and video recordings of the disaster.
- Arrange press conferences.

10.5 EXTERNAL EMERGENCY SERVICES AND REGULATORY AGENCIES

Local Emergency Services (Police, Fire, Ambulance, and Rescue Agencies) have legislative authority to control specific incidents and emergencies when called to the Project.

In all circumstances, the Project ERT will support the role of the External Emergency Services. All external emergency services will be contacted by project personnel to review scope of project and communicate required services in case of incident.

To effectively work with governmental agencies, personnel will ensure the following:

- Appropriate Government agencies participate in the pre-planning measures for emergency response.
- All participants understand their respective roles and responsibilities and how to access additional available resources.
- Everyone agrees to the use of common terminology and knows what it implies with respect to command and control of the emergency incident.
- Agencies are involved in exercises / drills.

10.5.1.1 POLICE SERVICE (RCMP)

If required by certain emergencies, the RCMP may be called upon to provide support. In these cases, it provides policing services including:

- Maintaining law and order.
- Protecting life and property.
- Coordinate search and rescue.
- Establish and maintain roadblocks. Only personnel cleared by Incident Commander (IC) will be permitted to enter the area.
- Responsible for control and security of an evacuated area during the emergency.
- Ensure all victims are registered.
- Secure evacuated areas.
- Respond to Transportation of Dangerous Goods (TDG) occurrence.
- Notify the provincial spill centre of a product release if the first contact is through their detachment.
- Assist Fire Dept. with public evacuation.
- Provide security, traffic, and crowd control, as required.
- Act on behalf of the medical examiner with the Fatalities Inquiries Act.
- Notify next of kin of fatalities and/or serious injury.

10.5.1.2 AMBULANCE SERVICE

Provide care services including:

- Treatment and transport for sick and injured persons.
- Conduct evacuation operations, involving person's dependent upon 'life support units' or disabled persons when appropriate.

10.5.1.3 FIRE SERVICE

Fire services provide the following support:

- Deal with outbreaks of fire.
- Rescue persons trapped by fire.
- Take practicable measures to prevent outbreaks of fire.
- Deal with Hazardous Materials Incidents.
- Arrange additional firefighting resources as required.
- Provide fire protection for vehicle accidents and rescue operations.

10.5.1.4 HEALTH SERVICES

In emergency situations, the Director of Health and Community Services or his/her Deputy assumes the following responsibilities:

- Participate in the Emergency Measure Organization (EMO) in the port.
- Act as liaison with the medical authorities.
- Keep a log of all the measures that were takes.
- Work together with the information offices of the port to provide information about the notices of danger to the public.
- Advise the members of the EMO about dangers to public health.
- Select the injured, if necessary.
- Take care of the priority task of assessing the injured at the disaster site.

10.5.1.5 ENVIRONMENT CANADA

Under the Canadian Environmental Protection Act, Environment Canada has the legal responsibility and expertise needed to protect the fauna and other natural resources.

Environment Canada is included in the CCG alert system and in the emergency command structure. Environment Canada provides the following support:

- Ministry responsible for overseeing the clean-up of all hydrocarbon or other hazardous materials into a watercourse or fish bearing stream.
- Lead Agency for any spill from a government dock.
- The Investigations Section of Environment Canada is responsible for administering and enforcing various federal laws such as the Fisheries Act and the Migratory Birds Convention Act following an oil or chemical spill. In this capacity, an Investigations Officer collects evidence, draws samples, and investigates any pollution incident to determine whether an offence has occurred, and recommends to the Department of Justice whether charges should be laid against

the spiller under one of these acts. The Investigations Officer may also recommend that charges be laid under applicable provincial legislation as well.

10.5.1.6 DEPARTMENT OF FISHERIES AND OCEANS (DFO) (CANADA)

Is responsible for:

- For spills in certain areas, DFO would take over from the Canadian Coast Guard.
- DFO is primarily concerned with all fish habitat not just navigable waters.

10.5.1.7 TRANSPORT CANADA

The Marine Safety Branch of Transport Canada is responsible for investigating and overseeing the response to an oil or chemical spill which originates from a marine vessel (e.g., tanker, barge, cargo ship). It is responsible specifically for actions taken aboard the vessel to mitigate the incident. It does NOT have authority over the containment, recovery, and clean-up of material in the water which falls under the jurisdiction of the Canadian Coast Guard.

The Marine Safety Branch also administers and enforces the pollution provisions and regulations of the Canada Shipping Act (CSA) and has the legal authority to board vessels, draw samples, and collect evidence. This work is performed by an authorized Pollution Prevention Officer.

The Surface Transport Dangerous Goods Directorate of Transport Canada may assume federal Lead Agency status for land-based spills involving rail cars or tank trucks. It also administers and enforces the requirements of the Transportation of Dangerous Goods (TDG) Act following a transportation emergency incident.

Transport Canada also staffs and manages the Canadian Transport Emergency Centre (CANUTEC) which provides 24-hour advice on chemical spill response, TDG requirements, and also serves as a 24-hour emergency reporting centre for hazardous materials incidents anywhere in Canada.

10.5.1.8 DEPARTMENT OF ENVIRONMENT AND CLIMATE CHANGE (DECC)

Is responsible for:

- The Department of Environment and Climate Change supports the environmental sustainability of municipalities, communities and regions. It is responsible for environmental protection and enhancement through implementing water resource and pollution prevention regulations and policies, as well as coordinating environmental impact assessments of proposed development projects and managing impacted sites.
- The Department also supports facilitation of the settlement of collective agreements, providing dispute resolution services, appointing arbitrators, and providing workplace training. In addition, the Department ensures compliance with minimum terms and conditions of employment.

10.5.1.9 REGIONAL HEALTH AUTHORITY

Is responsible for:

- Providing the health promotional, preventative, diagnostic, treatment, rehabilitative and palliative services, supplies, equipment and care the regulations require it to provide.
- Provide information on a regional basis to protect public health and safety.
- Providing direction and advice for coordinating provision of exceptional resources to institutions, health agencies, and others, ensuring their cooperation.
- Establish and maintain field and inter-hospital medical communications.
- Coordinate with Emergency Medical Services (EMS), other hospitals and any medical response personnel at the scene to ensure that casualties are transported to the appropriate medical facility. Distribute patients to and among hospitals both inside and outside the health region based on severity and type of injuries, time and mode of transport, capability to treat, and bed capacity.
    - Coordinate with local emergency responders to isolate and decontaminate incoming patients if needed.
    - Coordinate with other hospitals and with EMS on the evacuation of patients from the affected hospitals, if necessary.
    - Notify agencies and senior levels of government about health-related matters.

10.5.1.10 EASTERN CANADA RESPONSE CORPORATION (ECRC) – 709-364-6600

The Eastern Canada Response Corporation (ECRC) is a response organization accredited by the Canadian Coast Guard under section 660.4(I) of the Canada Shipping Act. ECRC can provide directly or indirectly through subcontractors the equipment and personnel needed to manage and carry out an emergency plan to deal with pollution from oil spills.

10.5.1.11 TRANSPORT CANADA MARINE SAFETY (TCMS)

- following an incident involving an oil spill: conduct inquiries and issue claims, as appropriate, provide technical expertise about the ship and responses on board that could minimize the spill.
- inquire into marine incidents involving one or more ships to ensure that it is safe for the ship(s) to return to its (their) activities.
- conduct inquiries in the event of dangerous incidents or situations involving workers (dock workers) or sailors to whom the Canada Labour Code applies.
- evaluate plans to transfer cargoes and raise ships stricken by disasters.
- evaluate the risks of plans to salvage ships and advise the supervisor about refloating operations.
- advise the OSC about the operations of salvage companies and the implementation of the described measures.

10.5.1.12 CANUTEC

CANUTEC is the Emergency Centre operated by Transport Canada to help the response personnel deal with emergencies involving dangerous goods. CANUTEC is an information centre that provides advice and technical information about chemicals produced, stored, or transported in Canada. CANUTEC is also a coordination centre that makes it possible to reach inspectors of dangerous goods and response personnel when accidents occur.

Thanks to its computerized information system, CANUTEC can provide immediate advice and recommendations when emergencies involve dangerous goods. Among other things, it can provide:

- the chemical, physical and toxicological properties, as well as the compatibility of dangerous goods.
- the health risk and the first aid to provide.
- the dangers created by fires, explosions, spills, or escapes.
- the emergency procedures to protect life, property, and the environment.
- evacuation distances.
- and protective clothing.

CANUTEC can also quickly trace the shipper and consignee, or the carrier or manufacturer of a product.

10.5.1.13 MUNICIPALITY

- Provide fire protection.
- Arrange through the police to establish roadblocks as required.
- Provide on-site fire response for all construction related fires including firefighting equipment and personnel.
- Notify the general public surrounding the Argentia Renewables facility regarding emergency, shelter in place or issue an evacuation notice; stand down, return to resident homes.
- Prepare an evacuation location for evacuees if required and provide care for the evacuees.

10.5.2 INTERNAL EMERGENCY CONTACT LIST

The following list shall be updated on an as needed basis by the SH&E Department and distributed to Switchboard at the security office. In addition to the list below, an updated list of all ERT members shall be posted in designated areas (e.g. safety bulletin boards) of the workplace be circulated to plan holders and be maintained at the site Security office.

Argentia Renewables Contact List	Telephone/Fax Numbers
To be determined	

10.5.3 EXTERNAL AGENCIES / RESOURCE CONTACT LIST

The following external agencies may be contacted during an emergency in request for support, or in compliance with regulatory reporting requirements. Additionally, also indicated are indications of the types of events that would warrant contact with these external agencies. Each contact number shall be verified by the IC / Supervisor on an annual basis and updated as necessary.

Provincial Department of Government Services	Telephone/Fax Numbers
Occupational Health and Safety (OH&S) Division	(709) 729-4444 (24hr) (709) 729-6639 (fax)
Type of Event: Serious injuries and fatalities; or events which have the potential to cause serious injuries (as defined in the OH&S Act).	

Royal Canadian Mounted Police	Telephone/Fax Numbers
Placentia	709-227-2000 709-227-7468 (fax)
Type of Event: Serious injuries or fatalities which have resulted from vehicle accidents. Fatalities that have occurred during operations. Missing persons where off-site assistance is requested. Events that may affect public safety (e.g. marine vessel incident or spill).	

Medical Services	Telephone/Fax Numbers
Placentia Hospital	709-227-2061
Placentia Emergency Department	709-227-2013
Provincial Poison Control Center	709-722-1110
Type of Event: Medical emergency; * Only to be contacted under the instruction of site supervision.	

Fire Department	Telephone/Fax Numbers
Placentia Fire Department	709-227-2151 709-227-3200 709-227-2323 (fax)
Type of event: Fire response and emergencies. * Only to be contacted under the instruction of site supervision.	

Canadian Coast Guard	Telephone/Fax Numbers
(1) Marine & Air Distress Emergencies	1-800-563-2444
(2) Air Search & Rescue (Halifax)	1-800-565-1582
(3) Marine Rescue Sub-Centre	709-772-5151/2597
Type of Event: All events that involve marine/air distress	

Environmental Emergencies	Telephone/Fax Numbers
Environment Canada	1-800-563-9089 709-772-2083
Eastern Canadian Response Corporation (Level III spills)	1-(613)- 930-9690
Type of Event: All events that cause or create a potential for environmental damage.	

Fisheries, Forestry and Agriculture	Telephone/Fax Numbers
Report a Forest Fire	1-866-709-3473
Provincial Forest Fire Communications Centre	709-637-2328
Eastern Region	709-256-3473
Type of Event: Forest fires and wildlife incidents	

Environment Canada	Telephone/Fax Numbers
Environment Canada – Newfoundland and Labrador Region	709- 772-4285/5097 709-772-7745 (24hrs 7days/wk.)
Federal Department of Fisheries and Oceans	Telephone/Fax Numbers
Division Manager – Science Branch Marine Environment and Habitat Management	709- 772-2442/5562
Type of Event: Environment Canada - All environmental incidents or events that have the potential for serious environmental incident. Department of Fisheries and Oceans - Accidental release of a deleterious substance into a body of water or an incident having potential to affect the aquatic environment.	

Transport Canada	Telephone/Fax Numbers
National 24-hour number – Duty officer Canadian Transportation Emergency Centre Information	613-996-6666/ 954-5101 613- 992-4624
Type of Event: Air or marine transportation emergency	

Ground Search & Rescue	Telephone/Fax Numbers
Triple Bay Eagle - Clarenville	911
Type of Event: Lost Person(s)	

Town Office(s) / Local Business	Telephone/Fax Numbers
Town of Placentia P.O. Box 99 Placentia, NL A0B 2Y0	709-227-2151 709-227-2323 (fax)
Marine Atlantic P.O. Box 405 Placentia, NL A0B 2Y0	1-800-341-7981
Port of Argentia 1 Augusta Avenue P.O. Box 95 Argentia NL A0B 1W0	709-227-5502 709-227-5592 (fax)
Town of Fox Harbour P.O. Box 64 Fox Harbour, NL A0B 1V0	709 227-2271

Local Resources	Telephone/Fax Numbers
Police – RCMP – Emergency	911 709-227-2000
Afonso Diving Contractors Ltd. (24 Hour Service)	709-576-6070
Agents – Harvey Agency – Atlantis International Ltd. – Blue Peter Marine Agencies Ltd. – Canadian Maritime Agency Ltd. – Eimskip Canada Inc. – St. John's – Eimskip Canada Inc. – Argentia – P.F. Collins Customs Broker Ltd.	 709-576-4761 709-739-5200 709-726-2440 709-463-8735 709-754-7227 709-754-7227 709-726-7596
Canadian Blood Services St. John's	709-758-8411
Capital Crane Ltd. – St. John's	709-748-8888
Crosbie Industrial Services	709-722-5280
Edward Collins Contracting Ltd.	709-227-5509
Maher's Contracting Ltd.	709-227-2066
Marine Atlantic – Reservations – Seasonal	 800-341-7981 709-227-2311
Bell Aliant - St. John's	18006686878
Newfoundland Power – Emergency / Power Outages	709-737-5600 800-474-5711
Pro-Dive Marine Services (24 Hour Service)	709-368-7666
Ship's Chandlers – Campbell's Ship Supplies – Office – BlueWater Nfld. Ltd. – Office	 709-726-6932 709-754-8900
St. John Ambulance – St. John's	709-726-4200
Ash Grove - Cement	709-227-2627
Tug Companies – Canadian Maritime Agency Ltd. – Newfoundland Transhipment Ltd.	 709-463-8735 709-570-3200
Placentia Bay Veterinary Clinic 295 Main Hwy, Bay Roberts, NL, A0A 1G0	709-786-1571

PROVINCIAL RESOURCES	Telephone/Fax Numbers
Ambulance	911
Emergency Measures Organization	709-229-3703
Employment & Labour Relations Occupational Health & Safety	709-729-2711 709-729-2706
Environment and Lands Environment Officers	 709-729-2550
Fisheries	

Field Office - Placentia	709-279-7864
Health Regional Office Regional Medical Health Officer Health & Comm. Services Placentia	709-229-1551 709-229-1571 709-227-0130
Social Services – St. John's Regional Manager Placentia-Freshwater Office	709-729-6077 709-227-1300
Works, Services & Transportation Freshwater – Placentia Hwy Depot	 709-227-1351
Oil Spill Response	1-800-563-9089

FEDERAL RESOURCES	Telephone/Fax Numbers
Atlantic Pilotage Authority	877-272-3477
Canada Customs & Revenue Agency	800-461-9999
Canada Immigration Centre No Charge Dial	 800-242-2100
Canadian Security & Intelligence Service	709-772-5449
Emergency Preparedness Canada General Enquiries Regional Director	613-948-5200
Energy Mines and Resources Explosives Division General Information	 613-995-8415 613-995-0947
Environment Canada General Weather Forecast Marine Weather Forecast Environmental Protection	 709-772-5534 709-772-5534 709-772-5585
Fisheries and Oceans St. John's Reg. Director General Canadian Coast Guard – St. John's – General Inquiries – Marine Rescue Sub-Center – Environmental Emergencies – MCTS – St. John's – Traffic Centre Canadian Coast Guard – Argentia Recorded Information (Placentia) – Ice Operations (St. John's) – Officer in Charge – Maintenance Manager – Weather Information – Shipping Information	 709-772-4417 709-772-5146 709-772-5151 709-772-2083 709-772-2083 709-227-2181 709-227-5731 800-563-3346 709-772-2078 709-227-5731 709-227-5681 709-227-5223 709-227-3346
Flight Service Station – St. John's	709-772-5594

Health Canada	709-772-5571
Public Works & Government Services Canada – St. John's – General Enquiries	 709-772-7608
RCMP "B" Division HQ – St. John's Placentia Detachment	709-772-5400 709-227-2000
Poison Control Centre	709-772-1110 844-764-7669
Transport Canada – Harbours & Ports – St. John's – Regional Director – Marine Safety – St. John's	 709-772-5154 902-426-2588 709-772-5165
CANUTEC - Ottawa – Emergencies – Information & Emergencies Centre	 613-996-6666 613-992-4624
Transportation Safety Board Investigations	902-426-2348

ADMINISTRATION CONTACTS	
Port of Argentia	Telephone/Fax Numbers
CEO – Scott Penney – Office – Cell Email: s.penney@portofargentia.ca	 709-227-5502 709-687-4887
VP Strategy & Growth Chris Newhook – Office – Cell Email: c.newhook@portofargentia.ca	 709-227-5502 709-227-4567
General Manager Adam Greene – Cell Email: a.greene@portofargentia.ca	 709-227-4653
Port Operations Co-ordinator Blair McGrath – Office – Cell E-mail: b.mcgrath@portofargentia.ca	 709-227-1934 709-227-4702
HSEQ Coordinator Jackie Jones – Cell E-mail: j.jones@portofargenita.ca	 709-682-3886

Business Index of Port of Argentia	Telephone/Fax Numbers
Argentia Freezers & Terminals Ltd.	709-227-5603

Atlantra Leasing	800-446-1800
Cahill Fabrication	709-687-8415
Cenovus Energy	709-724-3900
Coffey's Transport	709-227-4451
CRH Canada Group Inc.	709-227-2627
Dandy Dan's Seafoods Ltd.	709-227-4800
Edison Electronic	709-227-1999
Edward Collins Contracting Ltd.	709-227-5509
Innovative Solutions	800-387-5777
Integrated Logistics	709-739-4036
Intersac	514-457-5362 ext. 216
Labrador Island Link Ltd. Partnership	709-570-5951
Mammoet	416-798-3010
Marine Atlantic Inc.	709-227-2311
Newco Metals & Auto Recycling Ltd.	709-753-3070
Patterson's Crane Rentals	709-227-2001
Provincial Ready Mix	709-227-2727
Skyline Contracting	709-227-2304
Stellar Woodworks	709-227-0802
Super Clean Services Ltd.	902-798-2929
TMSI	902-481-9076
Town of Placentia	709-227-2151
Town of Fox Harbour	709-227-2271

10.6 HSE INSPECTIONS

Workplace inspections are crucial for identifying and addressing potential hazards, ensuring compliance with safety regulations, and promoting a healthy work environment. There are several types of workplace inspections, each serving a specific purpose. Here are some common types:

1. **Routine Inspections:**
   a. Regular, scheduled inspections to identify and address day-to-day safety issues.
   b. Frequency: Conducted on a routine basis, such as weekly or monthly.

2. **Pre-Start Health and Safety Inspections:**
   a. Conducted before starting a new task, project, or work shift to ensure that the work area is safe and compliant with regulations.
   b. Focus: Hazard identification and mitigation specific to the upcoming tasks.

3. **Preventive Inspections:**
   a. Purpose: Proactive assessments aimed at preventing potential hazards and promoting a safe workplace.
   b. Frequency: Periodic inspections to identify and address potential issues before they become serious.

4. **Post-Incident Inspections:**
   a. Purpose: Conducted after accidents, near misses, or other incidents to identify the root causes and prevent future occurrences.
   b. Focus: Investigating the circumstances leading to the incident and implementing corrective actions.

5. **Compliance Inspections:**
   a. Purpose: Ensuring that the workplace complies with relevant safety regulations and standards.
   b. Focus: Verifying adherence to legal requirements and industry standards.

6. **Focused Inspections:**
   a. Purpose: Concentrating on specific areas, processes, or equipment that pose particular risks.
   b. Focus: Targeted assessments to address identified concerns or potential issues.

7. **Joint Inspections:**
   a. Participants: Conducted by representatives from management, workers, and safety professionals.
   b. Purpose: Collaborative efforts to identify and address safety issues, fostering a shared responsibility for workplace safety.

8. **Behavioral Safety Inspections:**
   a. Purpose: Assessing and improving the safety-related behaviors of employees.
   b. Focus: Identifying and promoting positive safety practices and behaviors.

9. **Environmental Inspections:**
   a. Purpose: Evaluating the workplace for environmental hazards such as chemical exposures or air quality issues.
   b. Focus: Ensuring compliance with environmental regulations and promoting a safe and sustainable work environment.

10. **Emergency Preparedness Inspections:**
    a. Purpose: Evaluating the workplace's readiness for emergencies and disasters.
    b. Focus: Assessing the effectiveness of emergency response plans, equipment, and employee training.
    c. These types of inspections can be tailored to the specific needs and risks of different workplaces, and their effectiveness depends on thorough planning, implementation, and follow-up actions.

All completed checklists and inspection reports will be forwarded to the HSE advisor upon completion.

10.7 EMERGENCY RESPONSE PLAN HOLDERS

On a yearly basis, Document Control will distribute a regulated version of the Argentia Renewables Emergency Response Plan to the following entities:

- Facility Manager
- Emergency Response Team
- Health & Safety Coordinator
- Security
- Main Gate access box
- Town of Placentia
- Placentia Fire Department

- Port of Argentia
- Town of Fox Harbour
- Placentia Hospital
- Placentia RCMP

10.8 PERIODIC REVIEW / AUDIT

Planning emergency procedures is an ongoing activity that requires constant corrections and revisions for a number of reasons, including changes in operations, in the Corporation, in personnel, in the regulations, and in community standards.

The HSE Officer or designate conducts a review of the overall emergency response plan on an annual basis. Site-specific plan elements are reviewed during these site audits. During the annual review the HSE Officer will review the Emergency Response Plan with the Occupational Health & Safety Committee for their input and review. The HSE Officer or designate shall conduct a periodic (at least quarterly) assessment of the emergency evacuation plan at the site level to ensure that changes in the project site are accounted for in the plan.

The Argentia Renewables Plant is responsible for testing the various parts of the emergency response procedures plan at least once a year to ensure that it is complete, effective, and up to date. The HSE Officer or designate must also inspect emergency response equipment on a monthly basis at a minimum and ensure that;

- Minimum one drill performing a rescue scenario within a turbine,
- Minimum one emergency fire drill in the O&M building.
- Additional drill examples could include Hurricane Preparation Preparedness review, loss of communications, tornado, local emergency or other natural disaster.

When local Emergency First Responder personnel are available and their presence is applicable to the scenario, they will be included in the drills.

Appendix N

Waste Management Plan

Appendix N

Waste Management Plan

Argentia Renewables Project

Issued by: Argentia Renewables Wind LP
Project Facility: All Locations
Affected Facility: All Locations

Effective Date: July 31, 2024

Document Maintenance and Control

Argentia Renewables Wind LP (Argentia Renewables), an affiliate of Pattern Energy Group LP (Pattern), is responsible for the distribution, maintenance and updating of this Waste Management Plan for the Argentia Renewables Project (the "Project"). This plan will be updated when needed for reasons including but not limited to reflecting changes in site-specific implementation, updating contact information, changes to scientific methods and survey best practices.

Document Revision Record				
Issue Date (dd/mm/yyyy)	**Rev. #**	**Prepared by**	**Approved by**	**Issue Purpose**

Index of Major Changes/Modifications in Latest Version

Item #	Description of Change	Relevant Section

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1.0 Introduction

The Waste Management Plan (WMP) has been prepared by Argentia Renewables Wind LP (Argentia Renewables), an affiliate of Pattern Energy Group LP (Pattern) for the Argentia Renewables Project (the Project), which involves the planning, construction, operation and maintenance, and eventual decommissioning and rehabilitation of an onshore wind energy generation facility (Argentia Wind Facility) and a green hydrogen and ammonia production, storage, and export facility (Argentia Green Fuels Facility). The Project is located on Port of Argentia (POA) property located within the Town of Placentia, Newfoundland and Labrador (NL). This plan is intended to address the scope of work noted in Section 4.5 of the "Guidance for Registration of Onshore Wind Energy Generation and Green Hydrogen Production Projects" (Doc-2022-1022 issued by Department of Environment and Climate Change, GNL April 2023).

1.1 Legal

This document has been developed in compliance with the requirements of the Province of NL. As a component of a Project Registration under the **Environmental Protection Act (Environmental Assessment Regulations)**, the document is considered to reflect a commitment by Argentia Renewables to carry out the actions described and to report on results achieved.

In compliance with the Registration Guidelines for Onshore Wind Energy Generation and Green Hydrogen Production Projects, this WMP outlines the procedures for handling, storing, and disposing of both liquid and solid waste generated throughout the project lifecycle.

1.2 Scope

The Argentia Renewables WMP describes the steps to be taken by Argentia Renewables to meet and maintain a high degree of control over the collection, storage, transportation, and disposal of waste to minimize adverse environmental effects while ensuring compliance with all applicable acts, regulations, and standards. The WMP identifies requirements and actions for the management of waste generated by the Project. This includes methods to reduce, reuse, recycle, recover, and/or manage residual waste through off-site disposal.

The WMP applies to all components of the Project, including onshore wind energy generation and a green hydrogen and ammonia production, storage, and export facility. It addresses all phases of the Project from Construction Phase, through Operations and Maintenance Phase, and including Decommissioning and Rehabilitation Phase. The WMP applies to all employees of Argentia Renewables; all contractors and sub-contractors will be encouraged to adopt the Plan.

1.3 Objectives

The objectives of the WMP Plan are to:

- Provide a summary of regulatory requirements.
- Establish the roles and responsibilities for managing wastes.
- Provide guidance to Project personnel on the methods for collection, segregation, storage, and disposal of hazardous and non-hazardous waste streams associated with the Project.
- Provide documentation and reporting requirements for regulatory bodies and to meet the needs of Argentia Renewables.

1.4 Roles and Responsibilities

Throughout all phases of the Project, the Environmental Management Team at Argentia Renewables will continuously offer direction and supervision to ensure that all operations adhere to environmental regulations, policies, and an overarching dedication to environmental stewardship, with meticulous planning, design, and execution. The roles and responsibilities of Project personnel are described in Table N-1.4-1.

Table N-1.4-1 Roles and Responsibilities of Personnel involved in Argentia Renewables Project.

Role	Responsibilities
Managers and Supervisors	• Managers and supervisors are responsible for ensuring that staff, contractors, suppliers and visitors have been properly trained in the Argentia Renewables waste management expectations and procedures. • They shall provide the necessary resources and personnel for executing the WMP.
Project Manager	• Oversee all activities pertaining to Project Construction and Operation and Maintenance Phases and ensure that environmental objectives are communicated to all site personnel. • Appoint a competent Construction Manager to oversee Project Construction activities. • Refer and coordinate environmental complaints pertaining to waste management to the Project Construction or Operations team for investigation. • Liaise with Communications team, as required, regarding waste management. Ensure appropriate investigation and responses are completed for all public complaints regarding Construction and Operation and Maintenance Phase activities, utilizing existing communications protocols. • Coordinate regular Construction Phase activities to allow for the efficient completion of Project construction and minimize overall waste generated at site. • Coordinate the annual review of the WMP with the Construction Team, Operations Team, Environment Team, and Contractors, and revise as required.

	• Ensure all permits for transportation, storage, and disposal of waste are obtained and update the Project team of any amendments or changes. Inspect and audit waste management activities for compliance of regulatory requirements as well as to the WMP. • Provide environmental and waste management training materials and programs to all personnel involved in work onsite, including regular operations personnel, Project construction personnel, and site visitors. Ensure each participant understands their role as outlined in the WMP.
Construction Manager	• Ensure resources related to waste management are effectively utilized. • Monitor materials, equipment, and labour to optimize efficiency and minimize waste. • Maintain Project schedules, ensuring that tasks are completed on time. • Ensure schedules are being met to prevent delays and reduce the accumulation of waste. • Ensure waste is minimal for cost efficient purposes. • Ensure the construction team is aware of all waste management practices and follow them accordingly. • Ensure training in handling hazardous materials is current.
Operations Manager	• Oversee the day-to-day waste management operations. • Manage the collection, transportation, and disposal of waste materials in an efficient and compliant manner. • Work closely with construction team to ensure all waste management activities are conducted safely and meet all regulations. • Coordinate waste management tasks and address operational challenges to ensure operations are effective and efficient. • Monitor waste management operations to determine if there are other practices to incorporate for efficiencies and cost reduction. • Ensure training in handling hazardous materials is current.
Human Resources Manager/Recruiter	• Perform recruitment for positions related to waste management. • Provide staff with access to training related to waste management. • Encourage and motivate employees to adopt good waste management practices. • Collaborate with other managers to develop and implement waste management practices in accordance with regulations and best practices. • Communicate with employees and the public regarding waste management efforts.
Health, Safety, and Environment Project Manager	• Ensure environmental compliance activities for the execution of the WMP. • Responsible for development and planning of a new waste management system, as well as upgrading existing systems where necessary. • Provide technical support, auditing, tracking of waste sorting, collection, transport, and final disposition. • Oversight of all waste contractors. • Perform audit of waste management activities and contractors.
Financial Manager	• Formulate and manage budgets related to waste management for the Project. • Assess available financial resources and allocate funds based on waste management priorities.

	• Monitor and manage budgets related to waste collection, recycling facilities, landfill operations, and other activities related to waste management.
Contract Administrator	• Prepare contracts related to waste management activities. • Ensure contracts meet the applicable regulations for waste management activities. • Act as point of contact for contract reviews, approvals, and changes. • Consult with legal team to manage risks and liabilities related to waste management if required.
All Site Staff and Visitors	• Follow the WMP • Ensure that waste is properly segregated and in designated areas for transportation. • Receive proper training and understand waste management best practices. • Ensure that designated areas for waste are following regulations and safety standards. • Trained in handling hazardous materials. • Notify Operations Manager or Construction Manager of environmental or unsafe waste management practices at the Project site. • Know the waste management requirements specific to their area or type of work. • Coordinate waste removal from local working areas to the centralized storage areas. • Ensure that all project containers are properly managed.

2.0 Waste Management

The WMP identifies the common types of waste streams and quantity of waste generated at the Project. It is necessary to determine the amount of waste and which waste streams are hazardous and non-hazardous. Materials are considered waste when they can no longer be used for its original purpose.

Local communities near the Project area can accept household garbage, recycling, and bulk garbage into their landfills; however, community landfills are small and do not have the capacity to accept waste from large industrial projects. Argentia Renewables is committed to hiring local contractors to assist with the transportation of materials to appropriate facilities for disposal. Robin Hood Bay in St. John's is available for the disposal of hazardous wastes and non-hazardous waste from large industrial projects. A permit will be obtained before any waste is transported to Robin Hood Bay Waste and Recycling facility.

2.1 Non-Hazardous Waste

2.1.1 Domestic Waste

Domestic waste generated is expected to have similar waste composition as found in the municipal solid waste stream. This domestic waste stream consists of food and beverage waste, packaging, corrugated cardboard, paper and paper products.

2.1.1.1 Food Waste and Packaging

Most food wastes will be generated in the lunchroom areas of the work site. All food waste will be collected and disposed of in an enclosed secure and covered collection bin to reduce odour and minimize the attraction of wildlife. Gathering and transporting this waste will be the responsibility of Argentia Renewables or its representative. Littering around site is strictly prohibited and consequences will be enforced.

2.1.1.2 Cardboard and Other Recycling

Cardboard recycling will be generated from packaging of material deliveries to site. Plastic bottles and aluminum cans will be generated in the lunchroom areas of the work site. Recyclables will be collected and disposed of in an enclosed secure and covered collection bin divided by cardboard and containers. Recyclables will be progressively removed from the Project site and appropriately transported and disposed of at the Robin Hood Bay recycling facility in St. John's.

2.1.2 Inert Bulk Waste

2.1.2.1 Scrap Metals

Metal waste may be generated from scrap metals produced by structural and electrical work. This waste stream will consist of ferrous and non-ferrous scrap metals of various types. Waste metal will be stockpiled on site and then transported to appropriate waste facility.

2.1.2.2 Scrap Wood

Small pieces of broken lumber will be collected and disposed of in an approved landfill. Larger pieces of lumber will be stored in a laydown area for potential reuse. Site personnel will be informed to reuse this lumber material as much as possible or wherever feasible. When no longer usable, wood waste may be sent to the local landfill, this will be determined based on consultation with the appropriate stakeholders.

2.1.2.3 Vegetation

Any vegetation and topsoil shall be completely removed before infilling and will not be used as fill material. Sod and topsoil will be striped and stockpiled separately in a designated area to be used for future reclamation purposes in the Project Area.

2.2 Hazardous Waste

It is expected that hazardous waste will be generated during Project activities. This waste stream is made up of petroleum-based, chemicals, and special wastes. They will generally exhibit one or more of the following characteristics: flammable, reactive, corrosive, or toxic. Hazardous waste requires that specific

management measures be taken to ensure the health and safety of workers, the public, and the environment. Hazardous waste is trucked to the regional waste management facility at Robin Hood Bay. Depending on the type of hazardous waste, Certification of Approval for the management of waste may be required. A provincial Certificate of Approval for the Transportation of Waste Dangerous Goods/Hazardous Waste will be obtained for hazardous waste transportation. Hazardous waste is accepted at the regional waste management facility at Robin Hood Bay.

Mechanical servicing of vehicles or equipment may occur on the Project site. Wastes associated with these activities may include used oil, used filters, hydraulic fluid, and coolants. Other hazardous wastes may include contaminated soils, batteries, sewage, biomedical, and ammonia.

Hazardous waste will be stored in designated areas or storage facilities that are appropriately designed for the materials stored. A designated Project site hazardous waste storage area will have secondary containment and be collected in appropriate leak proof containers until they are removed from site to a licensed offsite facility for disposal on a regular basis. This area will be marked with appropriate signage and fencing to control access.

2.2.1 Petroleum Waste

Petroleum-based wastes generated at the site will primarily be:

- Used oil;
- Hydraulic fluid;
- Lubricants;
- Coolants;
- Oily rags/absorbent pads; and
- Contaminated soils, snow, and ice.

These wastes will be segregated, as necessary, to render the individual waste streams easier to reuse for other purposes, recycle, or permit recovery of any by-products. Special precautions will be exercised when handling these materials since the improper release or disposal could adversely affect the environment. For more information on hazardous waste handling please see the Hazardous Materials Response and Training Plan (Appendix O). Personnel handling wastes will be required to have specific training and utilize Personal Protective Equipment (PPE) to ensure safe handling and disposal.

Any hazardous materials stored in drums must have proper labelling (Safety Data Sheets will be available, where applicable). All drums are to be clearly labelled indicating their contents to ensure materials are not mixed.

Any contaminated soil, snow, or ice will be cleaned up immediately, in accordance with a site specific plan to be developed in line with Pattern's EMS 205 Spill Prevention, Countermeasure, and Control Plan. Minor spills on contaminated soil, snow, and ice will be sealed in labelled steel drums and stored in the hazardous waste storage area to await backhaul to an approved facility. Larger spills will also follow the site specific plan and remediation of areas will occur promptly.

2.2.2 Chemical Waste

The chemical waste stream that may be generated during the Project consists of:

- Batteries;
- Solvents, cleaners, paints, epoxies, and adhesives;
- Aerosol cans;
- Plotland cement;
- Concrete additives; and
- Packing containing chemical contaminants.

The use of these products will be limited. When necessary, empty containers of solvents, paints, epoxies, adhesives, and aerosol cans will be collected in specific disposal containers that are clearly labelled until they can be shipped to an offsite disposal facility.

2.2.3 Biomedical Waste

For the WMP, biomedical wastes that are classified as hazardous include medical sharps such as needles. People who need to administer their own medication shall place used needles in an approved receptacle labelled 'sharps' located in designated areas on the Project site. These receptacles will be collected and removed from the Project site to a licensed offsite facility for final disposal.

2.2.4 Sewage

During the Construction Phase and Decommissioning and Rehabilitation Phase of the Project, temporary toilet and wash facilities will be located on the Project site. Untreated sewage will be held in the portable toilet facility and progressively collected by a local septic removal contractor. During the Operations and Maintenance Phase of the Project, sewage may be collected by a local septic removal contractor or may be treated by a wastewater treatment plant. The use of a wastewater treatment plant is currently under review and will be determined after the detailed design of the Project has been completed.

2.2.5 Bilge Water

As part of safe vessel operations for each Phase of the project, bilge water from ships may need to be emptied. Bilge water may contain contaminants such as fuel oil, lubricating oil, debris/detritus, chemicals and sewage. Oily water shall be collected by an approved waste management firm and treated and/or disposed of at an approved hazardous waste facility.

3.0 Waste Storage and Disposal Plan

Argentia Renewables will ensure that the storage of hazardous waste, non-hazardous waste, or other waste streams are stored in buildings/sheds or in covered dumpsters located outside. These storage areas must adhere to the following requirements:

- Incompatible materials are not stored near each other.
- Appropriate signage is posted.
- Fenced and gated as applicable.
- Adequate ventilation is provided via normal airflow (i.e., waste vapor or odor does not become trapped in the structure where the waste is stored).
- A suitable fire extinguisher is present.
- Heavy containers are stored on lower shelves and sufficient space between containers is maintained to enable removal without knocking down other containers.
- All hazardous waste is stored below eye level.
- Waste containers must be inspected at least monthly for labeling, container condition, leaks and/or spills.
- Waste containers must be in good condition, compatible with the waste stored therein, and not in danger of leaking.
- Waste containers must not be opened, handled, or stored in a manner that may rupture the container or cause the containers to leak.
- Waste containers must always be closed during storage, except when waste is being added. In the case of liquid chemical hazardous waste, regulations do not permit funnels to remain in waste containers after filling.
- Waste must never be left in areas accessible to the public.
- Secondary containment is required for containers of liquid waste when the waste is stored in quantities of greater than 45 L or when necessary to separate incompatibles or high hazard waste.
- All waste containers must be labeled. The waste management vendor will provide the labels.
- If for any reason, Argentia Renewables is unable to comply with these waste management requirements, the Environmental Coordinator will be contacted for immediate guidance.

All waste generated at the Project site will be collected, segregated, labelled, and temporarily stored until transported for reuse, recycling, or disposal. Before handling any waste, it is imperative to think safety first. It is the requirement for all site personnel to be aware of the hazards and risks associated with the chemical, material, or product that they intend to use. Waste handlers shall be certified with Workplace Hazardous Material Information System (WHMIS) and Transportation of Dangerous Goods (TDG).

All hazardous waste streams must be shipped to an approved hazardous waste disposal facility. Hazardous waste can be sent to a receiver or hazardous waste management facility located outside of Newfoundland and Labrador only where the receiver or facility has been registered in the receiving province to accept that waste. Table N-3.0-1 shows a detailed breakdown of waste storage and disposal for specific waste streams.

Table N-3.0-1 Waste Storage and Disposal Plan.

Waste Classification	Waste Type	Site Handling/Shipping Methodology	Treatment or Disposal Strategy
Non-Hazardous			
Domestic Waste	Food, Drink Containers, Packaging, and Paper (non-recyclable)	Contain in tied bags then placed in odour proof secure containers minimizing wildlife attractants.	Waste will be progressively removed from the Project site and appropriately transported and disposed of at the Robin Hood Bay waste facility in St. John's.
	Cardboard and other recyclable materials	Boxes are to be broken down flat and large quantities are to be tied up. Plastic will be cleaned and bagged accordingly.	Waste will be progressively removed from the Project site and appropriately transported and disposed of at the Robin Hood Bay recycling facility in St. John's.
Inert Bulk Waste	Scrap Metal	Stockpile in designated laydown area. Reuse/Recycle where possible.	Transport offsite to be appropriately transported and disposed of at Dominion Recycling in St. John's.
	Scrap Wood	Stockpile in designated laydown area. Reuse/Recycle where possible.	Transport offsite to be appropriately disposed of at the Robin Hood Bay waste facility in St. John's or reused if possible.
	Vegetation	Strip and stockpile separately in a designated stockpile area to be used for future reclamation purposes.	N/A
Hazardous			
Petroleum Waste	Used Oil including Hydraulic Fluids	Collect in marked trays or labelled drums. Transport offsite.	Transport to Robin Hood Bay waste facility in St. John's for disposal.
	Used Oil Filters, oily rags and used absorbent	Store canisters in separate labelled drums. Transport offsite.	Transport to Robin Hood Bay waste facility in St. John's for disposal.

Waste Classification	Waste Type	Site Handling/Shipping Methodology	Treatment or Disposal Strategy
	Contaminated Soils, Snow and Ice	Store in labelled steel drum. Transport offsite.	Transport to Robin Hood Bay waste facility in St. John's for disposal.
Chemical Waste	Waste Batteries	Store in designated containers on site.	Transport to Robin Hood Bay waste facility in St. John's for disposal.
	Solvents, Paints, Epoxies, and Adhesives	Collect separately in marked drums.	Transport to Robin Hood Bay waste facility in St. John's for disposal.
	Aerosol Cans	Collect separately in marked drums.	Transport to Robin Hood Bay waste facility in St. John's for disposal.
Biomedical Waste	Sharps	Store in designated receptacles located in washroom facilities and marked as "Biohazard".	Transport to Island Waste Management for disposal.
Sewage	Human Waste	Stored in portable washroom facility during the Project.	Collected by a septic removal contractor. Will be transported to a Licensed Offsite Facility for disposal.
Bilge Water	Bilge Water	Collect on board marine vessels and retained in the ship's bilge.	If the bilge must be emptied for vessel safe operations, water shall be collected by an approved waste management firm and treated and/or disposed of at an approved hazardous waste facility.

3.1 Contractors

Contractors must submit a site-specific environmental protection plan to Argentia Renewables. Contractors generating the types of waste described in this document shall be responsible for the management of wastes in accordance with the WMP. Responsibilities include the safe collection and containment of all waste generated, including those considered hazardous. Contractors will also be responsible for the off-site transportation and final disposal of waste to a facility or site licensed to accept such materials.

Contractors will perform weekly inspections of the waste collection and disposal points, the inventory of bulk wastes, waste management data sheets, the status of the protective equipment and the spill kits. Any non-conformance will be tracked, recorded, and corrective action identified, if necessary. Any areas containing hazardous waste shall be inspected daily, with any leakage dealt with immediately including reporting to the Environmental Coordinator.

3.2 Reporting

Argentia Renewables is responsible for meeting all applicable legislation, policies, and guidelines for the Project. The waste streams that will be handled, stored, and disposed will be tracked and reported. Prior to transferring any hazardous waste, a generator request will have to be approved from an appropriate facility. Waste manifests will be kept for the transportation of all waste removed from site.

Regulators that require waste management logs will be sent annual updates, or as required, under specific permits. All contactors will also provide waste manifests to Argentia Renewables for tracking and reporting purposes. The following is a list of agencies that Argentia Renewables may potentially have to provide waste management reports and engage with regarding the WMP.

Federal

- **Canadian Centre for Occupational Health and Safety Act.**
- **Canadian Environmental Protection Act.**
- **Fisheries Act.**
- **Transportation of Dangerous Goods Act.**
- National Fire Code of Canada.
- Workplace Hazardous Materials Information System (WHMIS).
- CCME Environmental Codes of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products.
- Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations.

Provincial

- Air Pollution Control Regulations.
- **Dangerous Goods Transportation Act.**
- Environmental Control Water and Sewage Regulations.
- **Newfoundland and Labrador Environmental Protection Act (NL EPA).**
- **Occupational Health and Safety Act.**
- Occupational Health and Safety Regulations.
- Storage and Handling of Gasoline and Associated Products Regulations.
- Used Oil Control Regulations.
- Waste Diversion Regulations.
- Waste Management Regulations.
- **Water Resources Act.**

Municipal

The Project will follow local municipal bylaws and the **Urban and Rural Planning Act** for any waste handling, storage, and/or disposal taking place within the municipal boundary.

Other Legislation

- International Convention for the Prevention of Pollution from Ships.
- International Maritime Dangerous Goods Code.
- International Air Transport Associations.

4.0 Training

Argentia Renewable is responsible for providing on-the-job training to those conducting work in the Project area (i.e., staff, contractors, visitors, managers, supervisors, monitors). All individuals are required to have environmental awareness and site safety training, as well as certifications in Emergency First Aid and WHMIS before commencing work within the Project area. Those involved with handling and shipping hazardous materials will be provided with TDG training and will maintain a valid TDG certificate. All operations personnel involved in the handling of hazardous and non-hazardous wastes will be fully trained for “Personal Safety and Protection”. They will also be trained in emergency response and environmental protection. Contractors will be required to provide trained, qualified, and experienced personnel for waste management duties.

In addition, Argentia Renewable employees and contractors who handle hazardous waste and liquid industrial waste at the Project site are to receive waste management training. The waste management training covers the following topics:

- Definitions of hazardous waste and liquid industrial waste.
- Emergency contacts and muster points.
- Waste Designation Forms (WDF).
- Adding hazardous waste and liquid industrial waste into containers.
- Labeling containers and storage areas.
- Hazardous waste and liquid industrial waste storage and secondary containment.
- Transporting hazardous waste and liquid industrial waste from the generation point to the Oil Storage Shed.
- Responding to spills or other emergencies.

The training will be coordinated with the training required by the aforementioned site specific plan which is to be conducted annually.

5.0 Emergency Contacts and Procedures

This section presents a summary of individuals and organizations in case of a Traffic based incident or emergency, wildlife incident, or environmental emergency including a petroleum spill or reporting a forest fire. A detailed list of all contact information is available in the Emergency Response/Contingency Plan (Appendix M).

Table N-5.0-1 Emergency Contacts.

Name	Position	Contact Number
	H&S Manager	
	Operations Manager	
	Construction Foreman	
	Environmental Manager	
	On-Site Environmental Contact	
LOCAL EMERGENCY SERVICES		
Organization		Contact Number
Police – RCMP – Emergency		911 or 709-227-2000
Occupational Health and Safety (OH&S) Division		(709) 729-4444 (24hr)
Placentia Hospital		709-227-2061
Placentia Emergency Department		709-227-2013
Placentia Fire Department		709-227-2151
		709-227-3200
Town of Placentia		709-227-2151
Marine Atlantic		1-800-341-7981
Port of Argentia		709-227-5502
Town of Fox Harbour		709 227-2271
Placentia Bay Veterinary Clinic, 295 Main Hwy, Bay Roberts, NL, A0A 1G0		709-786-1571
PROVINCIAL RESOURCES		
Ambulance		911
Emergency Measures Organization		709-229-3703
Environment and Lands - Environment Officers		709-729-2550
Health Regional Office		709-229-1551
Regional Medical Health Officer		709-229-1571
Health and Comm. Services Placentia		709-227-0130
Works, Services and Transportation		
Freshwater – Placentia Hwy Depot		709-227-1351

Oil Spill Response (24 Hr.)	1-800-563-9089
FEDERAL RESOURCES	
Environment Canada	
General Weather Forecast	709-772-5534
Environmental Protection	709-772-5585
Canadian Coast Guard – St. John's	709-772-5146
General Inquiries	709-772-5151
Environmental Emergencies	709-772-2083
ENVIRONMENTAL EMERGENCIES	
Environment Canada	1-800-563-9089
	709-772-2083
Eastern Canadian Response Corporation (Level III spills)	1-(613)- 930-9690
FISHERIES, FORESTRY AND AGRICULTURE	
Report a Forest Fire	1-866-709-3473
Provincial Forest Fire Communications Centre	709-637-2328
Eastern Region	709-256-3473
Environment Canada	
Environment Canada – Newfoundland and Labrador Region (24hrs 7days/wk.)	709- 772-4285/5097
	709-772-7745
Federal Department of Fisheries and Oceans	
Division Manager – Science Branch Marine Environment and Habitat Management	709- 772-2442/5562
ADMINISTRATION CONTACTS	
Waste Disposal	
Robin Hood Bay Waste and Recycling	311
Port of Argentia	
General Manager	
Adam Greene Brent Pomroy	709-227-1805 (Cell)
	b.pomroy@portofargentia.ca
PORT OPERATIONS CO-ORDINATOR	
Blair McGrath	709-227-1934 (Cell)
	709-227-4702 (O)
	b.mcgrath@portofargentia.ca
HSEQ COORDINATOR	
Jackie Jones	709-682-3886 (Cell)
	j.jones@portofargenita.ca

6.0 Auditing

The WMP has been developed for the Project in accordance with all applicable legislations, guidelines, bylaws, and authorizations. The WMP is effective upon approval and valid throughout all phases of the Project. The WMP will be reviewed on an annual basis and updated and distributed as needed. A copy of the WMP will be maintained in Argentia Renewables office and will be available on the Project site.

The annual audit will be conducted to help assess waste generation, identify opportunities for improvement, and implement strategies to reduce waste. The audit will be conducted by a third party and will identify deficiencies and opportunities for improvement related to waste management for the Project. A report will be compiled for the senior Project team and opportunities will be implemented where possible. The waste management process would include a review of the goals related to waste management; these include:

- Environmental Values: Improving sustainability due to environmental concerns and Argentia Renewables values.
- Cost Reduction: Identifying opportunities to reduce costs.
- Employee and Customer Satisfaction: Meeting the expectations of environmentally conscious employees and key stakeholders.
- Supply Chain or Partner Requirements: Responding to requests for waste reduction efforts from supply chains or partners.
- Certification: Meeting certification requirements.
- Waste Stream Analysis: Waste auditors examine the regular waste stream. They sort through bags of waste, record data, and analyze it. The goal is to understand the types of waste, what is being thrown away, recycled, or diverted.
- Contamination Levels: Evaluating the contamination in each waste stream (e.g., recyclables mixed with non-recyclables).
- Recycling and Disposal Amounts: Quantifying how much waste is recycled versus sent to landfills or incineration.

By conducting a waste management audit, Argentia Renewables can identify cost-saving opportunities, improve environmental performance, and move toward more sustainable waste practices.

7.0 Plan Review and Updating

The WMP is a dynamic document that may require updates to address unforeseen waste scenarios or improvements identified through audits. Such revisions will be undertaken throughout the life of the Project to ensure alignment with evolving circumstances, fostering open communication across all levels, and facilitating continuous enhancement.

The WMP review and update will include several key components to enhance waste reduction, recycling, and sustainability. The review will also provide an assessment of the current WMP and identify the strengths of the WMP, review cost implications, and identify opportunities for future improvements. Results from the audit will also be incorporated into the WMP. Employee and stakeholder feedback will be taking into consideration when the WMP is updated.

During the Construction Phase of the Project, the WMP will be reviewed and updated quarterly to ensure it is efficient and effective. An annual review and update of the WMP will be conducted during the Operation and Maintenance Phase of the Project. A more frequent review and update of the WMP will be completed during the Decommissioning and Rehabilitation phase of the Project as there will be more waste being removed from the Project area during this phase.

Appendix O

Hazardous Material Training Plan

Client:	Pattern Energy
Project:	PATT-2401
Document #:	PATT-2401-HPL-002_P1
Title:	Argentia Renewables Hazardous Materials Training Plan
Revision:	P1
Date:	21st March 2024
Issued For:	Issued for Review

Craig Ryan	21-March-2024
Prepared By	**Date**

Don Stevens	21-March-2024
Approved By	**Date**

Revision History			
Revision	Date	Issued For	Issued By
P1	21-Mar-2024	Client Review	Y. Emioladipupo

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1 OBJECTIVE

This standard outlines the requirements for hazardous material training and performance within the Argentia Renewables Site. It aims to provide the appropriate information and tools for consistency in its application while retaining appropriate site-specific practices that meet business unit needs.

This Standard covers the mandatory practices that assure adequate training and qualification of personnel whose job duties impact and influence hazardous material response. The program includes initial, and refresher training and qualification. This Standard is aligned and consistent with the Pattern AMS 102 Training Program, which provides a benchmark for new (and revised) workplace learning activities and materials.

2 OVERVIEW

This training program's main objective is to equip emergency services responders with comprehensive skills across various professions, ensuring their competence during the initial stages of project production startup. The plan establishes a framework outlining training requirements for a three-year period preceding the commencement of manufacturing activities. Specifically targeting firefighters and fire officers, both roles are deemed essential for fire service departments. All courses are mandated to be sourced from a recognized Canadian Fire College, with a particular emphasis on IFSAC and ProBoard certification.

Additionally, this plan integrates training mandates for the Hazardous Materials Response team, supplementing the standard requirements outlined in Argentia Renewables Emergency Response Plan. The Hazardous Material Response Team undergoes training beyond the ERP specifications, emphasizing familiarity with roles and responsibilities in HazMat Response.

The Training Coordinator and Emergency Coordinator have the responsibility of ensuring the Hazardous Materials Response Team adheres to the plan's guidelines. Throughout the program, meticulous documentation of training hours, certifications, and acquired skills will be maintained by the Training Coordinator. To uphold compliance with Canadian regulations and industry standards, regular evaluations and feedback sessions will be conducted, identifying areas for improvement.

3 REFERENCED DOCUMENTS

NFPA 1001	Standard for Fire Fighter Professional Qualifications
NFPA 1072	Hazmat Awareness & Hazmat Operations
DOC-2022-1022	Environmental Assessment Guidance for Registration of Onshore Wind Energy Generation and Green Hydrogen Production Projects
CAN/CSA-Z731-95	Emergency Planning for Industry
Newfoundland and Labrador Regulation 5/12	Occupational Health and Safety Regulations, 2012
AMS 102	Training Program

All applicable Federal, Provincial & Local Regulatory Authority requirements and regulations

4 DEFINITIONS AND ABBREVIATIONS

Pertinent terms are defined in the Argentia Renewables Emergency Response Plan.

5 RESPONSIBILITIES

Below are the primary Argentia Renewables emergency roles and responsibilities as required under this Hazardous Materials Training Plan. All Argentia Renewable employees and subcontractors are responsible for knowing the requirements of and acting in accordance with the Site-Specific Emergency Plan.

	Facility Manager (FM)	HSE Advisor or Designate	Emergency Coordinator	Training Coordinator
Management				
Implement this procedure where applicable throughout the operation of the plant.	●	●	●	
Ensure that employees are trained, competent and experienced prior to starting work.		●	●	
Obtain and maintain available on site the current licenses and training in compliance with the regulatory standards for all employees.			●	●
Implement this procedure where applicable throughout the project.	●	●	●	
Ensure that workers are trained, competent and experienced to work prior to work.	●		●	
Planning				
Review the content of training documentation.			●	●
Ensure that the training record form is filled after each training.			●	●
Plan training for employees including “refresher” training.			●	●
Record all the training documentation and certification in a matrix.				●
Operations				
Provide a setup location to perform in-house training.			●	●
Make sure no employee will go on a project or in a facility without the	●	●	●	

appropriate training related to his work.				
Follow emergency and evacuation rules	●	●	●	

6 TRAINING REQUIREMENTS

A thorough three-year training program has been devised to comprehensively equip firefighters and hazardous materials (HAZMAT) technicians in effectively addressing fires, ammonia releases, and hydrogen fires. This collaborative effort with a Canadian fire college is specifically designed for the training of a process plant fire department. The plan provides a step-by-step approach, ensuring that local candidates progress through all necessary training requirements in a logical and chronological sequence.

6.1 GENERAL ORIENTATION

Before starting work on any Argentia Renewable site, all employees (staff, union and subcontractors), subcontractors and visitors must receive a safety orientation, using the Pattern OMS 300 Site Orientation guideline. Employees must sign an orientation acknowledgement once the orientation is complete and understood.

Argentia Renewables Site Specific Safety Orientation shall include but is not limited to:

- Description of the Project
- General site information
- Incident and Injury reporting
- Emergency Phone Numbers
- Emergency Procedures
- Site Specific Hazards
- P.P.E. Requirements
- Environmental Aspects

6.2 HSE TRAINING

Argentia Renewables has the responsibility to train Employees and Emergency Responders for each facility and shift, following legislative requirements, and industry best practices.

6.2.1 EMPLOYEE TRAINING

All employees and visitors will receive Specific Emergency awareness training during their orientation training, which consists of but not limited to:

- Emergency contacts and muster points
- Crisis Management procedure / Emergency Evacuation Plan including emergency routes and assembly areas to be used.
- Ammonia Exposure Control Plan
- Respiratory Protection & Fit Testing (as required)
- Accident reporting procedures.
- Location of first-aid kits and identification of first-aid providers.
- WHMIS
- Chemical spill on-site reporting procedures.
- Regulatory Training (Working at Heights, Confined Spaces)
- Shelter-in-Place.
- Hydrogen properties and behaviour
- Safety requirements for working with or around Ammonia/Hydrogen.
- Procedures for handling ammonia/hydrogen leaks and spills, and the appropriate actions to be taken in case of fire.
- Alarms and other emergency communication systems to be used both at the work area and from the operations department.
- Operating procedures and safe work practices applicable to the employee's tasks

An annual review of the above topics will be conducted with all employees.

ERT TRAINING

A proficient emergency response team will be on standby round the clock to address site emergencies including medical incidents, fires, and emergency releases. The training program detailed in Appendix A spans three years and delineates quarterly training requirements for the ERT. The initial two years of the program concentrate on ERT training, while the third year emphasizes qualifications for emergency coordinators.

All members of the ERT will be trained in the following areas;

• Standard First Aid

- High Angle / Confined Space Rescue
- Fire Training
- Mock-up Drills
- Spill Response Training
- Ammonia / Hydrogen emergencies
- Wind Tower emergencies
- All members will be trained to the NFPA 1072 standard “Hazmat Awareness & Hazmat Operations”.

Other HSE/ERT trainings will be given based on specific work requirements.

For further details on the two-year training plan refer to Appendix A.

6.2.2 PROVINCIAL REGULATORY HSE TRAINING

On top of the Argentia Renewables minimum trainings, all employees must make sure to take the following Regulatory HSE Training. These include, but not are limited to:

- WorkSafe NL approved Fall Protection training
- WorkSafe NL approved Confined Space training.

6.3 TRAINING RECORDS

All personnel are required to sign a Training Acknowledgment form upon completion of any training. All records shall be kept on the site with copies being sent to the Training Coordinator for electronic data entry and record keeping.

6.4 MINIMUM REQUIREMENTS

Before assuming the role of an emergency response technician, completion of all specified training is mandatory to guarantee that minimum qualification and training standards are achieved.

6.5 PROOF OF COMPETENCY

As indicated in section 5 of the present guideline, Argentia Renewables management team must obtain and maintain available on site the current licenses and proofs of training and qualification in compliance with the regulatory authorities and minimum requirements set by Argentia Renewables for all workers before they are assigned to a role or duty.

Qualification of workers includes testing, skill demonstration (when appropriate), and an Emergency Response Coordinator assessment that the person is competent to independently carry out the designated tasks safely.

6.6 REFRESHER AND SUPPLEMENTAL TRAINING

The purpose of refresher training is to reconfirm competence. Refresher and supplemental training shall be provided to members of the ERT on a frequency as defined in the development plan.

If specified refresher training is not successfully completed within the time interval established for the job, the individual's qualification shall lapse, and the individual will no longer be deemed competent to do the job until requalification is achieved.

All members will be expected to participate in an eight-hour ERT training session each month to maintain efficiency. Training sessions will include theory and practical evolutions.

7 EMERGENCY RESPONSE EQUIPMENT AND VEHICLES

Emergency response equipment and vehicles should be easily accessible for any potential emergency. Furthermore, it's essential to conduct weekly inspections of emergency response equipment. For a comprehensive list of emergency equipment, please consult the Argentia Renewables Emergency Response/Emergency Action Plan. Below are supplementary requirements for equipment/vehicles necessary for the emergency response team.

Firefighting Vehicles / Apparatus	
100-foot aerial ladder with aa 3000 gpm pump, c/w 1 plumbed waterway (along ladder way).	1
Fire Truck, 2000 gpm with Class A and B foam capacity.	1
11' Rescue Body/Truck, 4x4, Roll Out Trays, In-Cab Custom Medical/SCBA Cabinet, Booster Reel, Foam System, NFPA Light Package.	1
2 x 24 ft trailers enclosed 1 outfitted for decontamination 1 outfitted for equipment, dressing etc.	2

¾ or 1 ton truck with cap on bed. Trailer towing package required.	1

8 PERIODIC REVIEW / AUDIT

This Standard shall be reviewed and revised as necessary and, at a minimum, not later than three years from the date of the last review.

Appendix A

Emergency Response Team Training Plan Table

Argentia Renewables Emergency Response Training Plan													
Course	Hours	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Firefighter I Certification NFPA 1001	200	X											
Hazardous Materials Awareness NFPA 1072	8	X											
Incident Command Awareness ICS 100	6	X											
	214												
Firefighter II Certification NFPA 1001	100		X										
Hazardous Materials Awareness NFPA 1072	40		X										
Emergency Medical Responder	120		X										
	260												
Hazardous Materials Technician	80			X									
Industrial Firefighting techniques	40			X									
Incident Command Awareness ICS 200	16			X									
	136												
Advanced Firefighting Techniques	40				X								
Ammonia & Hydrogen Incident Response	40				X								
	80												
Technical Rescue Training	35					X							
Leadership & Management NFPA 1031	40					X							
	75												
Incident Command Awareness ICS 300	16						X						
Pump Operations	36						X						
	52												
Advanced Hazardous Materials Response	40							X					
Emergency Planning & Preparedness	40							X					
	80												

Argentia Renewables Emergency Response Training Plan													
Course	Hours	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Fire Officer Professional Development													
										X			
Fireground Management	18									X			
Fire Officer Level I NFPA 1021	40									X			
Fire Officer Level II NFPA 1021	40										X		
Fire Department Safety Officer	35										X		
ICS Operations Sections Chief	24										X		
ICS Planning Sections Chief	24											X	
NFPA Fire Inspector I	40											X	
Emergency Services Instructor Level I	40									X	X	X	X
Participation in workshops, conferences, and seminars	40									X	X	X	X
Mutual Aid Joint Exercise	24									X	X	X	X
Cross-Training opportunities with Mutual Aid Fire Departments	40									X	X	X	X
	365												
Total Hours	1262												

Appendix P

Public Participation Plan

Appendix P

Public Participation Plan

Argentia Renewables Project

Issued by: Argentia Renewables Wind LP
Project Facility: All Locations
Affected Facility: All Locations

Effective Date: July 31, 2024

Document Maintenance and Control

Argentia Renewables Wind LP (Argentia Renewables), an affiliate of Pattern Energy Group LP (Pattern), is responsible for the distribution, maintenance and updating of this Public Participation Plan for the Argentia Renewables Project (the "Project"). This plan will be updated when needed for reasons including but not limited to reflecting changes in site-specific implementation, updating contact information, changes to scientific methods and survey best practices, and adding results of post-construction monitoring.

Document Version

Version #	Section(s) Revised	Prepared By	Approved By	Date Issued

Index of Major Changes/Modifications in Latest Version

Item #	Description of Change	Relevant Section

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1.0 Introduction

The Public Participation Plan (PPP) has been prepared by Argentia Renewables Wind LP (Argentia Renewables), an affiliate of Pattern Energy Group LP (Pattern) for the Argentia Renewables Project (the Project), which involves the planning, construction, operation and maintenance, and eventual decommissioning and rehabilitation of an onshore wind energy generation facility (Argentia Wind Facility) and a green hydrogen and ammonia production, storage, and export facility (Argentia Green Fuels Facility). The Project is located on Port of Argentia (POA) property located within the Town of Placentia, Newfoundland and Labrador (NL). This plan is intended to address the scope of work noted in Section 4.5 of the "Guidance for Registration of Onshore Wind Energy Generation and Green Hydrogen Production Projects" (Doc-2022-1022 issued by Department of Environment and Climate Change, GNL April 2023).

1.1 Legal

This document has been developed in compliance with the requirements of the Government of Newfoundland and Labrador. As a component of a Project Registration under the **Environmental Protection Act (Environmental Assessment Regulations)**, the document is considered to reflect a commitment by Argentia Renewables to carry out the actions described and to report on results achieved.

1.2 Scope

The PPP is based on engagement and consultation with stakeholder and Indigenous Peoples during the Environmental Assessment (EA) process, and articulates the commitments made to open and transparent communication over the life of the Project. The plan covers the duration of Project planning through to decommissioning, detailing how and when public and key stakeholders' participation will occur. It will be available to, and utilized by, relevant staff for reference in planning and executing engagement activities.

1.3 Objectives

The PPP has been developed to ensure that interested and affected parties, including local communities, are engaged in a meaningful way during all phases of the Project. The aim of public engagement is to inform and involve local communities, initiate, and maintain interest in the Project, and gather input. This PPP sets-out the objectives, methods, and opportunities for public participation during the Planning, Construction, Operations and Maintenance, and Decommissioning and Rehabilitation phases of the Project. It is intended to be flexible to meet the evolving needs of the Project and its stakeholders.

Argentia Renewables developed this Plan to achieve the objectives of:

- Meaningful two-way engagement;
- Timely information sharing and responses;
- Tailored engagement to meet the various interests and needs of stakeholders; and
- Informed decision making based on feedback gathered.

1.4 Roles and Responsibilities

Argentia Renewables will designate public engagement roles and responsibilities to various staff, who will be tasked with engagement and consultation as well as monitoring and evaluation. The following roles have specific duties regarding public engagement, as outlined below:

Project Coordinator:

- Coordinates Public Information Sessions.
- Manages and updates the Stakeholder Engagement Log.
- Responds to general Project inquiries and relays other inquiries, concerns, and recommendations to the appropriate personnel.
- Responsible for establishing and managing a local office.

Community Relations Advisor:

- Coordinates the development of communications materials.
- Advises on Public Information Sessions.
- Responds to inquiries, concerns, and recommendations in coordination with the Project Coordinator.
- Responsible for maintaining a Project phone number, email address(es), webpage, and Stakeholder Engagement Log.

Team Leads / Subject Matter Experts:

- Respond to inquiries, concerns, and recommendations in their fields of expertise.

Project Lead:

- Provides support on inquiries and concerns, as needed.
- Responds to select inquiries, concerns, and recommendations.

2.0 Engagement Strategy

Argentia Renewables' approach to building successful facilities is to work closely with residents in a way that is respectful and fits the needs of the communities that host the Project. Pattern's *Statement of Community and Cultural Commitments* (Appendix P-1) serves as a cornerstone for Argentia Renewables' engagement approach throughout the lifecycle of the Project. At the core of this approach is the establishment of trust and accountability with local communities.

Argentia Renewables will strive to create customized engagement experiences for the local community. As a proactive communicator, the aim is to provide clear and transparent information that is easily understood by recipients. The engagement strategy for the Project consists of the following approaches, which have been, and will continue to be, implemented:

1. Cultural Awareness Training: Relevant staff undergo cultural awareness training to ensure respectful communication and understanding of cultural norms.
2. Local Community Liaison: A dedicated local community liaison will be appointed to act as a bridge between Argentia Renewables and local communities.
3. Inclusive Meetings: Public engagement meetings and consultations will be organized at convenient times and locations, considering local and cultural events and practices, to ensure maximum participation.
4. Participatory Approach: Local community members will be encouraged to actively participate in decision-making processes related to the Project, considering their traditional and/or historical knowledge and issues/concerns brought forward.
5. Accessibility: Engagement is developed to meet communities where they are, and in a manner appropriate to the community, including in-person meetings, virtual meetings, mailouts, and the posting of Project information online. Open house style events are to be held in accessible buildings, and printed materials are to be available at every meeting, to be shared with individuals who cannot attend. Content is to be presented in a clear, straightforward manner with experts available to expand on any points needing clarification, or to read content aloud.

Argentia Renewables is committed to engaging the public in a culturally sensitive manner, recognizing the distinctness and diversity of different communities. Implementing the above engagement strategy will involve:

- Applying customized engagement and communication tools that are effective for each audience.
- Encouraging stakeholders to participate actively in the Project approval process.
- Establishing a brand for the Project that generates pride for local stakeholders in having their community host the Project.
- Delivering community benefits that meet at least one of the following objectives:
    - Produce local and regional economic benefits;
    - Advance community initiatives;
    - Enhance ecological preservation, restoration, and education;

- Foster health and wellness;
- Promote the needs of youth; and
- Support cultural awareness.

3.0 Communication and Engagement Tools

Argentia Renewables has developed a set of communication and engagement tools intended to improve consultation and provide consistency in sharing Project information and responding to questions. Table P-3.0-1 provides the list of continuous communication tools available to stakeholders at any time.

Table P-3.0-1 Continuous Communication Tools.

Tool	Description
Project website	A regularly updated Project website is hosted at https://patternenergy.com/projects/argentia-renewables/.
Email address	argentiarenewables@patternenergy.com
Toll-free number	(844) 486-3323
Local office	Location to be determined

The timely dissemination of information is critical to building trust and transparency with communities. Table P-3.0-2 provides the list of tools used to share Project updates and important notifications with the public.

Table P-3.0-2 Information Distribution Tools.

Tool	Description
Email distribution list	Interested stakeholders will be invited to add their email address to the Project's public information email distribution list. This distribution list will be used to share notifications, PSAs, newsletter, and other information.
Newsletter	A quarterly newsletter will be posted to the website and distributed to recipients on the email distribution list. The newsletter will provide regular updates on Project activities, upcoming events, and spotlight team members as a way to introduce them to the community.
Social media	Social media pages page will be used to share Project information and updates, and notification for public information sessions.
Direct mailouts and posters	Public notifications, such as direct mailouts via Canada Post, and posters will be used to raise awareness of public information sessions.
Press releases	Press releases will be used to inform the media of public information sessions and other project updates.
Public Service Announcements (PSA)	PSAs will be used to inform local residents of upcoming activities, such as construction work, transport of goods, traffic advisories, etc. They will be shared with all media, local websites, including the Town of Placentia and the Port of Argentia, and via social media.

Engaging in meaningful two-way communication requires actively involving stakeholders in the conversation. Several engagement tools will be used to generate interest and participation from a variety of stakeholders and the public, as described in Table P-3.0-3.

Table P-3.0-3 Community Engagement Tools.

Tool	Description
Community Liaison Committee	A community liaison committee will be established to foster constructive two-way information sharing between Argentia Renewables and the local community. Invitations will be extended to community groups, organizations, and residents to participate in the committee.
Public information sessions	Public information sessions will be hosted in locations on the Cape Shore, at key times during Project planning to provide status updates and notice of upcoming activities. In addition, topic specific sessions will be held to provide information on business and employment opportunities.
Community social events	Social events will be hosted in the community to provide an opportunity to meet the Project team and ask questions in a relaxed, informal setting.
Community and industry events	The Project will participate in events hosted by industry partners and the community, such as conferences, tradeshows, and social events.
Meetings	Face-to-face and virtual meetings will be hosted with key stakeholders as a way to provide up-to-date information and discuss topic specific areas of interest. PowerPoint presentations are often used to aid discussions.

3.1 Stakeholder Areas of Interest

Stakeholders have varying interests and needs when it comes to Project information. Tailoring the tools and methods used to communicate with stakeholders will enhance participation and reach of information dissemination. Table P-3.1-1 lists the likely areas of interest.

Table P-3.1-1 Stakeholder Areas of Interest.

Stakeholder Category	Areas of Interest	Engagement Method/Tool
General Public	• Project size and scope • Construction schedule • Community infrastructure and resources (roads, water supply, waste, fire services) • Land and resource usage (hunting, fishing, ATVing, berry picking) • Public safety • Increased traffic • Visual aesthetics of the Town • Property values • Local benefits • Sponsorships	• Project website • Project office • Project email and toll-free number • PSAs and public notices • Newsletter • Email distribution list • Community Liaison Committee • Social media • Public information sessions • Local Benefits Plan • Complaints resolution process
Municipalities	• Public safety • Community infrastructure and resources (roads, water supply, waste, fire services) • Tourism • Employment and business	
Local interest groups and community organizations	• Housing • Trail network • Sponsorships	

Stakeholder Category	Areas of Interest	Engagement Method/Tool
Government	• Compliance with EA commitments and environmental monitoring • Stakeholder and Indigenous engagement	• Meetings, as needed • Record of engagement • Local Benefits Plan • Complaints resolution process
Industry	• Project progress • Construction schedule • Employment and business	• Project website • Email distribution list • Supplier development sessions
Business Community	• Business opportunities • Supply chain • Effects on existing businesses	• Project website • Project office • Email distribution list • Supplier development sessions • Local business directory
Tourism/Arts and Culture	• Effects on tourism • Hotel availability • Ferry Service	• Project website • Project office • Public information sessions • Meetings, as needed
Education	• Project progress • Types of professions required	• Project website • Email distribution list • Training and employment information sessions
Environmental Advocacy	• Compliance with EA conditions • Environmental monitoring and follow-up	• Project website
Labour and Unions	• Types of skilled trades required • Timing of hiring • Permanent jobs	• Project website • Training and employment information sessions
Media	• Project status and schedule • Employment and business • Site events or incidents	• Press releases • PSAs

4.0 Inquiry and Complaints Resolution Protocol

A public inquires and complaints resolution process will be established to clearly communicate Argentia Renewables' process for receiving, investigating, resolving, and closing questions and concerns from the public. Table P-4.0-1 outlines the protocol. A formal inquires and complaints resolution process will be developed, in consultation with the Community Liaison Committee, and shared with the public via the Project website.

Table P-4.0-1 Inquiry and Complaints Resolution Protocol.

Receipt of Communication	Action	Closure
Phone call Email Digital comment form	• Receipt of communication is entered into the Stakeholder Engagement Log with date and type of communication. • It is then prioritized by immediacy of request. • An initial acknowledgment of receipt of communication will be provided with a commitment to provide a response within 10 business days, if not of an urgent matter. • The matter will be investigated, and a response prepared by the Project team.	• Project response is issued to the respondent with a request for confirmation that the matter has been resolved to their satisfaction. • If respondent confirms that they are satisfied, the communication is logged as closed in the Stakeholder Engagement Log. • If the respondent is not satisfied, the issue will be escalated to Project management for resolution.
Public event or venue	• Receipt of question or complaint at a public event can be addressed directly with the individual. • After the event, the communication will be documented in the Stakeholder Engagement Log, noting no further action required. • If the question or complaint requires follow-up, the information will be captured, and the individual will be advised that a team member will follow-up with a response.	• The communication exchange is documented in the Stakeholder Engagement Log, noting the actions taken and response provided. • If respondent confirms that they are satisfied, the communication is logged as closed in the Stakeholder Engagement Log. • If the respondent is not satisfied, the issue will be escalated to Project management for resolution.
Media Inquiry	• Refer media to Pattern's media relations contact	• Inquiry is closed when a response is provided.

5.0 Engagement During Project Phases

Stakeholder interests and needs will change as the Project progresses through its lifecycle. Engagement activities will be tailored to the specific phase of development. Continuous communication and information distribution tools outlined in Section 3.0 will be used during all phases. Phase-specific engagement is described below.

5.1 Planning

During the planning phase, Argentia Renewables will finalize Project plans in preparation for the Construction Phase. During this period, Argentia Renewables will:

- Develop a local Benefits Plan, including a Gender Equity, Diversity and Inclusion Plan, in consultation with stakeholders. The Benefits Plan will focus on fostering diverse and inclusive relationships within the community and contribute positively to its growth and prosperity, maximizing local benefits, ensuring positive and lasting impacts on the region through financial support for causes that matter to the community;
- Host public information sessions, including topic specific sessions on labour and employment requirements and business opportunities;
- Establish a Community Liaison Committee with participation from diverse stakeholders to ensure a wide range of expertise and perspectives are engaged. The committee will meet quarterly during planning and Construction Phase and the early years of Operation and Maintenance Phase. The goal of the committee will be to facilitate discussions regarding Project impacts and issues and share relevant information with the broader community.
- Create a quarterly newsletter with the aim to educate the public on various aspects of the Project, and to highlight progress, schedule of upcoming activities, and team members.

5.2 Construction Phase

During the Construction Phase, Argentia Renewables will maintain ongoing communication with the public to keep them informed about Construction Phase progress, potential disruptions, and mitigation measures. Local employment and procurement will be prioritized to ensure that the benefits of the Project directly reach local communities. Argentia Renewables will work with its contractors to ensure they are aware of engagement requirements and comply with commitments made. Public engagement activities during this phase will include:

- Implementation of the Benefits Plan and Gender Equity, Diversity, and Inclusion Plan;
- A groundbreaking press release and reception at the onset of the Construction Phase;
- Posting construction signage and placing flagging in relevant areas to advise the public to exercise caution; and
- Public information sessions and community events to continue face-to-face community engagement.

5.3 Operations and Maintenance Phase

During the Operations and Maintenance Phase, Argentia Renewables will continue to engage with stakeholders through established channels, including the Community Liaison Committee, to address issues or concerns relating to operations such as noise, vibration, marine traffic, and land and resource use. Public engagement activities during this phase will include:

- A public announcement and press release on the commencement of the Operation and Maintenance Phase;
- A Grand Opening press conference and reception for stakeholders, Indigenous Peoples, media, and the community; and
- The provision of facility and site tours to local government, service organizations, schools and other interested parties.

5.4 Decommissioning and Rehabilitation Phase

Argentia Renewables intends for the Project to remain operational for as long as possible. Where feasible, facilities will be repowered by upgrading equipment and incorporating technological advancements. Upon the eventual Decommissioning and Rehabilitation Phase of the Project, Argentia Renewables will collaborate with industry stakeholders and the public to implement decommissioning and rehabilitation plans. The public will be made aware of Project developments relating to repowering, decommissioning, and rehabilitation. Public engagement during this phase will include:

- Meetings and presentations on the development of a Decommissioning and Rehabilitation Plan; and
- Public information session to gather feedback on community expectations for the area.

6.0 Indigenous Engagement

Argentia Renewables will seek opportunities to work with Indigenous Peoples to share knowledge, create employment and contracting opportunities, and explore ways in which Indigenous communities can directly benefit from the Project. Argentia Renewables is committed to engaging, consulting, and partnering with Indigenous communities on an ongoing basis.

6.1 Miawpukek First Nation

Miawpukek Mi'kamawey Mawi'omi, also known as Miawpukek First Nation (MFN), is a First Nations Reserve on the south coast of Taqamkuk (Newfoundland) (MFN, 2024). Miawpukek was historically used by Mi'kmaq as a semi-permanent camping site, and became a permanent community around 1822 (MFN, 2024). The Miawpukek Reserve was officially designated as Samiajij Miawpukek Indian Reserve in 1987 under the Federal *Indian Act* (MFN, 2024). There are about 3,060 members of the MFN, living both on and off the Reserve (MFN, 2024).

Argentia Renewables and MFN have signed a Memorandum of Understanding (MOU) to collaborate on the Project and to establish a Project Working Group. Engagement with MFN has been ongoing since the beginning of the Project, and will continue throughout all Project phases.

6.2 Qalipu First Nation

Qalipu Mi'kmaq First Nation (QFN) was established as an Indigenous Band under the Federal *Indian Act* in 2011, and consists of approximately 24,000 members (HNL, 2024). While QFN does not manage reserve lands and has no official land base, its members reside within 66 communities across the island (HNL, 2024). To represent their members, QFN maintains a central administrative office in Corner Brook and satellite offices in Glenwood, Grand-Falls Windsor, St. George's, and Stephenville (HNL, 2024).

Engagement with QFN has been ongoing since the beginning of the Project and will continue throughout all Project phases. Argentia Renewables has an informal data sharing agreement with the QFN for bat survey data related to the Project and looks forward to expanding upon this relationship with similar collaboration as the Project progresses.

6.3 Indigenous Engagement Activities

In addition to the continuous communication and information distribution tools utilized for public and stakeholder engagement (Section 3.0), Argentia Renewables will directly engage with Indigenous Peoples through:

- Chief and Council Meetings;
- Community information sessions; and
- Development of the Gender Equity, Diversity and Inclusion Plan

6.4 Memorandum of Understanding

The Memorandum of Understanding (MOU) with Miawpukek First Nation set the foundation for a strong relationship based on mutual respect and collaboration. The MOU established a commitment for deeper engagement in areas of interest to MFN, such as the environment and economic benefits. Argentia Renewables will maintain its commitments in the MOU, and seek opportunities for new areas of collaboration and information sharing.

7.0 Emergency Response

Emergency Response Protocols and procedures are described in full in the Emergency Response/Contingency Plan (Appendix M). If emergency situations occur at the plant site or Argentia Wind Facility, the public will be informed timely and accurately about the nature of the incident and the measures taken. The Community Liaison Committee will be engaged in the event of an emergency to help streamline communication and ensure the safety and well-being of area residents and businesses.

Argentia Renewables will conduct regular public awareness campaigns to educate the community about emergency procedures, communication channels, and the importance of staying informed. Argentia Renewables will also establish a feedback mechanism to gather input from community and industry stakeholders, allowing for continuous improvement of the communication strategy. In addition, Argentia Renewables will implement the following systems:

- Invest in an integrated alert system that can send alerts via text messages, phone calls, and emails to residents and industry personnel.
- Utilize social media for real-time updates and to disseminate information quickly. Establish official accounts for emergency communications.
- Install sirens and public address systems in critical locations to broadcast emergency alerts.

8.0 Monitoring and Reporting

Argentia Renewables collects and logs any Project-specific interactions into a Stakeholder Engagement Log. The Stakeholder Engagement Log contains information on interactions including dates, topics discussed, who was interacted with, and the response provided. Communications are categorized and funnelled to the appropriate responder to resolve inquiries, complaints, and recommendations, as noted in Section 4.0. The Stakeholder Engagement Log enables the Project Coordinator to monitor interactions and identify trends or reoccurring issues to be addressed.

9.0 Evaluation and Updating

The PPP is a living document and will be adaptable to changing community needs, cultural contexts, and Project dynamics. The PPP will be reviewed and revised, if required, upon:

- The start of a new calendar year.
- The start of a new Project phase.
- Relevant feedback originating from engagement efforts.

Updates and changes will be incorporated on an ongoing basis to ensure the continued relevance of this document.

10.0 References

Hospitality Newfoundland and Labrador [HNL]. (2024). *Qalipu First Nation*. https://members.hnl.ca/list/member/qalipu-first-nation-36234

Miawpukek First Nation [MFN]. (2024). *About*. https://mfngov.ca/about/

Appendix P-1: Statement of Community and Cultural Commitments

Statement of Community and Cultural Commitments

Argentia Renewables is committed to developing lasting partnerships with the local communities where we have a presence. We believe being a good neighbor benefits both the areas where we operate and our company's long-term success. We are committed to listening to and respecting the landowners and communities that host our projects and being involved in engagement and giving activities for the long term. To this end, Argentia Renewables strives to:

- Respect the heritage and history of Indigenous Peoples in all communities.
- Treat landowners and community members with respect and work hard to gain their trust.
- Share information and solicit input to build local relationships while respecting and considering all points of view.
- Explore ways to support the growth of healthy and vibrant communities where we work through sponsorships and donations.
- Identify and assess potential positive and negative community and cultural impacts to inform our planning and decision-making.
- Design and construct our projects and operate our facilities in a manner that complies with all siting regulations.
- Work to monitor, report, and continually improve our overall performance, incorporating feedback into our outreach and giving programs.

Appendix Q

Workforce and Employment Plan

Appendix Q
Workforce and Employment Plan

Argentia Renewables Project

Issued by: Argentia Renewables Wind LP
Project Facility: All Locations
Affected Facility: All Locations

Effective Date: July 31, 2024

Document Maintenance and Control

Argentia Renewables Wind LP (Argentia Renewables), an affiliate of Pattern Energy Group LP (Pattern), is responsible for the distribution, maintenance and updating of this Workforce and Employment Plan for the Argentia Renewables Project (the "Project"). This plan will be updated when needed for reasons including but not limited to reflecting changes in site-specific implementation, updating contact information, changes to scientific methods and survey best practices.

Document Version

Version #	Section(s) Revised	Prepared By	Approved By	Date Issued

Index of Major Changes/Modifications in Latest Version

Item #	Description of Change	Relevant Section

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1.0 Introduction

The Workforce and Employment Plan (WEP) has been prepared by Argentia Renewables Wind LP (Argentia Renewables), an affiliate of Pattern Energy Group LP (Pattern) for the Argentia Renewables Project (the Project), which involves the planning, construction, operation and maintenance, and eventual decommissioning and rehabilitation of an onshore wind energy generation facility (Argentia Wind Facility) and a green hydrogen and ammonia production, storage, and export facility (Argentia Green Fuels Facility). The Project is located on Port of Argentia (POA) property located within the Town of Placentia, Newfoundland and Labrador (NL). This plan is intended to address the scope of work noted in Section 4.5 of the "Guidance for Registration of Onshore Wind Energy Generation and Green Hydrogen Production Projects" (Doc-2022-1022 issued by Department of Environment and Climate Change, GNL April 2023).

This WEP outlines recruitment strategies, positions required, timelines for employment, and a reporting schedule for workforce and employment statistics for the Project. The Project will provide long-term benefits to the Argentia area and the province of Newfoundland and Labrador through various employment opportunities and increased business capacity. The WEP has been developed in consultation with the Newfoundland and Labrador Department of Immigration, Population Growth and Skills (NL DIPGS) and through dialogue with the Office of Women and Gender Equity.

Argentia Renewables seeks to hire local members of the community and is committed to offering specialized training courses relating to renewable energy and wind technology. Training opportunities will improve job prospects and long-term employment of local residents and bring long-term benefits to the local and regional area. Argentia Renewables facilities will bring direct and indirect economic benefits by boosting local service industries. Engagement with local workers and trade unions can provide valuable insights into training needs and help to ensure that training programs are responsive to the Project's needs.

1.1 Legal

This document has been developed in compliance with the requirements of the Province of Newfoundland and Labrador. As a component of a Project Registration under the **Environmental Protection Act** (Environmental Assessment Regulations), the document is considered to reflect a commitment by Argentia Renewables to carry out the actions described and to report on results achieved.

1.2 Scope

This document describes the steps to be taken by Argentia Renewables to meet the objectives of women's employment and gender equity, as well as addressing the need for an equitable workplace that respects and encourages diversity.

The plan applies to all components of the Project, including onshore wind energy generation and the Argentia green Fuels production, storage, and export facility. It addresses all phases of the Project from Construction, through Operation and Maintenance, and including Decommissioning and Rehabilitation. The Plan applies to all employees of Argentia Renewables; all contractors and sub-contractors will be encouraged to adopt the Plan.

1.3 Objectives

The objectives of the WEP Plan are to:

- Enable Argentia Renewables and the Project to be an equal opportunity employer committed to diversity;
- Achieve equity with respect to employment of women and gender diverse persons and to reflect community diversity within the company workforce;
- Provide procedures, protocols and achievable targets for recruitment, hiring, retention and promotion of personnel;
- Establish appropriate policies, practices and lines of accountability; and
- Establish procedures for monitoring and reporting on progress in meeting performance targets.

1.4 Roles and Responsibilities

Each worker has specific roles and responsibilities to ensure that the Project is executed efficiency, safely, and with minimal environmental impact. Below is a list detailing these roles and responsibilities.

1.4.1 Construction

Project Manager:

- Oversee the entire of the Construction Phase.
- Coordinate between different teams and stakeholders.
- Manage the budget, schedule, and resources.
- Ensure compliance with construction standards and regulations.

Construction Manager:

- Supervise all construction activities on site.
- Manage construction schedules and ensure timely completion of tasks.
- Coordinate with subcontractors and suppliers.
- Ensure adherence to safety protocols and quality standards.
- Conduct regular site inspections and meetings.

Human Resources Manager:

- Oversee the recruitment, hiring, and onboarding of construction staff.
- Manage employee relations, payroll, and benefits.
- Ensure compliance with labor laws and regulations.
- Implement training and development programs.

Recruiter:

- Source and recruit skilled workers and professionals.
- Facilitate the hiring process and onboarding.

Financial Manager:

- Manage the project budget and monitor expenditures.
- Prepare financial reports and forecasts.
- Oversee payments to suppliers and subcontractors.

Administrator:

- Provide administrative support to the construction team.
- Manage documentation, including contracts, permits, and reports.
- Facilitate communication and coordination among team members.

Purchaser:

- Procure construction material and equipment.
- Manage supplier relationships and contracts.
- Ensure timely delivery of materials to the construction site.

Project Engineer:

- Provide technical support and guidance.
- Ensure construction activities comply with engineering designs and specifications.
- Assist in resolving technical issues during construction.

Field Engineer:

- Interpret engineering designs, plans, and specifications, and perform on-site engineering tasks.
- Conduct site surveys and measurements to guide construction activities.

Quality Control Manager:

- Develop and implement Quality Assurance/Quality Control (QA/QC) plans.
- Document and report on quality control activities.
- Address quality issues and implement corrective actions.

Quality Control Coordinator:

- Assist the Quality Control Manager with inspections and documentation.
- Monitor day-to-day quality control processes.
- Ensure compliance with quality standards and specifications.

Safety Manager:

- Develop and enforce health and safety policies.
- Conduct safety training and briefings.
- Investigate any accidents or incidents and implement corrective measures.

Safety Coordinator:

- Assist the Safety Manager in implementing safety protocols.
- Conduct on-site safety and environmental inspections and observations.
- Address safety and environmental concerns, ensuring compliance with regulations.

Environmental Coordinator:

- Ensure compliance with environmental regulations during construction.
- Monitor and mitigate environmental impacts, implementing best practices.
- Implement and oversee environmental protection measures, such as erosion control and habitat preservation.

Superintendent:

- Coordinate between different work crews.
- Oversee daily construction activities on site.
- Ensure work is performed according to plans and schedule.

Foreman:

- Supervise specific trades or work crews.
- Report progress and issues to the Superintendent.
- Coordinate daily work schedules and resources allocation.

Tradespeople:

- Perform skilled labour tasks such as welding, electrical work, and equipment installation.
- Follow construction plans and safety protocols.
- Report progress and issues to the Foremen.

Hydrogen and Ammonia Plant Operators:

- Operate and monitor equipment for hydrogen production, ammonia synthesis, and related process.
- Ensure the plant operates within established parameters.
- Conduct regular inspections of equipment and systems.
- Identify and report any abnormalities or potential issues.

Hydrogen and Ammonia Plant Maintenance Technicians:

- Perform scheduled maintenance on equipment to prevent breakdowns.
- Diagnose and repair mechanical, electrical, and control system issues. Replace worn or damaged part and components.
- Maintain detailed records of maintenance activities and repairs.

Hydrogen and Ammonia Plant Engineers:

- Optimize the performance of hydrogen and ammonia production systems.
- Provide technical support to plant operators and maintenance technicians.
- Coordinate with contractors and vendors for specialized work.
- Ensure the Facility complies with industry standards and regulations.

Hydrogen and Ammonia Plant Managers

- Oversee daily operations and ensure the plant runs smoothly.
- Supervise plant staff and ensure they have the necessary training and resources.

Wind Facility Manager:

- Oversee the operation of wind turbines and related infrastructure.
- Monitor wind farm performance and optimize output.
- Coordinate maintenance activities for wind turbines.

Wind Turbines Technicians:

- Perform regular maintenance and inspections on wind turbines.
- Diagnose and repair mechanical and electrical issues.
- Replace worn or damaged components, such as blades, bearings, and electrical parts.
- Follow safety protocols when working from heights and with high voltage equipment.

2.0 Labour Force

Table Q-2.0-1 presents the employment distribution in Placentia categorized by gender in industries and occupations that are expected to play crucial roles in direct and indirect labour, as well as goods and services essential to the Project. Table Q-2.0-1 shows the labour force in Placentia organized by the North American Industry Classification System. The dominant industry sectors for employment in 2021 were Health Care and Social Assistance, Construction, Retail Trade, and Public Administration.

Table Q-2.0-1 Placentia Employment by Industry – 2021 (Statistics Canada, 2023).

Industry – Sectors – North American Industry Classification System (NAICS)	Total Counts	Men+	Women+
All industries	1,330	680	645
Agriculture, forestry, fishing and hunting	90	50	35
Mining, quarrying, and oil and gas extraction	30	30	0
Utilities	15	15	0
Construction	150	130	20
Manufacturing	65	50	10
Wholesale trade	15	10	0
Retail trade	150	45	100
Transportation and warehousing	100	90	10
Information and cultural industries	0	0	0
Finance and insurance	0	0	0
Real estate and rental and leasing	10	10	0
Professional, scientific and technical services	40	20	20
Management of companies and enterprises	0	0	0
Administrative and support, waste management and remediation services	30	25	10
Educational services	100	35	65
Health care and social assistance	290	55	235
Arts, entertainment and recreation	0	0	0
Accommodation and food services	70	25	40
Other services (except public administration)	50	25	20
Public administration	110	45	65
Men+ includes men (and/or boys), as well as some non-binary persons. Women+ includes women (and/or girls), as well as some non-binary persons.			

Table Q-2.0-2 provides a concise overview of employment distribution categorized by gender across various occupations, providing a foundation for understanding the prevailing labour force dynamics in the area. The labour force in the Placentia area is dominated by trades, transport and equipment operators and related occupations (370, 9.5% women+), with sales and service occupations (280, 58.9% women+) and health occupations (160, 78.1% women+) following closely in numbers. The workforce in the Placentia area exhibits a notable overrepresentation of men in roles pertinent to the Project, with men employed in trades, transportation and equipment operators, and related occupations (370, 90.5% men+) and natural and applied sciences and related occupations (35, 87.5% men+). This implies a skewed gender distribution, with a larger proportion of men engaged in occupations closely aligned with the Project's requirements.

Table Q-2.0-2 Placentia Employment by Occupation – 2021 (Statistics Canada, 2023).

Occupation – Broad category – National Occupational Classification (NOC)	Total Counts	Men+	Women+
All occupations	1,330	680	645
0 Legislative and senior management occupations	0	0	0
1 Business, finance and administration occupations	180	35	135
2 Natural and applied sciences and related occupations	40	35	0
3 Health occupations	160	35	125
4 Occupations in education, law and social, community and government services	185	45	145
5 Occupations in art, culture, recreation and sport	20	10	15
6 Sales and service occupations	280	115	165
7 Trades, transport and equipment operators and related occupations	370	335	35
8 Natural resources, agriculture and related production occupations	60	45	15
9 Occupations in manufacturing and utilities	30	20	10
Men+ includes men (and/or boys), as well as some non-binary persons. Women+ includes women (and/or girls), as well as some non-binary persons.			

3.0 Workforce Forecast

The Project is anticipated to commence the Construction Phase in 2025, with first production by the end of 2027. The nominal operating life of the facility is 30 years; however, this may be extended through a program of a diligent maintenance and updates of components. When eventually closed and decommissioned, this final phase will take an estimated two years to complete. The peak employment will occur during the Construction Phase, with reduced staff during the Operation and Maintenance Phase, however, employment during this phase will be long term and offer opportunities for advancement and skills upgrading.

3.1 Construction Phase

During peak Construction Phase in 2026, the Project will employ approximately 1,097 full-time equivalent (FTE) positions (50 hr/week) for construction activities. The Construction Phase for the Argentia Green Fuels Facility is planned to occur from June 2025 to April 2027, with commissioning set to occur from January 2027 to October 2027. The Construction Phase for the Argentia Wind Facility is scheduled to occur from June 2025 to December 2026, with commissioning set to occur from August 2026 to March 2027. These jobs will support the construction of wind turbines, electricity collection systems, substation(s), water collection systems, access roads, a hydrogen electrolyzer and storage, an ammonia synthesis unit and storage, maintenance buildings, and other supporting infrastructure and facilities. The

Construction workforce is forecasted to consist primarily of construction trades, transport, and equipment operators and related occupations. The enumeration and breakdown of occupations expected for the Construction Phase according to the National Occupational Classification (NOC) 2021 is provided in Section 3.1.6.3 Project Occupations. Construction trade jobs include heavy equipment operators, carpenters, masons, painters, boilermakers, electricians, millwrights, pipefitters, ironworkers, sheet metal workers, crane operators, drillers and blasters, industrial truck drivers, machinery operators, trades helpers and labourers, electrical trades and collector line and telecommunications workers, and contractors and supervisors. These jobs are integral to advancing the Construction Phase for both the Argentia Wind Facility and the Argentia Green Fuels Facility. The Project will require a diverse set of skills and expertise including management staff, office and administrative staff, and technical occupations in computer and information systems; civil and mechanical engineering; electronics and electrical engineering; land surveyors; and inspectors and regulatory officers. The workforce requirements for the Construction Phase and estimated number of workers required as per NOC code are detailed in Tables Q-3.1-1 and Q-3.1-2.

The labour force in Placentia shows a significant lack of women and gender diverse persons in roles crucial to the Project, especially those categorized under NOC code 7 (trades, transport and equipment operators and related occupations (9.5% women+)), NOC code 2 (natural and applied sciences and related occupations (0% women+)), and NOC code 9 (Occupations in manufacturing and utilities (33.3% women+)).

3.2 Operation and Maintenance

The Project will employ an estimated 51 full-time positions for Operation and Maintenance Phase of the Argentia Green Fuels Facility and an estimated 14 full-time positions for Operation and Maintenance Phase of the Argentia Wind Facility. Throughout the Operation and Maintenance Phase, the Argentia Green Fuels Facility and Argentia Wind Facility efficiency will be sustained by a multifaceted team that includes wind turbine technicians, Argentia Green Fuels Facility operators, maintenance trades, managers in facility operation and maintenance, engineers, security personnel, and office and administrative staff. The enumeration and breakdown of occupations required for the Operation and Maintenance Phase categorized by the NOC 2021 is provided in Section 3.1.6.3, Project Occupations. The workforce requirements for the Operation and Maintenance Phase and estimated number of workers required per NOC code are outlined in Table Q-3.2-1.

Table Q-3.1-1 Estimated Full-time Contractor Hires (CH) or Direct Hires (DH) for the Construction Phase of the Argentia Green Fuels Facility by Occupation and NOC.

Occupation	NOC Code	CH/DH	Q2 2025	Q3 2025	Q4 2025	Q1 2026	Q2 2026	Q3 2026	Q4 2026	Q1 2027	Q2 2027	Q3 2027	Q4 2027
Project Manager	0	CH	1	1	1	1	1	1	1	1	1	1	1
Construction Manager	7	CH	1	1	1	1	1	1	1	1	1	1	1
Human Resources Manager	1	CH	1	1	1	1	1	1	1	1	1	1	1
Recruiter	1	CH	2	4	4	4	4	4	4	4	4	4	2
Financial Manager	1	CH	0	0	1	1	1	1	1	1	1	1	1
Contract Administrator	1	CH	2	2	2	2	2	2	2	2	2	2	2
Purchaser	1	CH	0	2	4	4	4	4	4	4	4	2	1
Project Engineer	2	CH	2	2	2	4	4	4	4	4	4	4	2
Field Engineer	2	CH	1	1	6	13	14	14	14	13	13	6	3
Quality Control Manager	2	CH	1	1	2	2	2	2	2	2	2	2	2
Quality Control Coordinators	2	CH	1	1	2	5	5	5	5	5	5	5	5
Safety Manager	2	CH	1	1	1	1	1	1	1	1	1	1	1
Safety Coordinator	2	CH	2	2	5	8	8	8	8	8	8	4	2
Environmental Coordinator	2	CH	1	1	2	4	4	4	4	4	4	2	1
Superintendent	7	CH	1	1	6	13	14	14	14	13	13	6	3
Foreman	7	CH	3	3	29	65	69	69	67	65	65	27	14
Tradespeople	7	CH	25	25	289	646	682	682	663	646	646	264	132
TOTAL	-	-	45	49	358	775	817	817	796	775	775	333	174

Table Q-3.1-2 Estimated Full-time Contractor Hires (CH) or Direct Hires (DH) for the Construction Phase of the Argentia Wind Facility by Occupation and NOC.

Occupation	NOC Code	CH/DH	Q2 2025	Q3 2025	Q4 2025	Q1 2026	Q2 2026	Q3 2026	Q4 2026	Q1 2027
Project Manager	0	CH	1	1	1	1	1	1	1	1
Construction Manager	7	CH	1	1	1	1	1	1	1	1
Human Resources Manager	1	CH	1	1	1	1	1	1	1	1
Recruiter	1	CH	1	1	1	1	2	2	2	1
Financial Manager	1	CH	0	1	1	1	1	1	1	1
Purchaser	1	CH	1	1	1	1	1	1	1	1
Project Engineer	2	CH	1	1	1	1	2	2	2	1
Field Engineer	2	CH	1	3	3	1	5	5	1	1
Quality Control Manager	2	CH	0	1	1	1	1	1	1	1
Quality Control Coordinators	2	CH	0	1	1	1	1	1	1	1
Safety Coordinator	2	CH	2	2	2	1	3	3	1	1
Environmental Coordinator	2	CH	0	1	1	1	1	1	1	1
Superintendent	7	CH	1	3	3	1	5	5	1	1
Foreman	7	CH	2	14	14	2	21	21	4	2
Tradespeople	7	CH	33	248	88	15	234	234	61	15
TOTAL	-	-	45	280	120	30	280	280	80	30

Table Q-3.2-1 Estimated Contractor Hires (CH) or Direct Hires (DH) for the Operation and Maintenance Phase by Occupation and NOC for the Operation and Maintenance Phase.

Occupation	NOC code	FT/PT/Seasonal	Number of Employees	Direct Hire (DH) or Contractor Hire (CH)	Estimated Timeframe
Argentia Green Fuels Facility					
Ammonia Plant Operators	9	FT	25	DH	30 years
Ammonia Plant Maintenance Technicians	7	FT	10	DH	30 years
Ammonia Plant Engineer	2	FT	1	DH	30 years
Ammonia Plant Manager	7	FT	1	DH	30 years
Electrolyzer Plant Operator	9	FT	5	DH	30 years
Electrolyzer Plant Maintenance Technicians	7	FT	5	DH	30 years
Electrolyzer Plant Engineer	2	FT	1	DH	30 years
Electrolyzer Plant Manager	7	FT	1	DH	30 years
Administration	1	FT	2	DH	30 years
Argentia Wind Facility					
Wind Facility Manager	9	FT	1	DH	30 years
Wind Turbine Technicians	7	FT	10	DH	30 years
Administration	1	FT	3	DH	30 years

3.3 Decommissioning and Rehabilitation Phase

The Decommissioning and Rehabilitation Phase of the Project will necessitate a substantial workforce for dismantling and removal of all Project components: the Argentia Green Fuels Facility and the Argentia Wind Facility. Upon removal of structures and facilities, the land will be restored with the objective of achieving its prior state. The Decomissioning and Rehabilitation Phase activities will be sequenced to align with a reduction in Operation and Maintenance Phase activities and will be revised and refined as the Project approaches the end of its 30-year operational life. The number of contracts and types of employment opportunities will be reviewed as part of this process. It is premature to identify the necessary workforce at this stage of the Project, however as the Project approaches the end of the Operation and Maintenance Phase, the WEP will be updated to reflect workforce requirements as well as changes in policies.

4.0 Employment Equity

Argentia Renewables is committed to identifying and addressing barriers that affect diversity, equity, and inclusion (DEI) in talent acquisition and development, retention, recognition, and advancement for under-represented groups. The establishment of a DEI Council, featuring diverse representation from executive leadership, Affinity Networks, and the workforce, underscores the dedication to fulfilling these commitments. The proposed DEI Council will initiate endeavors, ensuring that tangible actions are taken to align DEI efforts with corporate objectives.

The Argentia Renewables commitment to DEI guides the implementation of DEI initiatives. Argentia Renewables Wind LP is committed to a diverse, equitable, and inclusive workplace where all employees belong, regardless of personal characteristics, backgrounds, perspectives, or abilities. Argentia Renewables aims to achieve diversity through Project organization, while providing an environment where employees from under-represented groups are encouraged and empowered. This approach will lead to a more engaged workforce and better business outcomes.

The Pattern Energy commitment to equal pay for equal work is actively translated into action through the provision of competitive, equitable, and comprehensive compensation and benefits for all full-time employees. The dedicated Total Rewards team conducts annual evaluations of the compensation programs, ensuring alignment with this fundamental objective. Argentia Renewables goes beyond by partnering with an external advisor to stay informed about the latest trends in compensation and equity. This collaboration serves the purpose of benefiting employees by incorporating industry best practices into reward structures. Argentia Renewables' approach involves a robust analysis of roles and responsibilities, evaluating contributions and exposure to various company activities and projects. This comprehensive evaluation forms an integral part of the annual salary and bonus process, which includes a review of these factors. Collaboration with the Executive Team and Board of Directors ensures that Argentia Renewables' rewards employees in a manner that is both equitable and meaningful. Furthermore, the corporate commitment to equity extends to partnering with a third party to conduct an annual pay equity review by gender and race.

Argentia Renewables adheres to the following workplace practices that seek to create a diverse, open and welcoming space for all employees:

- Prioritize diversity of all forms during talent acquisition and recruitment activities.
- Offer employees competitive compensation and benefits.
- Provide new hire orientations and ongoing learning opportunities.
- Maintain a matrix with training needs, opportunities, expectations, and metrics.
- Uphold an equal opportunity policy that promotes DEI.
- Develop and act on strategic action plans to contribute to meeting DEI commitments.

- Establish and support a Argentia Renewables DEI Council that provides input into DEI initiatives.
- Provide opportunities for employees to gain awareness of each other's experiences and perspectives.
- Develop talent by hosting a summer internship program.
- Encourage, support, and resource employee-led Affinity Networks.
- Regularly update a Argentia Renewables employee Handbook to reflect shifting workplace dynamics.
- Maintain an open-door policy where employees feel free to express their concerns to management in confidence.

5.0 Recruitment Strategy

In adherence to the *Canadian Charter of Human Rights and Freedoms*, the Project will give precedence to residents of NL for employment opportunities, with a focus on local residents and Indigenous Peoples. All employment opportunities will be advertised locally and within the province.

The Argentia Renewables commitment to hiring locally not only fosters community growth but also enhances the long-term sustainability of corporate initiatives. By actively contributing to the local tax base, Argentia Renewables aims to strengthen public services and infrastructure, creating a positive effect on the overall well-being of the community. Moreover, it can be anticipated that the Project will serve as a catalyst for indirect economic benefits, adding revenue to local service industries (food services, construction, health care, social assistance, and retail trade).

Most of the employment will be technical and trades related positions for all phases of the Project. Argentia Renewables will look at various ways to increase the capacity of technical occupations and trade workers. Argentia Renewables will engage in discussions with TradesNL and unions to strategize human resources for the Project. Argentia Renewables will develop and implement on-the-job training, apprenticeships, and classroom-based training to address anticipated labour supply shortages, and to ensure that local workers have the skills and expertise needed to support the Construction Phase and Operation and Maintenance Phase. Argentia Renewables will establish partnerships with the College of the North Atlantic and Memorial University to offer specialized training courses relating to renewable energy and wind technology.

6.0 Communication

Argentia Renewables is committed to collaborating with various stakeholder organizations and institutions in order to enhance opportunities for women and gender diverse persons. This commitment involves several initiatives:

- Partner with educational and training institutions as well as relevant industry stakeholders to raise awareness about job opportunities and the essential skills needed for the Project;
- Engage in community-level information sessions in collaboration with government and non-government stakeholders;
- Employ language and imagery that are inclusive to women in all job postings and communications to encourage women to apply for all job opportunities. Any promotional materials related to the Project's development will incorporate the Argentia Renewables statement of Diversity, Equity, and Inclusion Commitments.
- Outreach to organizations supporting women in science, trades and technical occupations such as the Office to Advance Women Apprentices (OAWA), Women in Resource Development Corporation (WRDC), Women in Science and Engineering Newfoundland and Labrador (WISE NL), the NL Department of Advanced Education, Skills and Labour (AES-L) and the Office for the Status of Women (OSW); and
- Outreach to women business owners and business organizations such as the Newfoundland and Labrador Organization for Women Entrepreneurs (NLOWE) to share information about procurement processes.

7.0 Training and Development

Identifying and addressing training needs is vital to ensure that there are sufficient labour resources for the Construction Phase and Operation and Maintenance Phase of the Project. The Argentia Renewables goal of recruiting diverse, high-quality talent goes beyond meeting business objectives; it reflects the company's dedication to creating a dynamic work environment that values inclusion and innovation. Argentia Renewables will emphasize providing students with hands-on learning experiences to provide a bridge between academic knowledge and real-world application. Education partnerships with technical colleges and universities serve to increase professional development, social skills, and interactions, as well as work experience.

The introduction of hydrogen, ammonia, and wind technologies to NL marks a pivotal moment in the region's economy. Recognizing the need for a skilled workforce, the Project aims to harness the expertise of the current skilled trades workforce while simultaneously introducing new skills to the province. Argentia Renewables intends to incorporate educational partnerships with local institutions as part of the training and development plan. An educational partnership with the College of the North Atlantic will involve the development of specialized industrial training programs and curriculum, namely, a Wind Technician Program and a Hydrogen Technician Program, ensuring that individuals are equipped with the knowledge and skills necessary for the evolving renewable energy and wind technology sector.

Argentia Renewables is committed to fostering the training and development of registered apprentices, fulfilling its duty to create employment opportunities for skilled tradespeople. Therefore, Argentia Renewables plans to institute an apprenticeship program for the Construction and Operation and Maintenance Phases of the Project.

8.0 Benefits Policy

Argentia Renewables is committed to delivering employment and economic opportunities within NL focused on local residents, businesses, and Indigenous Peoples.

The Argentia Renewables Benefits Policy is comprised of the following Corporate Objectives:

- Maximize positive effects on the community by prioritizing the recruitment of local residents.
- Foster increased opportunities for local business participation by disaggregating contracts wherever feasible.
- Collaborate with local institutions to identify and support relevant training programs. This collaborative effort not only benefits individuals through skill development but also contributes to the establishment of a resilient workforce, ensuring sustained positive effects throughout the duration of the Project.

The Benefits Policy functions as a comprehensive structure that cultivates ongoing collaboration amongst industry, government, educational and training institutions, Indigenous Peoples, communities, and stakeholders.

For each Project phase, Argentia Renewables will develop specific measures designed to ensure a fair and equitable distribution of associated benefits. By emphasizing a strategic approach to local benefits creation, sustained engagement with communities will be achieved and positive outcomes realized for all stakeholders involved throughout the Project life cycle.

As part of its integration into the local community, Argentia Renewables will actively collaborate with landowners, community leaders, elected officials, and local organizations to recognize and respond to their experiences, goals, and concerns. Acknowledging the transformative effect that the Project may have on communities; Argentia Renewables is dedicated to ensuring that these changes are positive. Argentia Renewables is committed to giving back to the communities that host their development by supporting local causes through sponsorships, donations, and implementing community benefit programs across all Project phases.

The Argentia Renewables Benefits Policy is to ensure that both individuals and businesses in Newfoundland and Labrador have a full and fair opportunity to participate in employment opportunities and supply goods and services competitively. This will be achieved by incorporation of the following measures:

- Open and transparent procurement process;
- Equal opportunity for participation;
- Access to information; and
- Stakeholder engagement.

9.0 Monitoring and Reporting

In alignment with the Argentia Renewables Benefits Policy, a structured follow-up and monitoring system will be developed to report workforce and employment statistics related to the Project. This will involve the development of periodic reports for each phase of the Project, detailing key employment metrics. These reports will include crucial data, such as the number of individuals employed and categorized by the NOC code, distinguishing between full- and part-time employment. The reports will provide insights into the number of apprentices and journey persons associated with each applicable NOC code. Further granularity will be achieved by including information on the gender distribution within the workforce, Indigenous representation, and identifying the source of the workforce. This reporting system will serve to facilitate transparency and accountability throughout the Project life cycle. The quarterly tracking form, detailing the number of workers according to occupational group, is presented in Table Q-9.0-1. The employment tracking form for skilled trades occupations is shown in Table Q-9.0-2.

Table Q-9.0-1 Quarterly Tracking Report, Number of Workers.

Company Name: _____ **Project Name: _____ Location: _____** **Contact: _____** **Time Period: _____**				
Occupations/Job Classification	**NOC Code**	**Total Employees**	**Journeyperson**	**Apprentice**
Project Manager				
Construction Manager				
Human Resources Manager				
Recruiter				
Financial Manager				
Contract Administrator				
Purchaser				
Project Engineer				
Field Engineer				
Quality Control Manager				
Quality Control Coordinators				
Safety Manager				
Safety Coordinator				
Environmental Coordinator				
Superintendent				
Foreman				
Tradespeople				

Table Q-9.0-2 Employment Tracking Summary.

Skilled Crafts and Trades Occupations								
Time Period: From _____ To: _____					**Journeyperson**		**Apprentice**	
Trade	Total	Supervision Name Hire	Name Hire	Union Referral	Name	Union	Name	Union
Carpenter								
Electrician								
Heavy Equipment Operator								
….								
Total								
Labourers								
Warehouse Worker								
…								
Total								
Clerical Worker								
Security Guard								
….								
Total								
Total (Overall)								

Name Hire Efforts	
Trade	**Notes**

10.0 References

Statistics Canada. (2023). 2021 Census of Population. In *Census Profile*. Statistics Canada Catalogue no. 98-316-X2021001. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&GENDERlist=1,2,3&STATISTIClist=1,4&HEADERlist=0&DGUIDlist=2021A00051001240&SearchText=Placentia

Appendix R

Species at Risk Impacts Monitoring and Mitigation Plan

Appendix R

Environmental Effects follow up and Monitoring Programs (EEMPs): Species at Risk Impacts Mitigation and Monitoring Plan (SAR IMMP)

Argentia Renewables Project

Issued by: Argentia Renewables Wind LP
Project Facility: All Locations
Affected Facility: All Locations

Effective Date: July 31, 2024

Document Maintenance and Control

Argentia Renewables Wind LP (Argentia Renewables), an affiliate of Pattern Energy Group LP (Pattern), is responsible for the distribution, maintenance and updating of this Environmental Effects follow up and Monitoring Programs (EEMPs): Species at Risk Impacts Mitigation and Monitoring Plan (SAR IMMP) for the Argentia Renewables Project (the "Project"). This SAR IMMP will be updated when needed for reasons including but not limited to reflecting changes in site-specific implementation, updating contact information, changes to scientific methods and survey best practices, and adding results of post-construction monitoring.

Document Version

Version #	Section(s) Revised	Prepared By	Approved By	Date Issued

Index of Major Changes/Modifications in Latest Version

Item #	Description of Change	Relevant Section

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Abbreviations Appearing in this Report.

ARU	Autonomous recording units
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
dB	Decibels
DBH	Diameter at breast height
ECCC	Environment and Climate Change Canada
ECCC-CWS	Environment and Climate Change Canada – Canadian Wildlife Service
EPP	Environmental Protection Plan
ha	Hectares
IMMP	Impacts Mitigation and Monitoring Plan
IUCN	International Union for Conservation of Nature
km	Kilometre
km^2	Square kilometre
kV	Kilovolt
LAA	Local Assessment Area
m	Metre
m/s	Metres per second
MBCA	**Migratory Birds Convention Act**
MBR	**Migratory Birds Regulations**
MW	Megawatt
NL ECC	Newfoundland and Labrador Department of Environmental and Climate Change
NL DFFA	Newfoundland and Labrador Department of Fisheries, Forestry, and Agriculture
NL EAD	Newfoundland and Labrador Environmental Assessment Division
NL ESA	**Newfoundland and Labrador Endangered Species Act**
NL WD	Newfoundland and Labrador Wildlife Division
PCMP	Post Construction Monitoring Plan
RAA	Regional Assessment Area
RCP	Rehabilitation and Closure Plan
RPAS	Remotely Piloted Aircraft System
SAR	Species at Risk
SARA	**Species at Risk Act**
SEEF	Searcher Efficiency
TAT	Tree to above tree height (<60 m altitude)
TEK	Traditional Ecological Knowledge
WAT	Well above tree height (60-140 m altitude)
WNS	White-nose Syndrome

1.0 Introduction

The Species at Risk Impacts Mitigation and Monitoring Plan (SAR IMMP) has been prepared by Argentia Renewables Wind LP (Argentia Renewables), an affiliate of Pattern Energy Group LP (Pattern) for the Argentia Renewables Project (the Project), which involves the planning, construction, operation and maintenance, and eventual decommissioning and rehabilitation of an onshore wind energy generation facility (Argentia Wind Facility) and a green hydrogen and ammonia production, storage, and export facility (Argentia Green Fuels Facility). The Project is located on Port of Argentia (POA) property located within the Town of Placentia, Newfoundland and Labrador (NL). This plan is intended to address the scope of work noted in Section 4.5 of the "Guidance for Registration of Onshore Wind Energy Generation and Green Hydrogen Production Projects" (Doc-2022-1022 issued by Department of Environment and Climate Change, GNL April 2023).

1.1 Legal

This document has been developed in compliance with the requirements of the Government of Newfoundland and Labrador. As a component of a Project Registration under the **Environmental Protection Act** (**Environmental Assessment Regulations**), the document is considered to reflect a commitment by Argentia Renewables to carry out the actions described and to report on results achieved.

1.2 Purpose and Scope

This SAR IMMP includes mitigation, monitoring, and adaptive management frameworks for the SAR and species of concern outlined below in Table R-1.2-1, as it relates to the Argentia Renewables Project.

The purpose of this SAR IMMP is to meet the requirements for the issuance of a Section 19 permit under the **Newfoundland and Labrador Endangered Species Act** (NL ESA) by the Newfoundland and Labrador Department of Environment and Climate Change - Wildlife Division (Wildlife Division). SAR IMMP is inclusive of 11 NL ESA listed species: two Schedule A-listed species (i.e., Endangered), the little brown myotis and northern myotis; four Schedule B-listed species (i.e., Threatened), the Red Crossbill, Short-eared Owl, Gray-cheeked Thrush, and Olive-sided Flycatcher; and five Schedule C-listed species (i.e., Vulnerable), the American eel, Rusty Blackbird, boreal felt lichen, blue felt lichen, and water pygmy-weed. These species were designated for inclusion in this SAR IMMP due to either historical records in the area, or from results of field surveys in 2022-2024.

The species above, in addition to Evening Grosbeak, have federal designations under SARA and the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). In addition, the hoary bat and silver-haired bat are recently listed as endangered under COSEWIC.

All species are listed under the International Union for Conservation of Nature (IUCN) Red List. Founded in 1964, the IUCN Red List is an inventory of the global conservation status and extinction risk of biological species. The species are listed from low to high risk using the following designation criteria: not evaluated; data deficient; least concern; near threatened; vulnerable; endangered; critically endangered; extinct in the wild; and extinct. The species in this study area include five IUCN "least concern", two "near threatened", three "vulnerable", two "endangered", and one "critically endangered". Two species are not listed under the IUCN Red List.

Table R-1.2-1 List of Wildlife Species Incorporated into this SAR IMMP.

Common Name	Scientific Name	COSEWIC Status	Schedule 1 of SARA Status	NL ESA Status	IUCN Red List
Short-eared Owl	*Asio flammeus*	Threatened	Special Concern	Threatened	Least Concern
Red Crossbill	*Loxia curvirostra percna*	Threatened	Threatened	Threatened	Least Concern
Gray-cheeked Thrush	*Catharus minimus minimus*	Assessment in progress	Not Listed	Threatened	Least Concern
Rusty Blackbird	*Euphagus carolinus*	Special Concern	Special Concern	Vulnerable	Vulnerable
Olive-sided Flycatcher	*Contopus cooperi*	Special Concern	Special Concern	Threatened	Near Threatened
Evening Grosbeak	*Coccothraustes vespertinus*	Special Concern	Special Concern	Not listed	Vulnerable
Northern Myotis	*Myotis septentrionalis*	Endangered	Endangered	Endangered	Near Threatened
Little Brown Myotis	*Myotis lucifugus*	Endangered	Endangered	Endangered	Endangered
Hoary Bat	*Lasiurus cinereus*	Endangered	Not listed	Not listed	Least Concern
Silver-haired Bat	*Lasionycteris noctivagans*	Endangered	Not listed	Not listed	Least Concern
Yellow-banded Bumblebee	*Bombus terricola*	Special Concern	Special Concern	Not Listed	Vulnerable
Blue Felt Lichen	*Degelia plumbea*	Special Concern	Special Concern	Vulnerable	Not listed
Boreal Felt Lichen	*Erioderma pedicellatum*	Special Concern	Special Concern	Vulnerable	Critically Endangered
Water Pygmy-weed	*Tillaea aquatic syn. Crassula aquatica*	Endangered	Endangered	Vulnerable	Not listed
American Eel	*Anguilla rostrata*	Special Concern	Not Listed	Vulnerable	Endangered

Other SAR and Species of Special Concern were considered for inclusion in this SAR IMMP based on the proximity of home ranges to the Project Area but were not included due to a lack of suitable habitat in the Project Area. Those considered include rock polypody (*Polypodium virginianum*), vole ears lichen (*Erioderma mollissimum*), Eastern Red Bat (*Lasiurus borealis*), Newfoundland marten (*Martes americana atrata*), and Harlequin Duck (*Histrionicus histrionicus*). A data query to the Atlantic Canada Conservation Data Centre (AC CDC) produced one record of Harlequin Duck from 1947, and it is likely this species occasionally uses Placentia Bay in the winter, but it would be unlikely to interact with the Project. If new information dictates otherwise, the aforementioned SAR will be reconsidered for inclusion into this SAR IMMP.

1.3 Company Information

Argentia Renewables is an affiliate of Pattern Energy Group LP (Pattern Energy) and is responsible for activities associated with the Project, including implementation and management of this IMMP. Contact information is provided below.

Argentia Renewables LP

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	adam.cerneaclark@patternenergy.com
	Nicole Kopysh, Environmental Permitting, nicole.kopysh@patternenergy.com
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Fax:	(713) 571-8004

1.4 Project Description

The Project will produce up to approximately 100,000 metric tonnes of green hydrogen, equivalent to approximately 1.17 mega tonnes of ammonia annually, via electrolysis. The Project will have an installed electrolyser capacity of approximately 300 megawatts. The hydrogen produced by the Project will be converted into ammonia (i.e., a hydrogen-ammonia facility) and exported to international markets by ship from an existing marine terminal in the Port of Argentia. The Project electricity generation will be provided by a network of approximately 46 wind turbines located on the Argentia Peninsula and adjacent Port of Argentia lands commonly referred to as the Argentia Backlands. Associated infrastructure includes, but is not necessarily limited to, an access road network and electricity collection and distribution lines. The Project will help development of the green hydrogen and ammonia industry in Newfoundland and Labrador, providing opportunities for workers and businesses within a sector that will support efforts to decarbonize energy production. The Project is expected to have an operational life of no less than 30 years.

1.5 Site Description

The Project Area is defined as: “the immediate area within which Project activities and features will occur, and within which direct physical disturbance associated with the Project will occur.” The Project Area comprises the wind turbine pads, hydrogen-ammonia facility, electrical substation, access roads, Collector Lines, Gen-Tie Line, Project Interconnect Line, and turbine staging areas. Two higher-level assessment areas were included in the Argentia Renewables Environmental Assessment Registration: the Local Assessment Area (LAA) defined as the Project Area plus a 1-km buffer and a 0.25-km buffer

around the Project Interconnect Line, and the Regional Assessment Area (RAA) defined as the Census Division No. 1 (i.e., Avalon) subdivision B as the basis for the outer boundary in addition to the Placentia and Fox Harbour municipalities (Figure R-1.4-1). While the RAA is based on the census subdivision, this area boundary aligns with regional drainage basins. The Project Area and LAA were used to assess the potential for direct and indirect effects on target species and SAR; the RAA was used to assess the potential for regional and cumulative effects on target species and SAR.

For this SAR IMMP, the Project Area and LAA were used to assess the potential for direct and indirect effects on the targeted species and Species at Risk (Table R-1.1-1), and the RAA was used to assess the potential for regional and cumulative effects on the identified species and Species at Risk (Figure R-1.4-1).

Pattern | Argentia Renewables	FIGURE NUMBER: R - 1.5 - 1	COORDINATE SYSTEM: NAD 1983 CSRS UTM Zone 22N	PREPARED BY: C. Burke	DATE: 24/07/25
	FIGURE TITLE: Study Area Boundaries Associated with the Project	NOTES:	REVIEWED BY:	
	PROJECT TITLE: Argentia Renewables		APPROVED BY:	sem

SEM MAP ID: 238-005-GIS-158-Rev0

2.0 Existing Conditions

Several studies have been conducted in the LAA throughout the Environmental Assessment process to determine the presence of SAR. Baseline surveys conducted to date include spring and fall migratory bird, breeding bird, and overwintering bird surveys, vegetation and rare flora surveys, ecological land classification, and bats surveys. Incidental observations of mammals and arthropods were recorded while conducting terrestrial surveys. Species existing conditions based on these surveys as well as desktop reviews are provided below.

2.1 Avifauna

The Project Area is in the nesting zone D3-4. Nesting zones correspond to federal bird conservation areas and are broad, general areas that allow for the characterization of typical bird nesting periods for each region. Spring migration for most bird species (including the known SAR) in this region occurs between early-May to late June and according to the Environment Canada nesting calendars for the area (Figure R-2.1-1), most birds nest between May 1 to August 3. The fall migration period for the region typically lasts from mid-August to late October, varying by species.

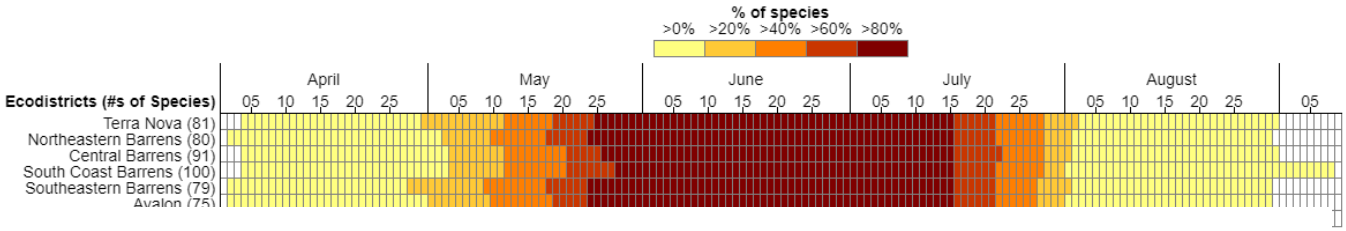

Figure R-2.1-1 Nesting Calendars by Ecodistrict in the RAA.

Surveys conducted throughout the LAA in 2022 and 2023 resulted in a comprehensive inventory of bird species using the area during the spring migration period, the breeding season, and fall migration. These surveys included efforts to identify any SAR using the area. Surveys were stratified across the three major habitat types found in the Project Area, including barrens, sparse conifer, and wetlands. Further information regarding the habitat uses and preferences of Short-eared Owl, Red Crossbill, Gray-cheeked Trush, Rusty Blackbird, and Olive-sided Flycatcher as well as evidence of their presence within the LAA and RAA, are provided in the following sections.

2.1.1 Short-eared Owl

Short-eared Owl (*Asio flammeus*) is a medium-sized owl, approximately 34-42 cm in length (COSEWIC, 2021). The plumage is mottled brown above and is buff with heavy streaking below. Unlike most owls, the Short-eared Owl is diurnal and hunts for small mammals mostly around dusk and dawn. Short-eared Owl is listed as Vulnerable under the NL ESA and was recently assessed as Threatened by COSEWIC. Short-eared Owl is listed as Special Concern under the Schedule 1 of SARA. The species is also

protected by the *NL Wildlife Act* and *Wildlife Regulations*. It is listed globally as “least concern” under the IUCN red list. The AC CDC identified four recorded observations of Short-eared Owl in the LAA including most recent observations in 2019 and 2021.

Short-eared Owls generally favour open habitats throughout the year, including grasslands, tundra, and wetlands (COSEWIC, 2021). In NL, the species has been observed in several habitat types, including tundra, coastal barrens, sand dunes, fields, and bog habitats (Wildlife Division, 2010). Breeding typically occurs in open landscapes of 50 to 100 ha in size. Nests are located on the ground in shallow scrapes near taller vegetation for concealment (COSEWIC, 2021). In winter, Short-eared Owl roost in conifers adjacent to open areas used for hunting or on the ground in the shelter of tall grasses or forbs (COSEWIC, 2021). Declines in the extent and quality of open grassland and wetland habitats have likely reduced the distribution and abundance of Short-eared Owl in southern Canada (COSEWIC, 2021).

Within the D3-4 nesting zone of insular Newfoundland (Figure R-2.1.1-1), Short-eared Owl usually nests between mid-April to mid-July.

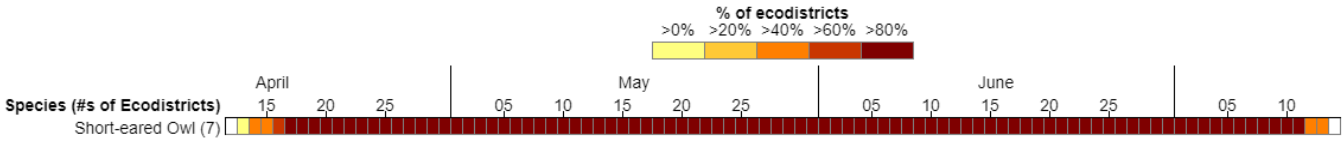

Figure R-2.1.1-1 Nesting Calendar for Short-eared Owl in D3-4.

According to COSEWIC (2021), habitat alteration, climate change and severe weather are the most important threats to Short-eared Owl. Short-eared Owl is also known to perch along roads and fly relatively close to the ground, sometimes colliding with vehicles (COSEWIC, 2021). Fragmentation of breeding habitat by roads and other anthropogenic developments may increase predation risk (COSEWIC, 2021). Collisions with wind turbines and power lines have also been identified as a possible threat (Environment and Climate Change Canada, 2018).

Baseline surveys have confirmed the presence of Short-eared Owl in the Project Area. More detailed surveys will be conducted in 2024 to determine how this species uses the Project Area.

2.1.2 Passerines

2.1.2.1 Red Crossbill

The Red Crossbill (*Loxia curvirostra percna*) is a medium-sized finch ranging from dull red to greyish-olive, most notably recognized by their specialized curved and crossed mandibles for seed eating (COSEWIC, 2016). The *percna* subspecies is differentiated from other Red Crossbills by their relatively stout and deep (tall) bill, larger body size, and darker, duskier plumage (COSEWIC, 2016). The *percna* is unique in being restricted to insular Newfoundland, although they are weakly genetically different from

other Red Crossbill groups sharing the same geographic range, it is theorized that vocalizations may promote reproductive isolation between the groups (COSEWIC, 2016). The subspecies has been listed as endangered by SARA and NL ESA since 2004; it is protected under the federal Migratory Birds *Convention Act* and has been ranked by NatureServe as nationally imperilled (N2) (COSEWIC, 2016). Red Crossbill in general has been ranked as S2S3 (Vulnerable at risk of being imperiled) for Newfoundland, however no ranking has been made provincially for the subspecies (COSEWIC, 2016). Globally, the species is listed as “least concern” under the IUCN Red List.

Red Crossbill *percna* are dependent on conifer forests for their food resources in the form of conifer seeds and cones (COSEWIC, 2016). Historically, the red and white pines of Newfoundland once provided critical habitat, however, since their increased rarity on the island, mature black spruce and to a lesser extent balsam fir and white spruce currently provide important habitat for *percna* (COSEWIC, 2016). The species is dependent on cone availability for survival and breeding and are known to be irruptive in their movements throughout their range in pursuit of food, however *percna* may be more sedentary (COSEWIC, 2016). They are also monogamous and often are faithful to their breeding areas. They nest in loose aggregations but tend to forage in flocks.

Within the D3-4 nesting zone of insular Newfoundland, Red Crossbill will nest any time of year, following the food resource availability.

According to COSEWIC (2021), threats to the species are not clearly understood due to the general lack of information. In Newfoundland competition for food resources, nest predation by introduced red squirrels, and habitat loss of native and non-native pine trees to fungal infections present the most likely threats. More broadly, habitat degradation due to development and forest harvesting reduces their general food availability, threatening starvation if there is a low crop yield across wide geographic areas (COSEWIC, 2021).

Baseline surveys have confirmed the presence of this species in the Project Area.

2.1.2.2 Gray-cheeked Thrush

The Gray-cheeked Thrush (*Catharus minimus minimus*) is larger then other *Catharus* thrushes and exhibits a grayish brown face and upperparts with stippling on the otherwise cream washed throat and breast. This species in general is known to be shy and difficult to identify visually given their preference for thick brushy habitat (SSAC, 2010). They are most often identified by their distinct vocalizations. The Newfoundland Gray-cheeked Thrush is listed as Threatened by the NL ESA and under consideration for listing by COSEWIC. They are also protected by the federal **Migratory Birds Convention Act** (MBCA). The AC CDC has one recorded observation of the species within the LAA from 1991 and this is supplemented by SEM observations in the 2023 breeding bird surveys.

The species prefers dense, low, coniferous and deciduous thickets for nesting. In Newfoundland this habitat primarily includes willow and alder thickets, dense young regenerating coniferous forests and scrub, and coastal elfin forests (SSAC, 2010). When migrating, they will use a variety of woodland and shrub habitats, however, they remain consistent in preferring dense canopy and understory forests (SSAC, 2010). The Newfoundland subspecies is thought to migrate east of the Appalachian Mountains and are one of the latest spring migrant thrushes, typically arriving to the breeding grounds between mid May and early June. The southward migration occurs from mid-August to October.

Within the D3-4 nesting zone of insular Newfoundland (Figure R-2.1.2-1), Gray-cheeked Thrush usually nests between late May to mid-July.

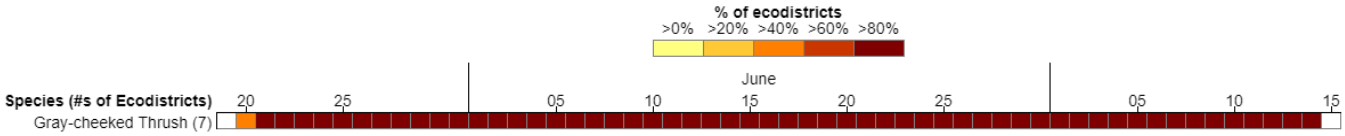

Figure R-2.1.2-1 Nesting Calendar for Gray-cheeked Thrush in D3-4.

Habitat loss due to industrial forestry, in addition to the increase in the introduced red squirrel population, might be contributing to the decrease in Gray-cheeked Thrush population in Western Newfoundland (SSAC, 2010). However, their decline from coastal habitats may not be a result of threats in their breeding grounds, rather by events or conditions experienced on their wintering grounds (SSAC, 2010). Overall, there are still large knowledge gaps preventing a more definitive explanation for their population decline.

Baseline surveys have confirmed the presence of this species in the Project Area.

2.1.2.3 Rusty Blackbird

Rusty Blackbird (*Euphagus carolinus*) is a medium-sized songbird with yellow eyes and a black, slightly curved bill (COSEWIC, 2017). During the breeding season, the male is uniformly black, with a greenish iridescence of the body feathers and a violet iridescence of the head and neck (COSEWIC, 2017). The female is a dull brownish grey (COSEWIC, 2017). On the breeding grounds (i.e., sites in Canada), Rusty Blackbird feeds primarily on invertebrates, but also on salamanders, small fish, and crustaceans (COSEWIC, 2017). Rusty Blackbird is listed as Vulnerable under the NL ESA and was assessed as Special Concern by COSEWIC and under Schedule 1 of SARA. Globally, the species is listed as vulnerable under the IUCN Red List. The Canadian breeding population, which includes approximately 87% of the global population, is estimated at 4.4 million birds, but they have suffered one of the greatest population declines of birds in Canada, which seemingly began in the 1920s (COSEWIC, 2017). Short-term trends indicate that the population has, however, been relatively stable between 2004 and 2014 (COSEWIC, 2017). There are an estimated 40,000 individuals in Atlantic Canada, and they are known to breed in Newfoundland and Labrador (Wildlife Division, 2010).

Rusty Blackbird breeding habitat is characterized by coniferous-dominated forests near wetlands, such as treed swamps, bogs, and beaver ponds (COSEWIC, 2017). Rusty Blackbird nests are constructed in shrubs or small trees over or near water (COSEWIC, 2017). Within the D3-4 nesting zone of insular Newfoundland (Figure R-2.1.2-2), the species usually nests between early May to mid-July.

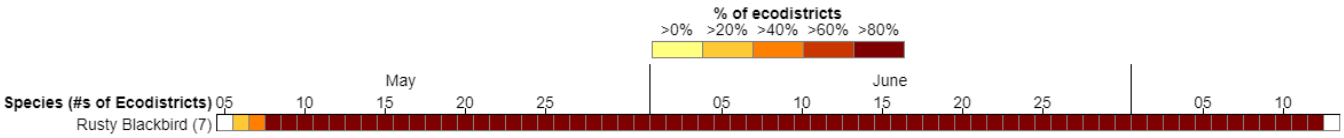

Figure R-2.1.2-2 Nesting Calendar for Rusty Blackbird in D3-4.

Suitable habitat for Rusty Blackbird appears to be decreasing on both the breeding and wintering grounds, due to the degradation and loss of wetlands by human activities, the contamination and/or acidification of wetlands, and habitat degradation due to climate change (COSEWIC, 2017). According to the recent management plan for Rusty Blackbird in the province, potential threats have not been adequately studied but habitat loss/degradation, disease transmission, increased competition with other species, and climate change effects have been identified as candidates (Wildlife Division, 2020).

Baseline surveys did not confirm the presence of this species in the Project Area. However, suitable habitat is present. They will continue to be monitored as part of the Projects Post Construction Monitoring Plan(PCMP)

2.1.2.4 Olive-sided Flycatcher

The Olive-sided Flycatcher (*Contopus cooperi*) is a deep brownish-olive medium sized insectivore (18-20 cm in length), with a whitish coloring extending along the center throat to underside of tail (COSEWIC, 2018). They tend to perch atop tall trees or snags of mature coniferous or mixed wood forests while foraging in adjacent open areas (COSWIC, 2018). They arrive in Canadian breeding grounds April and June but primarily mid-May and are socially monogamous with large territories of 10-20 ha (COSEWIC, 2018). Within the D3-4 nesting zone of insular Newfoundland (Figure R-2.1.2-3), Olive-sided Flycatcher usually nests between early May to mid-July, typically in coniferous trees.

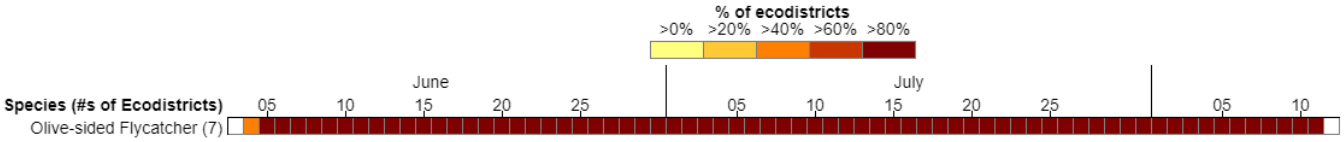

Figure R-2.1.2-3 Nesting Calendar for Olive-sided Flycatcher in D3-4.

The Olive-sided Flycatcher is listed as threatened by NL ESA and a species of special concern by COSEWIC and SARA. The species was listed in response to declining numbers across the country over

the past 30 years, likely because of habitat degradation (COSEWIC, 2018). Globally, the species is listed as near threatened under the IUCN Red List.

Baseline surveys have confirmed the presence of this species in the Project Area.

2.1.2.5 Evening Grosbeak

The Evening Grosbeak is a stocky bird of the Finch family (Fringillidae) felt. The species breeds in mature to old conifer and mixed wood forests across the boreal forest and western montane areas in North America (ECCC, 2022). The ideal forests are composed of high composition of fir (*Abies spp*.), spruce (*Picea spp*.), larch (*Larix spp*.), pine (*Pinus spp*.) and aspen (*Populus spp*.) (COSEWIC, 2016). The species occurs year-round in its Atlantic Canada Range, are nomadic when overwintering, and can range widely in search of food (ECCC, 2022). The species is listed as special concern by both COSEWIC and Schedule 1 of SARA. It is also listed as vulnerable under the global IUCN Red List.

Within the D3-4 nesting zone of insular Newfoundland (Figure R-2.1.2-4), Evening Grosbeak usually nests between late May to late August.

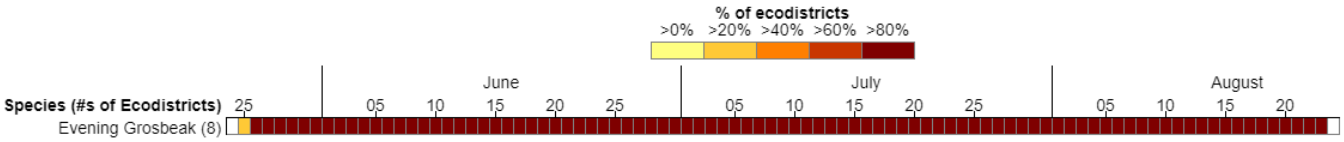

Figure R-2.1.2-4 Nesting Calendar for Evening Grosbeak in D3-4.

Threats to the species include reduced availability of mature and old-growth mixed wood and conifer forests (i.e., biological resource harvesting – forestry; spruce budworm control), collisions with windows, and mortality associated with feeding on grit and salt along roads in winter (ECCC, 2022).

Baseline surveys have confirmed the presence of this species in the Project Area.

2.2 Bats

Information regarding the habitat uses and preferences of Northern Myotis, Little Brown Myotis, Hoary Bat, and Silver-haired Bat is summarized in the following sections. There are no known hibernacula for any of the bat species within the Project Area.

2.2.1 Northern Myotis

Northern myotis (*Myotis septentrionalis*) is a small, insectivorous species with brown-pelage and an average mass and wingspan of 7.4 grams and 22-25 cm (COSEWIC, 2013). Foraging for their preferred diet of insects occurs along waterways, forest edges, and in gaps in the forest (COSEWIC, 2013). The species begins breeding after one year old and continue breeding for life (COSEWIC, 2013). Females

establish maternity colonies in the summer months in large-diameter trees and snags (COSEWIC, 2013). In 2013, Northern myotis was emergency-listed as Endangered under Schedule 1 of SARA. It was listed as Endangered on the NL ESA in 2021. Globally, the species is listed as near threatened under the IUCN Red List.

The species overwinters in hibernacula located in humid cold caves and mines and they are known to share the limited number of appropriate hibernacula with several other species (COSEWIC, 2013). Unfortunately, this increases the likelihood of transmission of the white nose syndrome fungal infection across species, which is the primary threat and source of their current designation.

Baseline surveys have confirmed the presence of this species in the Project Area.

2.2.2 Little Brown Myotis

Little brown myotis (*Myotis lucifugus*) is a small, insectivorous species with an average mass of 5.5-11 g, and a wingspan of 22-27 cm (COSEWIC, 2013). Their diet consists of a wide range of terrestrial and aquatic insects, and they often preferentially forage over water (COSEWIC, 2013). In NL, little brown myotis is a resident species typically found in forested habitats near waterbodies suitable for foraging in the spring, summer, and fall. In 2013, little brown myotis was emergency-listed as Endangered under Schedule 1 of SARA. It was listed as Endangered on the NL ESA in 2021. Globally, the species is listed as endangered under the IUCN Red List.

During the breeding season, females form large maternity roosts where they give birth to and raise their pups (COSEWIC, 2013). Maternity roosts may be at a natural site, such as a cavity in a tree, a snag, a rock crevice, a cave, or the underside of loose bark, or, more often at an anthropogenic site such as an attic in a building or within other structures like sheds or abandoned cabins (COSEWIC, 2013). Females are thought to select a quality maternity roost at the expense of travelling long distances to forage (Broders, Burns, & McCarthy, 2013). Typically, natural maternity roost sites are in tall, large-diameter trees (diameter at breast height (DBH) >30 cm), in forested landscapes (COSEWIC, 2013).

Little brown myotis spend their winters in hibernation in underground sites, such as caves and abandoned mines that stay above freezing and with sufficient humidity.

The little brown myotis has seen drastic population declines in North America caused by the fungal pathogen White-Nose Syndrome (WNS) (COSEWIC 2013). WNS was confirmed in insular Newfoundland in May 2018 (NL Department of Fisheries and Land Resources 2018). In areas affected by WNS, mortality rates are high significant. Populations in eastern Canada have declined by 94% since the arrival of WNS (COSEWIC 2013).

Baseline surveys have confirmed the presence of this species in the Project Area.

2.2.3 Hoary Bat

The hoary bat (*Lasiurus cinereus*) is the largest of the bats in Canada. They have distinct brown fur heavily frosted with white on their body, yellow fur around the face, weigh between 20-35 g, and have an average wingspan of 43 cm (Reid 2006). Hoary Bats are also insectivorous and feed primarily on large moths, but also flies, beetles, and grasshoppers. Hoary bat is widespread in eastern Canada but are relatively rare in the Atlantic Provinces. It is a long-distance migrant, that flies from northern breeding sites to overwintering sites as far south as Mexico. Hoary bats are typically solitary and roost in the foliage of mature deciduous or coniferous trees. Females often give birth to two pups in the spring, although litter size can range from one to four. The hoary bat is recently listed as endangered by COSEWIC; for this SAR IMMP, the hoary bat will be treated as likely to be listed on Schedule 1 of SARA and under the NL ESA. Globally, the species is listed as “least concern” under the IUCN Red List.

Hoary bats are particularly vulnerable to collisions with turbines during migration, and this species accounts for approximately half of all bat fatalities at wind turbine facilities in North America (Aivek Stantec Limited Partnership, 2021).

Baseline surveys have confirmed the presence of this species in the Project Area.

2.2.4 Silver-haired Bat

The silver-haired Bat (*Lasionycteris noctivagans*) has black fur with white tips, giving a silver appearance and weighing 8-11 g with an average wingspan of 29.5 cm (Aivek Stantec Limited Partnership, 2021). Silver-haired Bats are insectivorous with a diet comprised primarily of moths, flies, and beetles. The species roosts in mature coniferous and mixed-wood forest (Aivek Stantec Limited Partnership, 2021). In the spring, females form maternity colonies in cavities of trees or snags, where they typically give birth to two pups (Aivek Stantec Limited Partnership, 2021). During this time, males are typically solitary. In the fall, silver-haired bats migrate to more southern locations with milder temperatures, where they hibernate in roosts found in tree hollows, under loose bark, in wood piles, or on cliff faces (Aivek Stantec Limited Partnership, 2021).

A COSEWIC status report for silver-haired bat has been recently issued, listing the species as endangered. The species has been considered as though it is a SAR for the purposes of this report. Globally the species is listed as “least concern” under the IUCN Red List.

Baseline surveys have confirmed the presence of this species in the Project Area.

2.3 Insects

2.3.1 Yellow-banded Bumblebee

The Yellow Banded Bumblebee (*Bombus terricola*) is a medium sized bee, however, quite large compared to other Bombus species found in the Project Area. The species is a generalist and can be observed in many different natural habitats and anthropogenic areas (COSEWIC, 2015). This bee can be observed in most areas with abundant flowering plants. The species is considered extremely important for the pollination of native and commercial plant species (COSEWIC, 2015). Young queen bees are the only members of the colony to overwinter. These queens emerge in the spring to form new colonies. Yellow-banded Bumblebees have colonies of around 100 workers (COSEWIC, 2015).

Baseline surveys have confirmed the presence of this species in the Project Area. More detailed surveys will be conducted in 2024 to determine how this species uses the Project Area.

2.4 Plants and Lichens

2.4.1 Blue Felt Lichen

Blue felt lichen (*Degelia plumbea*) typically grow on branches and trunks of broadleaved trees but may also occur on some coniferous trees, forest floor substrates such as non-vascular vegetation (i.e., mosses) and rock (COSEWIC, 2010). This species prefers hardwood hosts such as the yellow birch (*Betula alleghaniensis*), a species that is less common in the forests of the coastal zones of the southeast Avalon Peninsula than in the more central regions. Red maples (*Acer rubrum*) are the main phorophyte of many of these lichen in Sir Robert Bond Park in Whitbourne but have been known to occur on white spruce (*Picea glauca*) in other portions of the Avalon (COSEWIC, 2010).

Blue felt lichen is listed as “vulnerable” under the NL ESA, and “special concern” under SARA.

The species, like other rare lichens is highly affected by changing atmospheric conditions and is especially affected by air pollution. Preferring a humid environment, this species is also affected by the reduction in humidity caused by the opening or spacing of the forest due to windfallen trees, cutting/clearing, or browsing of young trees associated with their typical habitat (i.e., balsam fir) (COSEWIC, 2010).

Baseline surveys have confirmed the presence of this species in the Project Area.

2.4.2 Boreal Felt Lichen

Boreal felt lichen (*Erioderma pedicellatum*) is an epiphytic lichen species which typically grows on the trunks and branches of trees in cool humid areas (Environment Canada, 2007). This lichen is primarily found on Balsam Fir (*Abies balsamea*) alongside wetlands which promote the required humidity. Boreal felt lichen has a slow generation time of approximately 30 years, boosting the importance of protecting mature individuals (Environment Canada, 2007).

This species is listed as “vulnerable” under the NL ESA, listed as “special concern” under COSEWIC and Schedule 1 of SARA, while the IUCN Red List of threatened species rates it as “critically endangered”.

The Project Area contains suitable habitat for boreal felt lichen. Baseline surveys have confirmed the presence of this species in the Project Area.

2.4.3 Water Pygmy-weed

Water pygmy-weed (*Tillaea aquatic syn. Crassula aquatica*) Is a coastal loving succulent found on sandy, gravelly, or muddy shores alongside oceans and brackish waterways (Wildlife Division, 2021). This species can range from green to red in colour depending on conditions and season (Wildlife Division, 2021). Water pygmy-weed is adapted to transition between aquatic and immersed forms, suiting its coastal lifestyle (Wildlife Division, 2021). As an annual, this plant is reliant on yearly seed production for survival (Wildlife Division, 2021). Water pygmy-weed has been observed on the airstrip of the Argentia Peninsula in 2020.

Water pygmy-weed is listed as “vulnerable” under the NL ESA and is listed as “endangered” under COSEWIC and Schedule 1 of SARA.

A survey has been conducted for water pygmy-weed on July 16 2024 and has resulted in the observation of four water pygmy-weed plants on the Argentia Peninsula. Further information will be provided once additional 2024 rare plant surveys are complete. Mitigation measures for water pygmy-weed will be established in consultation with NL WD.

2.5 Fish

2.5.1 American Eel

American eel (*Anguilla rostrata*), a catadromous species, is an important component of freshwater and marine ecosystems, filling a multi dimensional niche as a scavenger feeding on carrion, also a top-level predator (e.g., fish, insects, frogs), and is prey for numerous species, including terrestrial (e.g., Osprey,

Cormorants, other raptors), aquatic (e.g., salmonids, bass, River otters) and marine pelagic species. The species inhabits a broad diversity of habitats throughout their life, including oceanic migrations, tributaries, rivers, streams, and ponds. The only restriction to habitat is that the freshwater environment must be connected to the ocean for migration.

The population of American eel in NL (a part of one large global population not concretely designated as a local population) was designated as “vulnerable” under the NL ESA in 2022. Under a status of “threatened” by the COSEWIC in 2012, the species is being considered for listing on Schedule 1 of SARA.

Baseline surveys have confirmed the presence of this species in the Project Area through incidental observations.

3.0 Direct and Indirect Impacts of the Project on SAR

Information regarding the potential direct and indirect effects of Project activities on SAR is provided below. These effects are assessed prior to the identification of mitigation measures (see section 4.2 Monitoring and Mitigation). Below is an overview of the anticipated SAR interactions at each Project phase (Table R-3.0-1). American eel was excluded from further analysis given its minimal occurrence in one stream where a road is already existing and crosses the stream. The stream crossing where the species was identified is in the Argentia Brownfield site (site SC2, Appendix B1), and is the site of an existing road crossing. The stream leads to Argentia Pond which will not be affected by the Project. Based on the preliminary layout, the closest turbine pad construction to the mouth of Argentia Pond are located more than 500 m away. The Project will therefore have negligible interactions with American eel.

Table R-3.0-1 Potential Project-Environment Interactions Matrix.

Species at Risk					
Project Component and Activity Description	**Short-eared Owl**	**Passerine**	**Bats**	**Insects**	**Plants and Lichens**
Construction Phase					
Site Preparation	X	X	X	X	X
Roads	X	X	X		X
Staging and Laydown					X
Material Transport	X				
Wind Turbine Foundations	X	X	X	X	X
Electrical Infrastructure	X	X	X	X	
Wind Turbine Installation	X	X	X	X	
Electrolyzer Plant				X	
Ammonia Plant				X	
Ammonia Storage/Transfer				X	

Species at Risk					
Project Component and Activity Description	**Short-eared Owl**	**Passerine**	**Bats**	**Insects**	**Plants and Lichens**
Flares					
Admin Buildings				X	
Operation and Maintenance Phase					
Wind Turbine Generation	X	X	X		X
Wind Turbine Maintenance					
Electrical Infrastructure	X	X	X	X	
Venting and Flaring		X	X		
Road Maintenance	X	X		X	
Plant Operations					
Ammonia Handling					
Decommissioning and Rehabilitation Phase					
Electrical Infrastructure	X	X	X	X	X
Wind Turbine Removal	X	X	X	X	X
Building Removal				X	
Plant Removal				X	
Terrain Reclamation	X	X	X	X	X
✓ Potential interactions that might cause an effect. Interactions between the Project and the VC are not expected.					

3.1 Site Preparation and Construction

Site preparation and construction activities, which have the potential to interact with SAR include:

- Site clearing, grading/excavation, widening of gravel road, and new access road construction;
- Preparation of turbine construction areas, crane pads, and laydown areas;
- Tree cutting and vegetation clearing of ground-laid/underground collection network construction;
- Site clearing and preparation for the electrical substation;
- Site clearing and preparation for the hydrogen and ammonia plants;
- Installation of a temporary mobile lunchroom, office, or wash car trailer and on-site generator that will be moved between turbine sites as construction progresses, and
- Use of lighting when working at night.

An overview of the direct and indirect effects of site preparation and construction activities is provided in Table R-3.1-1. A discussion of the potential effects is provided in more detail in the following sections. A discussion of mitigation measures during this Project phase is provided in Section 4.2.

Table R-3.1-1 Summary of Direct and Indirect Effects of the Site Preparation and Construction Phase of the Project on SAR.

Potential Effect
Habitat Quality • Reduced habitat availability for foraging • Reduced habitat availability for nesting/roosting • Increased sensitivity due to habitat alterations (i.e., pollution, noise, desiccation)
Edge Effects • Desiccation • Fragmentation of continuous habitat
Sensory Disturbance • Noise and/or light pollution • Intensified dust emissions
Incidental Mortality • Destruction of nests or roost sites during site clearing activities • Desiccation due to altered habitat • Clearing of sensitive habitat

3.1.1 Habitat Quality

Vegetation will be cleared at each of the turbine pads, for access roads and other associated infrastructure. The clearing and infilling will be wide enough to allow the transport of large equipment during construction. While the turbine pads and roads will remain clear throughout the lifespan of the Project and will be constructed with gravel/crushed stone fill, they will be reduced in size and the surrounding land recovered during the Operation and Maintenance Phase. Based on preliminary design, the quantity of habitat that will be altered for turbine pad/laydown area and road construction is outlined in Table R-3.1.1-1. This calculation excluded collector lines, the Project Gen-Tie, and the Interconnect Line, as such the ELC habitat data excluded the Project Interconnect Line right-of-way.

Table R-3.1.1-1 Habitat Altered in Argentia Backlands and Argentia Peninsula by Preliminary Project Layout (roads and turbine pads).

ELC Ecotype	Habitat Area in Argentia Backlands and Argentia Peninsula (ha)	Habitat Altered by Preliminary Project Layout (ha)	Percent Altered per Ecotype (%)
Coastline	14.34	0.2	1.39
Rocky Barren	40.03	2.42	6.05
Wetland	244.64	4.32	1.77
Meadow	173.76	7.6	4.37
Regenerating Coniferous Forest	425.27	7.92	1.86
Coniferous Scrub	415.48	16.37	3.94
Mature coniferous	1332.36	39.89	2.99
Mixedwood Forest	368.5	6.66	1.81
Open Water	245.76	0	0.00
Anthropogenic	276.91	14.34	5.18

This amounts to an estimated 99.72 ha altered ecotype or less than 3% in the Project Area (preliminary roads and turbine alterations only). At the time of this calculation, Project infrastructure is estimated to alter 4.32 ha of wetland, however, the Project maintains the goal to minimize their effects on wetlands. This is calculated currently by the use of a preliminary Project layout and ELC mapping (Appendix D3) for this modelling. The Project layout will still undergo micro-siting adjustments prior to construction to avoid and minimize effects on wetlands in the Project Area where practicable.

How each SAR interacts with habitats contained within the Project Area is discussed below.

3.1.1.1 Short-eared Owl

Short-eared Owl prefers open grassland habitats for hunting, and they construct their nests in shallow scrapes on the ground. They fly relatively close to the ground and are most active during dawn, dusk and at night. Low shrub and barren habitats may be used by Short-eared Owl within the Project Area during the nesting season. Minimal habitat loss will occur due to site preparation; however, the effects will be small as there is limited grasslands habitat in the LAA and RAA and those that do exist are contained within wetlands, a habitat that will see minimal disturbance.

3.1.1.2 Passerine

Red Crossbill prefers to forage on the seeds of conifer forests (pine trees and black spruce) and are reliant in these habitats for roosting and nesting. They are most active during the day, exhibiting irruptive behaviour in search of abundant food resources. Habitat loss and habitat fragmentation from tree clearing may occur for Red Crossbill due to site preparation and construction in the Argentia Backlands; however, the effect will be reduced due to the nomadic lifestyle of the Red Crossbill and their ability to adapt. Since the species nests throughout the year, nest monitoring and avoidance will be required during vegetation clearing in the Project Area (see section 4.2).

Gray-cheeked Thrush prefers to ground forage and nest in dense low thickets characteristic of Newfoundland coastal habitat such as occurs throughout the LAA and RAA. Clearing along pre-existing forest edges and coastal habitat will affect their nesting and foraging during site preparation; however, there is abundant alternate habitat available within the LAA and RAA.

Rusty Blackbird prefers to forage in shallow waters of wetlands surrounded by coniferous-dominant forests, and their nests are usually established in shrubs or small trees near/over water. A small amount of habitat loss may occur for Rusty Blackbird due to site preparation and construction (possibly due to habitat alteration by disturbance), but the potential effect will be reduced due to the quantity of suitable available habitat that exists in the LAA and RAA.

Olive-sided Flycatcher prefer to forage in open areas including mature forests near wet areas, including rivers and bogs, semi-open mature forests, barrens, and clearcuts. A small quantity of habitat loss may occur in the removal of mature forest stands; however, the open habitat created might be beneficial to this species.

Evening Grosbeak prefers to forage on invertebrates in the summer months and fruit and conifer seeds in the winter. Their preferred habitat for mating and foraging is in mature mixedwood forests that are predominantly coniferous. A small quantity of habitat loss may occur for Rusty Blackbird due to site preparation and construction (possibly due to habitat alteration by disturbance), but the potential effect will be minimal due to the amount of available habitat that exists in the LAA and RAA and their nomadic lifestyle.

3.1.1.3 Bats

Northern myotis and little brown myotis prefer forested areas or open water for foraging, and establish maternity roosts occur in trees, snags, or human structures. The preliminary Project infrastructure layout will affect marginal habitat for Little Brown Myotis, hence the effect of loss of habitat for this SAR from site preparation and clearing will be minimal.

The range of the migratory silver-haired bat likely does not extend to the Project Area (aside from the rare outlier vagrant individual). The species occupies a similar niche to the Little Brown Myotis, foraging over waterbodies and roosting in forested habitat. The potential for the Project Area, LAA, or RAA to contain habitat for this species is minimal.

Hoary Bat has a higher wing loading and aspect ratio than the other three bat species, restricting it to less cluttered areas for foraging. Little is known about this species' foraging behaviour and diet in eastern Canada, but other studies have shown that their migratory diet resembles that while on summer grounds (Reimer et. al., 2010). Some evidence suggests that this species may seek out larger waterbodies (Reimer *et al*. 2010) and it seems unlikely that the Project Area (or the LAA or RAA) would provide quality foraging habitat. More local information would be beneficial for this species, and the Environmental Effects follow up and Monitoring Programs (EEMPs): Bat and Avian Post-construction Monitoring Plan (PCMP) (Appendix S) may contribute to this gap.

3.1.1.4 Insects

Yellow-banded Bumblebee is generalist and can be observed in many different natural habitats and anthropogenic areas (COSWIC, 2015). This bee can be observed in any area with abundant flowering plants. As such, existing transmission line right-of-way, open meadows, and unoccupied land on the Argentia Peninsula have the potential to support this species. Therefore, site preparation of turbine sites, transmission lines, and plant facilities all interact with potential suitable habitat.

3.1.1.5 Plants and Lichens

Blue felt lichen in Newfoundland grow predominately on native yellow birch in coastal areas, but occasionally on white spruce where spillover effects allow (COSEWIC, 2010), an estimated 30% of the known thalli exist on non-native red maple (COSEWIC, 2010). In the Project Area, lichen were found to be present in yellow birch mixedwood forests in the Northeast portion of the Argentia Backlands, surrounding Big Shalloway Pond.

Small mixedwood forests in the Project Area were observed to include white birch, yellow birch, and balsam fir. Blue felt lichen thalli were most commonly observed in mixedwood forests that contain mature yellow birch at more than 40 cm in diameter at breast height (DBH). Sampling of this forest type has resulted in the observation of numerous thalli of blue felt lichen. The yellow birch forests present in the Big Shalloway Pond area occupy the same areas of sloped terrain where humid air travels from the ocean through the valley. It is highly probable, based on observations to date, that all the yellow birch ("mixedwood forests") as shown on the rare lichen habitat suitability maps contain blue felt lichen thalli. Observations of blue felt lichen were obtained in both closed, coniferous dominated mixedwoods but were most abundantly present in large, open yellow birch and white spruce canopy dominated areas where low-growing regenerating balsam fir is present in the shrub layer. These areas have been highly grazed by moose. Alterations to surrounding forested areas may produce changes in atmospheric conditions surrounding these thalli and cause desiccation and mortalities. Consequently, protective measures apply not only to trees associated with thallus growth but include provision for buffers around the habitat type possessing the thalli as a means for the mixedwood patches to persist.

The species sensitivity to atmospheric changes and air quality makes it highly susceptible to changes in nearby forest stands.

Boreal felt lichen grows in coniferous stands dominated by Balsam Fir adjacent to wetlands. Habitat suitability studies indicate a high likelihood of the species presence. Small areas of habitat may be lost through the removal of mature balsam fir forest stands during Project construction.

Water pygmy-weed is located on the Argentia Peninsula along its northwestern coast. Should this area be used during the Construction Phase of the Project as a laydown area for Project components, there could be interactions with water pygmy-weed, however, habitat alterations are unlikely to occur, and can be prevented by surveys and flexibility in placement of laydown areas.

3.1.2 Edge Effects

In areas where vegetation is cleared for Project infrastructure, new transitional areas will be created, leading to a type of habitat alteration described as edge effects. These changes may include changes in species composition, increases in predation, changes in vegetation structure, and microclimates.

Species that rely on intact, contiguous tracts of forest may be more affected than the generalist species that often benefit from edges. Given the relatively forested habitat in which the turbines will be constructed, the SAR linked to this IMMP could be subject to edge effects. However, none of the avifauna SAR are reliant on continuous forest landscapes, and some species may even benefit from the dense edges that are created and/or the open shrub habitat created adjacent to remaining forest edges.

Boreal felt lichen and blue felt lichen grow in coniferous stands dominated by Balsam Fir adjacent to wetlands and yellow birch stands, respectively. Small sections of habitat loss will occur through the removal of mature balsam fir and yellow birch forest stands. These areas have been highly grazed by moose. Alterations to surrounding forested areas may produce changes in atmospheric conditions surrounding these thalli and cause desiccation and mortalities. Consequently, protective measures apply not only to trees associated with thallus growth but include provision for buffers around the habitat type possessing the thalli as a means for the mixedwood patches to persist.

3.1.3 Sensory Disturbance

Construction activities can sometimes result in sensory interactions between a project and SAR, namely through increased noise or light levels, or intensified dust emissions.

Some species will react to heightened sensory disturbances by avoiding the areas of disturbance, rendering those areas unutilized habitat for certain SAR, or by increasing stress to individuals. Noise limits the ability of individual SAR species to communicate with each other, thus limiting the transfer of important information, e.g., regarding the presence of predators. Noise may also limit the ability of bat SAR to echolocate when hunting for prey. Bats are particularly vulnerable to disturbance during hibernation since increased frequency or length of awakenings can result in a loss of critical fat stores (Sheffield *et al*. 1992). Vibrations and noise resulting from blasting activities could result in disturbance to hibernating bats and partial collapses of hibernation sites, but there are no known hibernacula in this area. The breeding season is also a time of vulnerability to disturbance; abandonment of pups may occur if the degree of disturbance surpasses tolerance thresholds (Sheffield *et al*. 1992). It is anticipated that bats will be minimally affected by sensory disturbance from the Project given the relatively low populations (based on acoustic monitoring results) and habitat types present in the Project Area (which are of poor quality for the subject bat species).

Excessive additive light in SAR habitat can alter the daily activity schedule of individuals. Singing (for birds), foraging, breeding, and migration may all be temporally or spatially modified by the presence of light; singing may start earlier in the morning, foraging for insects may continue later into the evening, and migration routes may be altered to favour areas of enhanced lighting, which also often coincides with heightened risk (of collisions with light sources). Given the Project Area landscape context (i.e.,

brownfield adjacent to an industrial port) it is anticipated that the site preparation and construction activities will result in minimal additive sensory disturbance for these SAR.

3.1.4 Incidental Mortality

Incidental mortality of SAR can occur in several ways through interactions with the Project. The destruction of nests (birds) or roost sites (bats) during site-clearing has the potential to affect parents and immobile offspring. The Project is committed to avoidance and minimization strategies to prevent incidental mortalities (see Section 4.2 - e.g., nest surveys, bat hibernacula surveys, vehicle speed limits).

3.1.4.1 Short-eared Owl

Short-eared Owl likely has an elevated potential for collisions with vehicles due to their tendency to fly low when hunting in open areas (including clearings and along roadsides). In addition, as a ground-nester, there is potential for the destruction of Short-eared Owl nests should site clearing be conducted during the breeding season.

3.1.4.2 Passerine

Red Crossbill has a high likelihood of interacting with the Project during site preparation and construction because they nest throughout the year in habitat types that will be disturbed during site clearing.

Gray-cheeked Thrush may interact with the Project Construction Phase during corridor widening and site clearing. Nesting and foraging for this species occur in dense thickets typical of the type present in the Project Area. Site clearing during the nesting season presents the risk of destruction of nests/eggs/nestlings.

Rusty Blackbird is likely to interact with the Project during site preparation and construction since it is known from field surveys to be present in the area. Any site clearing in or near wetland habitat during nesting season has the potential to destroy nests/eggs/nestlings.

Olive-sided Flycatcher is likely to interact with the Project given their habitat preference for edge habitat such as existing and new clearings. Their territory range during nesting is 10-20 ha in predominantly coniferous trees. Therefore, site clearing activities during nesting periods may result in interactions.

Evening Grosbeak were not identified as present in the conducted surveys. However, their nomadic lifestyle allows for the possibility of occasional occurrences, including nesting. In such cases, site clearing activities may affect such individuals.

3.1.4.3 Bats

Bat incidental mortality is unlikely to occur during the site preparation and Construction Phase. There are no known hibernacula in the RAA. There is, however, the potential for natural maternity roost habitats in snags, large roost trees, and/or cliff sides within the Project Area. Further monitoring surveys for presence of natural maternity roosts (in addition to outbuildings and abandoned bunkers) will be completed prior to site clearing and/or blasting. In addition, mitigation measures will be developed in consultation with Wildlife Division.

3.1.4.4 Insects

Yellow-banded bumblebee mortalities are possible when clearing of land occurs during the colony's active season (May – August). During the fall and winter months, site preparation activities pose the risk of disturbing overwintering queens in shallow loose soil burrows or rotting logs.

3.1.4.5 Plants and Lichen

Lichen mortality is possible, either directly because of site clearing in yellow birch and balsam fir stands of high suitability, or indirectly when nearby forest stands are eliminated causing alteration in local atmospheric conditions.

Water pygmy-weed is present in areas proximate to Project laydown sites to be used during construction. While possible, accidental disruption to plants and habitat can be avoided through awareness and avoidance.

3.1.4.6 Summary

The risk is moderate that effects on SAR will occur because of Project site preparation and clearing, given the habitat types present and the documented occurrences of SAR species. The risk will be greatly reduced through implementation of mitigation measures as noted above and described further in Section 4.2.

3.2 Operation and Maintenance

Operation and Maintenance activities that have the potential to interact with SAR include:

- Presence and operation of the wind turbines (moving blades);
- Presence of electricity transmission and distribution network, including towers, conductors, and terminals;
- Airborne emissions from the hydrogen and ammonia plants;

- Flaring associated with the production facility;
- Maintenance of linear features - access roads and electrical infrastructure; and
- Servicing of wind turbines (drone inspections, parts servicing, and replacement) handling and storage of lubricant, and associated vehicle traffic.

Mitigation measures to avoid or reduce effects are provided in Section 4.2.

3.2.1 Habitat Quality

The effects on habitat quality from sensory disturbance will continue throughout the Operation and Maintenance Phase of the Project; noise will remain amplified over baseline conditions because of the rotating turbines, road traffic for maintenance and regular operation activities (and the associated noise of those activities). Lighting will be present in the Project Area to meet Transport Canada lighting requirements, for the safety of site personnel, for the maintenance of the facilities and equipment, and travel along the access roads. Lights and flaring stacks can alter habitat, often by attracting insects which may be foraged by insectivorous bats. If densities of insects increase in the LAA due to additional lighting, they could act as a sink for bats. Argentia Renewables is committed to avoidance and minimization strategies as well as mitigation measures to address such potential decreases in habitat quality (see Section 4.2).

Wind turbine operations may result in sensory disturbance for bats beyond the footprint of the turbines (the Project Area) and result in changes to localized bat behaviour (e.g., within the LAA). Research has shown that anthropogenic noise affects bat foraging effort and success; bats have been found to spend less time foraging in noisy areas (Luo *et al*. 2015, Siemers and Schaub 2011, Schaub *et al*. 2008). Another study (Barré *et al*. 2018) indicated that, in addition to a decrease in activity for several bat species near turbines, sensory disturbance for bats can also extend as far as 1 km from wind turbines.

The removal of trees in forest habitats adjacent to rare lichens such as blue felt lichen can alter the atmospheric conditions within the nearby host habitats. Rare lichens such as boreal and blue felt lichen require humid conditions with low air pollution. In a mature forest habitat, large balsam fir or yellow birch (i.e., dominant phorophytes for both species) are naturally spaced apart. Development of roads or other infrastructure located close to such mature trees can alter the habitat quality of the rare lichens they host. Desiccation or total loss of the lichens can result. This effect could be amplified by the microclimate effects of air movement from wind turbine operation. Vertical mixing, turbulence, and wakes created by wind turbine blades can result in changes to local temperature, moisture, and CO_2 levels (D.T. Kaffine, 2019). The same altered conditions also affect climate sensitive species including the Water pygmy-weed and Yellow-banded Bumble Bee within a zone around each wind turbine site.

3.2.2 Collisions

Birds are vulnerable to wind generation projects through collisions with turbine blades or other infrastructure (e.g., meteorological towers, transmission lines, vehicles). Although bats have been found incidentally in bird mortality searches along transmission and distribution powerline corridors, little is known about such interactions as bat-wire collisions (Manville, 2016).

3.2.2.1 Turbine and Tower Collisions

Collision mortality with turbines appear unlikely for many of the SAR associated with this Project. Short-eared Owl often flies relatively low (2-30 m) to the ground occupying the tree to above tree height (TAT) airspace (0-60 m), representing a low probability of collision. Similarly, Red Crossbill, Gray-cheeked Thrush, Rusty Blackbird and Olive-sided Flycatcher occupy the TAT zone, and are mostly wetland or woodland specialists, rendering the probability of collision with turbines as low. The migratory Hoary and Silver-haired Bats detected during the acoustic monitoring program are known to be susceptible to collisions with wind turbines. Historically, migratory bats account for the highest portion of wind farm fatalities. Little Brown Bat are typically a lower-flying species (compared to the migratory bat species) but may also be susceptible to turbine collisions, ranking fourth among bat species in Canada for collisions with turbines (Zimmerling and Francis 2016).

In general, the collision potential for a SAR is directly related to flying ability. Fast, strong flyers (high wing loading; favourable ratio of body weight to wing area) are typically most susceptible.

The proposed IMMP and PCMP Appendix S will serve to determine the relative importance of the Project Area to SAR species through bat acoustic surveys, fatality searches, searcher efficiency trials, and carcass persistence trials.

Avifauna (Short-eared Owl and Passerines)

Raptors are considered the most highly affected avian group through interactions with wind turbines. The site choice for turbines favours locations with elevated and sustained winds. These same locations may often be used by raptors seeking updrafts to soar along corridors and conserve energy. The typical landscapes for wind turbine farms also can serve as hunting, foraging, and in some cases nesting sites for birds of prey. The hunting habits of many of these raptors involve scanning the landscape for prey items at a height that is beyond the view of prey species, but close enough to the ground to site prey. This preferred elevation is often at the height of the wind turbine rotors (May *et al*. 2020).

Nocturnal neotropical and temperate migrant birds (e.g., Passerines) can, under some conditions interact with wind projects. In most cases these birds fly at altitudes well above turbines. However, during severe weather events, birds can occupy relatively lower altitudes. Under such conditions, there is a potential for collisions with turbines.

The effects on birds from lighting associated with wind projects are poorly understood (Marques *et al*. 2014). Turbines with lights can attract birds, increasing the risk of collision, especially in conditions of poor visibility where visual cues are lacking, and birds depend on magnetic compass navigation (Poot *et al*. 2008). This possibility also applies to the flaring stack at the production and storage facility. Bird collisions with lit structures are likely to be more pronounced at sea than on land, and particularly during nighttime storms and associated with heavy migration traffic (Hüppop *et al*., 2006). While the Project is on land, its adjacency to the coast may result in interaction with SAR.

Birds generally can also be affected by passive collisions with transmission lines (Bevanger, 1994) and associated towers. Most Project electricity distribution lines will be overhead and the Project Interconnect Line running from the Project to interconnect with the NLH grid will generally run parallel to existing linear facilities. As a result, the potential for collisions by a SAR is low.

Collisions often occur when birds are preoccupied with hunting, landing, or fighting (Willard 1978). However, a range of biological and external factors will affect the potential risks to a specific SAR. Among the most important considerations are a species' vision and its flying abilities. This can help explain why some raptors with highly binocular vision (eyes in front of the head) often are susceptible to collisions (Bevanger 1994, Tucker 2001). While their straight-ahead view is excellent, large blind zones to the sides increase vulnerability (Tucker 2001). This characteristic also applies to the Short-eared Owl. The crepuscular nature of the Short-eared Owl may also increase susceptibility due to the poor light associated with dawn and dusk (Bevanger 1994).

Bats

The effects of wind energy projects can vary substantially across the ranges of bat species (Environment and Climate Change Canada 2018). Bat mortalities are most commonly caused by collisions with rotors. Bats account for most vertebrate fatalities at wind turbines, making wind energy production the leading cause of multiple mortality events in bats (Voigt C. *et. al*., 2024). However, it is also acknowledged that regions characterized by high wind speeds, like Newfoundland and the Argentia area, exhibit a reduced potential for turbine collisions due to relative lower habitat use by bats.

Given the steep declines of bat populations in eastern Canada due to WNS, any effects on individual bats of the SARA-listed species have the potential to be significant. Mortality of any remaining individuals, particularly breeding adults, can negatively affect the survival of local populations, slow the rate of recovery, and possibly delay the development of resistance to the fungus that causes WNS (Environment and Climate Change Canada, 2018).

3.2.2.2 Vehicles

SAR collisions with light vehicles will be possible during the Operation and Maintenance Phase when routine inspections and maintenance are carried out. While Project speed limits will be in place and serve to reduce effects, bird collisions with vehicles are still possible, as documented in literature. As discussed for Construction, Short-eared Owl would be vulnerable to collisions with vehicles, as they typically fly slowly and hover close to the ground while hunting. Rusty Blackbird seldom leaves the wetland habitats in which it breeds, so interaction with vehicles is unlikely. Similarly, Red Crossbill, Gray-cheeked Thrush, and Olive-sided Flycatcher are unlikely to interact with vehicles outside of their migration periods in the spring and fall, preferring localized foraging near their nest and rearing habitat in clearings adjacent to mature forests.

Bats can be vulnerable to vehicle collisions (Fensome and Mathews 2016). Low-flying species are more prone to collisions than high-flying species, and juveniles are more vulnerable than adults (Fensome and Mathews 2016). Given that most light vehicle traffic associated with routine inspections and maintenance of the Project infrastructure will be during the day, and traffic volumes will be low (single vehicles), the potential for bat SAR interactions with light vehicles (and especially remotely piloted aircraft system (RPAS)) is low.

Behavioural responses of avifauna species to RPAS flown at varying altitudes have been observed across the world (Rebolo-Ifrán, Graña Grilli, & Lambertucci, 2019), and, closer to home, during RPAS fieldwork conducted along transmission lines in Labrador (E. Aylward, personal communication, November 2, 2022) passerines, raptors, and waterbirds were observed to fly aggressively toward the RPAS or exhibit flushing behaviours from the nest (Rebolo-Ifrán, Graña Grilli, & Lambertucci, 2019). RPAS will be employed minimally for the Project, and usage will be restricted should monitoring results demonstrate a seasonal pattern to SAR usage of the Project Area. Interactions between SAR species and RPAS inspections and/or surveys will thereby be avoided.

3.3 Decommissioning and Rehabilitation Phase

Several Decommissioning and Rehabilitation Phase activities have the potential to interact with SAR avifauna and bats, including:

- Removal and appropriate disposal of all salvageable and non-salvageable equipment, materials, and supplies;
- Demolition of all above-grade buildings, foundations, and other infrastructure and removal of non-hazardous demolition debris; and
- Earthworks including re-contouring, and overburden and topsoil replacement.

During this Phase, all the Project infrastructure will be dismantled and taken from the site, and the footprint of the area will be restored to established standards. During this Phase, interactions will be similar, but somewhat less intensive as the Site Preparation and Construction Phase. Noise and lights will potentially interact with local SAR, and fatalities could occur through collisions with light vehicles or machinery. Any nests or roosting sites located on or in the Project infrastructure (e.g., eaves of buildings, transmission towers) would likely be lost during this Phase. However, as noted earlier, only Little Brown Myotis would have any potential for using Project structures, and nesting and roosting can be deterred during Project Operation and Maintenance thereby avoiding any incidental mortality (discussed further in the Mitigations section).

Site Rehabilitation will include recontouring, selected placement of topsoil and possible restoration of designated areas with vegetative cover using native species.

The LAA contains sufficient habitat to support any of the identified SAR, hence Decommissioning and Rehabilitation can be expected to result in negligible negative effects and, for many aspects of the work, will benefit any SAR using the area.

4.0 Impact Assessment

The environmental effects of the Project on SAR are primarily associated with the potential for collisions with wind turbines (primarily for the bat species, and to a lesser extent, Short-eared Owl, and migratory birds), possible displacement of individuals (for passerines), and habitat alteration (Insects, plants, and lichens). This assessment considers that baseline conditions reflect both historic and contemporary high levels of anthropogenic activity throughout the Project Area.

4.1 Impact Assessment Methods

The evaluation criteria employed in the environmental effects assessment of SAR are described below in Table R-4.1-1.

Table R-4.1-1 Effects Assessment Evaluation Criteria.

Evaluation Criteria	Rating	Descriptor
Magnitude	1	Negligible – not detectable.
	2	Low – within the range of natural variability and affecting less than 10% of individuals / receptors in an effected area.
	3	Moderate – affects 10 to 25% of individuals / receptors in an affected area.
	4	High – affects between 25 to 50% of individuals / receptors in an affected area.
	5	Very High – affects greater than 50% of individuals / receptors in an affected area.
Frequency	1	Fewer than 11 events per year.

Evaluation Criteria	Rating	Descriptor
	2	Between 11 to 50 events per year.
	3	Between 51 to 100 events per year.
	4	Between 101 to 200 events per year.
	5	Greater than 200 events per year.
Geographic Extent	1	Spatial extent of an interaction is isolated to brownfield sites inside the Project area.
	2	Spatial extent of an interaction is limited to the Project Area.
	3	Spatial extent of an interaction is limited to the LAA.
	4	Spatial extent of an interaction is within the RAA.
	5	Spatial extent of an interaction is beyond the RAA.
Duration	1	Interaction lasts one day or less.
	2	Interaction lasts one to seven days.
	3	Interaction lasts one to four weeks.
	4	Interaction lasts one to twelve months.
	5	Interaction lasts longer than one year.
Reversibility	1	Highly reversible.
	2	
	3	Partially reversible.
	4	
	5	Not reversible.
Context	1	Brownfield site.
	2	
	3	Evidence of utilization but with natural features.
	4	
	5	Relatively pristine area.
Confidence Rating	Low	Degree of certainty of knowledge
	Moderate	
	High	
Probability of Occurrence	Low	Likelihood of interaction with the Project
	Moderate	
	High	
Mitigation Potential	Low	Potential for interactions to be mitigated by the Project
	Moderate	
	High	
Impact Rating	Low	
	Moderate	
	High	

For this SAR IMMP, a high impact rating (Magnitude 4-5) from the Project was defined as “one which would cause a negative interaction with a SAR, resulting in a decline in that SAR in the LAA and RAA”.

4.1.1 Consideration of Avoidance and/or Reasonable Activity Alternatives

Argentia Renewables considered several alternatives in the process of developing the optimum Project — a Project that is financially viable, employs proven but innovative technology, has minimal negative environmental effects, and that addresses sustainability objectives in an environmentally responsible manner. See the discussion of alternative methods of carrying out the undertaking in Chapter 2, Section 2.4 (Registration Document). These were considered prior to conducting this SAR impact assessment.

4.2 Monitoring and Mitigation

The Environment and Climate Change Canada – Canadian Wildlife Service (ECCC-CWS) has advised that if impacts to SAR are unavoidable, the proponent should identify monitoring actions and measures to assess any residual adverse effects of Project activities on SAR, and any mitigations to minimize impacts, including all Phases (pre-construction, during construction and post-construction/operational periods). Based on the results of the IMMP and PCMP, an adaptive management framework may be employed to pivot mitigation measures in response to monitoring results. Specific monitoring and mitigation options for SAR are outlined below. The following sections also outline additional mitigations that may be used should monitoring dictate that modifications are necessary. Changes to the strategy will be established through consultations with Wildlife Division.

4.2.1 Site Preparation and Construction Monitoring

During the site preparation and Construction Phase, the Project will implement the following SAR monitoring surveys. These surveys are supplementary to the previously completed baseline surveys and will help to address any remaining data gaps and/or maintain data continuity prior to the Operation and Maintenance Phase.

An additional year of dedicated Short-eared Owl monitoring will occur in 2024. Surveys to confirm the presence and extent of yellow-banded bumblebee and water pygmy-weed will also take place in 2024.

Avifauna spring and fall migratory, breeding, winter surveys will continue throughout the pre-construction period. During spring construction activities, nest surveys will be conducted within 24 hours of site clearing to prevent incidental mortality of nesting birds.

The Project will continue acoustic monitoring of bat SAR to assess the presence, establish numbers, and habitat use, confirm EA predictions and inform the development of additional mitigation measures and adaptive management plans.

A Newfoundland marten hair snag survey will be undertaken as per discussions with Wildlife Division and in following with Wildlife Division's guidance document (Herdman, 2014). If Newfoundland marten are found to occupy the Project Area, mitigation measures will be developed in consultation with Wildlife Division.

4.2.2 Post-Construction Monitoring

A PCMP for avifauna and bats (Appendix S) has been produced which details various surveys (Table R-4.2.2-1) that aim to assess bird and bat fatalities. The following sections summarize each of the surveys associated with the PCMP, but which also pertain to the detection of SAR fatalities. These include standardized carcass searches, searcher efficiency (SEEF) trials, and carcass persistence surveys. The three surveys will be conducted from spring until fall (from April 1 to October 31) with intensive, short duration survey periods.

Table R-4.2.2-1 Planned Post-construction Activities for 2027, as Outlined in the PCMP.

Activity	Deliverable	Timing (approximate)
Avifauna Surveys	Field Surveys, Analyses, and Report	TBD
Bat Acoustic and/or Thermal Camera Surveys	Field Surveys, Analyses, and Report	May 1 - September 30
Standardized Fatality Searches	Field Surveys, Analyses, and Report	May 1 - September 30
Searcher Efficiency Trials	Field Surveys, Analyses, and Report	May 1 - September 30
Carcass Persistence Trials	Field Surveys, Analyses, and Report	May 1 - September 30

4.2.2.1 Avifauna Surveys

Extending the work of Dr. William Montevecchi, Memorial University of Newfoundland, traditional PCM will be supplemented by avifauna surveys. This will allow the Project to assist with local research initiatives whereby researchers are hoping to gain insight into how avifauna behaviour may change following Construction and Operation of the Project, and onshore wind energy facilities generally. Prior to commencement of Operations, the Project will have two years of avifauna surveys at the Argentia Wind Facility portion of the Project Area. The Project will conduct avifauna surveys in Year One, Year Three, and Year Six of operations. Post-construction avifauna surveys will comprise avian use point count surveys and will follow the study design and survey protocols of pre-construction Project avifauna surveys.

4.2.2.2 Bat Acoustic and/or Thermal Camera Surveys

Bat acoustic detectors and/or thermal cameras will be used to collect information on bat activity at select Project sites. Bat acoustic detectors and/or thermal cameras will be used to gather information about bat activity in proximity to Project wind turbines and may be used to inform smart curtailment protocols (see Section 7.3 below). Bat acoustic and/or thermal camera surveys will be conducted from approximately May 1 to September 30, which coincides with the anticipated summer active period for the three bat

species known to be present in the Project Area. The Project will utilize bat acoustic and/or thermal cameras in Year One of operation. This is further detailed in the PCMP (Appendix S).

4.2.2.3 Bird and Bat Fatality Monitoring

The detailed surveys associated with documentation of bird and bat fatalities in the Project Area are located in the PCMP (Appendix S), with a focus on the detection of SAR fatalities and in particular, bats. Survey types include standardized fatality searches and bias trials (collectively, the "PCM Surveys"). Bias trials include searcher efficiency (SEEF) trials and carcass persistence (CP) trials. PCM Surveys will be conducted in Year One of operation. PCM Surveys after Year One may be modified to evaluate smart curtailment protocols (*see* Appendix S Section 5.1.4). Additional PCM Surveys may be conducted if a large mortality event of a SAR occurs or to test the efficacy of material changes to smart curtailment protocol implementation, in consultation with Wildlife Division. Specific survey methods will be refined in consultation with Wildlife Division prior to commencement of operations; preliminary PCM Survey protocols are described below.

PCM Surveys will be conducted from spring until fall, approximately May 1 to September 30, as practicable (Table R-4.2.2-1).

4.2.3 Mitigation

The Project is committed to avoiding and/or minimizing direct and indirect impacts to wildlife, including SAR, which may occur during Project Construction Phase or Operation and Maintenance Phase.

4.2.3.1 Pre-construction and Construction Mitigation

Prior to and/or during Construction of the Project, the Project (or designate) will:

- Install bird flight diverters in areas of relatively high risk of collision with infrastructure.
- Engage a wildlife-friendly Project lighting plan:
    - Minimize pilot warning and obstruction lighting on all tall structures as feasible;
    - Utilize flashing warning lights that turn off completely between flashes;
    - Install the fewest number of site-illuminating lights feasible in the Project Area; and
    - Use only flashing lights at night at the lowest intensity and fewest number of flashes per minute as required by Transport Canada.
- The equipment used will be in good working order with no leaks or excessive noise.
- Before any clearing of suitable habitat types for rare lichen species (i.e., vole ears lichen, blue felt lichen, boreal felt lichen) or habitat adjacent to such suitable habitat types, surveys will be

conducted to identify any thalli existing within the habitats connected to the proposed infrastructure.

  - Where boreal felt lichen exist within the proposed construction sites of turbines, roads, etc., thalli will be translocated outside of the construction zone and associated buffers.
  - Other rare lichen species like the observed blue felt lichen, require a buffer as the crustose form of the species will not as easily survive transplanting. An appropriate buffer will be established for this species through consultation with Wildlife Division.
  - Buffer areas will be created where possible around any environmentally sensitive areas, such as areas identified by the baseline survey (i.e., yellow birch stands for blue felt lichen).
  - Mitigation measures for water pygmy-weed will be established in consultation with Wildlife Division.

- The work area will be kept clean and free from leftover foods which can attract birds and other wildlife to the Project Area.
- Standard and approved methodology will be applied to construction practices when culverts and bridges are being installed.
- The Project will refrain from using herbicides on the regrowth of the understory along the transmission lines or any other cleared area.
- During the bat roosting season, any trees proposed for removal and any suitable rock crevices or caves in areas proposed for blasting will be searched for signs of maternity roosts by a qualified Biologist. A buffer will be established around any active roosts found within the construction footprint site, in consultation with Wildlife Division.
- Minimize scheduling disturbance-causing activities, such as vegetation clearing during the regional avian nesting period of approximately April through August, to the extent practicable.
  - Conduct avian nest clearance surveys if vegetation clearing occurs during the regional avian nesting period to avoid and/or minimize incidental take of birds, nests, and eggs.
  - Take the following steps immediately if an active nest is discovered, defined by the presence of eggs or young dependent on the nest (Government of Canada 2019):
    - Halt all disruptive activities in the nesting area;
    - Move construction equipment and personnel away and avoid disturbing the surrounding vegetation or making a trail to and from the nest;
    - Establish a setback distance from the nest; and
    - Maintain mitigation measures and avoid the immediate area until the young have fledged the nest.

4.2.3.2 Post-construction Mitigation

During Operation and Maintenance Phase of the Project, the Project (or designate) will:

- Feather (i.e., curtail) turbine blades below a cut-in speed of 3.5 metres per second (m/s) during the autumnal bat migration period.
- Curtail turbines during Year One at wind speeds below 6 m/s, from dusk to dawn, when ambient air temperatures are above six degrees (º) Celsius (C), between July 1 and September 30.
- Implement the PCM activities described in Appendix S.
- Implement preventative mitigative measures to ensure bats do not occupy buildings (i.e., building maintenance, upkeep, and construction).
- Areas of undisturbed habitats will be avoided during maintenance.
- The Project will refrain from using herbicides on the regrowth of the understory along the transmission lines or any other cleared Project Area.

Section 5.0 of Appendix S describes post-construction mitigation measures for bats and avifauna in greater detail.

4.3 Results

The impact ratings assigned to each SAR were assessed in the context of the Project Phases discussed earlier in this document, the associated activities for each Phase, and how interactions could affect SAR health, distribution, or reproduction. This assessment (Table R-4.3-1) considers the direct and indirect interactions presented in Section 3, as well as the mitigation and monitoring measures and protocols to be implemented by the Project (Section 4.2).

Table 2 Impact Ratings of each Species at Risk associated with this IMMP.

Species at Risk											
Project Phase	**Key Indicator**	**M ag**	**Fr eq**	**E xt**	**D ur**	**R ev**	**C o**	**C o nf id en**	**Pr o ba bil ity**	**Mi ti ga ti o**	**Im pa ct**
Construction Phase	Short-eared Owl	2	2	3	3	1	3	Low	Moderate	High	Low
	Passerine	2	2	3	3	1	3	Moderate	High	High	Low
	Bats	2	1	3	3	1	3	High	High	Moderate	Low
	Insects	2	1	3	3	1	3	Moderate	Moderate	Low	Low
	Plants and Lichens	2	1	3	3	1	3	Moderate	Moderate	High	Low
Operation and Maintenance Phase	Short-eared Owl	2	1	2	1	1	3	Low	Moderate	Moderate	Low
	Passerine	2	1	2	3	1	3	Moderate	High	High	Low
	Bats	2	2	2	1	1	3	Moderate	High	Moderate	Low

	Insects	2	2	2	1	1	3	Moderate	Moderate	Low	Low
	Plants and Lichens	2	1	2	3	1	3	Moderate	Moderate	High	Low
Decommissioning and Rehabilitation Phase	Short-eared Owl	2	2	2	3	1	3	Low	Moderate	Low	Low
	Passerine	2	2	2	3	1	3	Moderate	High	High	Low
	Bats	2	1	2	3	1	3	High	High	Moderate	Low
	Insects	2	1	2	3	1	3	Moderate	Moderate	Low	Low
	Plants and Lichens	2	1	2	3	1	3	Moderate	Moderate	High	Low
*Note: Context can be assigned more than one value.											

4.3.1 Discussion

Considering the use and availability of resources/habitat in the RAA and the low magnitude of predicted interactions between the Project and the identified SAR, the predicted negative residual environmental effects are Low. Each SAR is discussed in detail below.

4.3.1.1 Short-eared Owl

Short-eared Owl, known from the RAA and the LAA from anecdotal observations, but not detected during bird surveys in 2022-24, was given an Impact Rating of Low. This species hunts low (in the TAT) and would potentially use open barren habitats periodically. However, given the scarcity of observations of this species during extensive avifauna surveys, it is unlikely to be a nesting area or significant hunting area for Short-eared Owl. If new information is obtained (e.g., during the PCMP activities) then dedicated surveys will be conducted to ensure the potential effects on Short-eared Owl can be assessed. Sensory disturbances may occur for any SAR in the area during all Phases because of noise, light, and dust, all of which could cause avoidance behaviours. Mitigation measures for noise, light and dust disturbance are detailed in Section 4.2 for this Project. In addition, measures will be taken during all Project phases, predominantly during construction where nest surveys will be completed prior to any clearing activities proposed to occur during the nesting season. Appropriate buffers will be implemented where practicable (*see* Section 4.2).

4.3.1.2 Passerine

Interactions of Passerine with the Project would primarily be periodic (as most of these species migrate and/or hibernate); only resident Red Crossbill would have interactions year-round. While marginal habitat loss and fragmentation will occur for most SAR within the LAA, none of these SAR will experience direct loss of critical habitat for their survival. Sensory disturbances may occur for any SAR in the area during all Phases through noise, light, and dust. These phenomena could also cause temporary avoidance behaviours. Mitigation measures for noise, light, and dust disturbance are included in Section 4.2. Mitigation measures will apply during all Project phases, predominantly during Construction when nest

surveys will be completed prior to any clearing activities planned for the nesting season and appropriate buffers will be implemented where practicable (see Section 4.2).

4.3.1.3 Bats

Since it is uncertain where little brown myotis and northern myotis move in the winter for hibernation, it is still unknown whether the RAA is a refuge from WNS. Based on the baseline surveys, the likelihood of little brown myotis and northern myotis having a reliance on this area for hibernation, roosting, or foraging is known to be low. Thus, incidental turbine collisions will be infrequent at most, especially since their typical airspace for foraging would be lower than the bottom of the rotors. Hoary bat and silver-haired bat, while known to be susceptible to collisions with wind turbines on migration, based on the low occurrence during 2022-24 baseline studies, were also rated Low in Impact Rating. A set of mitigation measures will be implemented throughout the life of the Project to further reduce or eliminate the potential for bat mortality (see Section 4.2).

4.3.1.4 Insects

The yellow-banded bumblebee habitat is primarily open areas that have wildflowers, e.g., anthropogenic meadows and wetlands. Site clearing for the Project may remove some habitat, however, site clearing is also anticipated to create potential new habitat for wildflowers to grow (i.e., along transmission lines and road corridors). Further, given the history of the Project Area (local settlements, followed by military and then industrial development), relatively large areas of anthropogenic meadows are present and likely provide ample resources for this SAR. While their presence was confirmed in the baseline surveys, additional monitoring in 2024 will allow for a better understanding of their preferred habitat use within the Project Area. Therefore, the Project's Impact Rating for Insects is Low.

4.3.1.5 Plants and Lichens

Blue felt lichen, boreal felt lichen, and water pygmy-weed have all been identified in the Project Area. Fifty thalli of blue felt lichen were identified on yellow birch in several small stands within the Project Area, all around Big Shalloway Pond. Boreal felt lichen was (somewhat surprisingly) only found at one site north of Hickey's Pond on the eastern side of the Project Area, despite several high-potential areas of likely occurrence. Only two thalli were observed on one balsam fir tree.

Water pygmy-weed is located on the Argentia Peninsula but is not anticipated to be close to Project activities.

Given the commitment to proven and appropriate avoidance and mitigation measures (see Section 4.2) and considering the low potential for interaction with the Project (limited evidence of presence from baseline surveys) the Impact Rating of the Project on Plants and Lichens is assessed to be Low. Ongoing monitoring will serve to identify any changes that could alter this rating.

5.0 Cumulative Effects

Cumulative effects are those expected to occur through interactions of the Project's residual effects and the residual effects of other projects in the region, either in the past, present or future. The cumulative effects identified in Chapter 6 of the Registration Document were used to assess the cumulative interactions on the SAR associated with this IMMP.

The Project will be situated in an area already moderately to heavily affected by noise, lights, dust, human presence, road network, and vehicular traffic. Given the locations of the other projects in the RAA, SAR may be affected from a cumulative effects perspective through the incremental alteration of habitat and the further amplification of industrial activities - noise, artificial light, and dust (during construction). However, such intensified sensory disturbance will be localized to the Project Area.

There is no heightened risk of SAR mortality attributable to cumulative effects. Given the other projects in the RAA, the primary risk of SAR fatalities remains attributable to collisions with turbines. There is some potential of cumulative effects for species like avifauna (passerines and Short-eared Owls) and bats, which may nest/roost within the Project Area. Excessive cumulative sensory disturbance from the Phases of the Project, combined with existing activities could cause interactions between the Project and avifauna and Bats, in the extreme case resulting in the mortality of nestlings, eggs, or young bats. However, this type of mortality would be extremely unlikely given that the additive sensory disturbance would be minimal compared to the disturbance that already exists in this area. Mortality risk will eventually return to pre-construction conditions after Decommissioning and Rehabilitation Phase.

Cumulative residual adverse effects are not predicted to affect the long-term persistence or viability of SAR within the RAA. A PCMP will be implemented, which will better characterize the Project Area SAR populations and serve to inform the necessity of mitigation measures, both for the Project as well as other undertakings in the Region. It is unlikely that Project effects, in combination with effects from other projects and activities, will result in a cumulative reduction in the amount or composition of habitats within the RAA that would threaten the persistence or viability of SAR. Since the cumulative effects of this Project will not extend outside of the influence of the LAA, and combined with the limited spatial scale of the Project activities, the Project is not predicted to have significant adverse cumulative environmental effects on avifauna and bats.

6.0 Reporting Requirements

For each year IMMP activities are conducted at the Project, an Annual IMMP Report will be generated. Annual IMMP Reports will document the methods and results of IMMP activities described in this IMMP and implemented at the Project and will be submitted to Wildlife Division. Annual reports will be made available to the Qalipu First Nation and Miawpukek First Nation, as needed.

Annual IMMP Reports will include data summaries and analyses, as appropriate, of all IMMP activities conducted at the Project, including avifauna surveys and bat acoustic and/or thermal camera surveys. Any SAR carcasses discovered during IMMP activities or incidentally at the Project will be reported to Wildlife Division and other government agencies, as appropriate, within 48 hours of discovery and confirmation. Annual IMMP Reports will also include recommendations for additional mitigation and/or adaptive management, as appropriate (see Section 4.2).

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Appendix S

Bat and Avian Post-construction Monitoring Plan

Appendix S

Environmental Effects follow up and Monitoring Programs (EEMPs): Bat and Avian Post-construction Monitoring Plan (PCMP)

Argentia Renewables Project

Issued by: Argentia Renewables Wind LP

Project Facility: All Locations

Affected Facility: All Locations

Effective Date: July 31, 2024

Document Maintenance and Control

Argentia Renewables Wind LP (Argentia Renewables), an affiliate of Pattern Energy Group LP (Pattern), is responsible for the distribution, maintenance and updating of Environmental Effects follow up and Monitoring Programs (EEMPs): Bat and Avian Post-construction Monitoring Plan (PCMP)for the Argentia Renewables Project (the “Project”). This PCMP will be updated when needed for reasons including but not limited to reflecting changes in site-specific implementation, updating contact information, changes to scientific methods and survey best practices, and adding results of post-construction monitoring.

Material updates to this PCMP will be distributed to the appropriate parties. Contact information is provided below in Section 1.3.

PCMP Document Version

Version #	Section(s) Revised	Prepared By	Approved By	Date Issued

Index of Major Changes/Modifications in Latest Version

Item #	Description of Change	Relevant Section

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1.0 Introduction

The Environmental Effects follow up and Monitoring Programs (EEMPs): Bat and Avian Post-construction Monitoring Plan (PCMP) has been prepared by Argentia Renewables Wind LP (Argentia Renewables), an affiliate of Pattern Energy Group LP (Pattern) for the Argentia Renewables Project (the Project), which involves the planning, construction, operation and maintenance, and eventual decommissioning and rehabilitation of an onshore wind energy generation facility (Argentia Wind Facility) and a green hydrogen and ammonia production, storage, and export facility (Argentia Green Fuels Facility). The Project is located on Port of Argentia (POA) property located within the Town of Placentia, Newfoundland and Labrador (NL).

As per the guidance of the Newfoundland and Labrador Department of Environment and Climate Change - Wildlife Division (Wildlife Division), this PCMP describes bat and avian monitoring and mitigation measures and associated methodologies, as well as the chain of communication required for reporting results.

Please note that this PCMP is a draft document. This PCMP will be finalized based on additional consultation with Wildlife Division.

1.1 Legal

This document has been developed in compliance with the requirements of the Government of Newfoundland and Labrador. As a component of a Project Registration under the **Environmental Protection Act (Environmental Assessment Regulations)**, the document is considered to reflect a commitment by Argentia Renewables to carry out the actions described and to report on results achieved.

1.2 Purpose and Scope

The purpose of this PCMP is to meet the requirements for the issuance of a Section 19 permit under the **Newfoundland and Labrador Endangered Species Act** (NL ESA). The Project Species at Risk (SAR) Impacts Mitigation and Monitoring Plan (IMMP) is inclusive of eight NL ESA-listed bat and avifauna species (*see* Section 1.4 below).

1.3 Company Information

Argentia Renewables is an affiliate of Pattern Energy Group LP (Pattern Energy) and is responsible for activities associated with the Project, including implementation and management of this PCMP. Contact information is provided below.

Pattern Energy

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1.4 Project Description

The Project will produce up to approximately 100,000 metric tonnes of green hydrogen, equivalent to approximately 1.17 mega tonnes of ammonia annually, via electrolysis. The Project will have an installed electrolyser capacity of approximately 300 megawatts. The hydrogen produced by the Project will be converted into ammonia (i.e., a hydrogen-ammonia facility) and exported to international markets by ship from an existing marine terminal in the Port of Argentia. The Project electricity generation will be provided by a network of approximately 46 wind turbines located on the Argentia Peninsula and adjacent Port of Argentia lands commonly referred to as the Argentia Backlands. Associated infrastructure includes, but is not necessarily limited to, an access road network and electricity collection and distribution lines. The Project will help development of the green hydrogen and ammonia industry in Newfoundland and Labrador, providing opportunities for workers and businesses within a sector that will support efforts to decarbonize energy production. The Project is expected to have an operational life of no less than 30 years.

1.5 Site Description

The Project Area is defined as: “the immediate area within which Project activities and features will occur, and within which direct physical disturbance associated with the Project will occur.” The Project Area comprises the wind turbine pads, Argentia Green Fuels Facility, electrical substation, access roads, Collector Lines, Gen-Tie Line, Project Interconnect Line, and turbine staging areas. Two higher-level assessment areas were included in the Argentia Renewables Environmental Assessment Registration: the Local Assessment Area (LAA) defined as the Project Area plus a 1-km buffer and a 0.25-km buffer around the Project Interconnect Line, and the Regional Assessment Area (RAA) defined as the Census Division No. 1 (i.e., Avalon) subdivision B as the basis for the outer boundary in addition to the Placentia and Fox Harbour subdivisions (Figure S-1.5-1). While the RAA is based on the census subdivision, this area boundary aligns with regional drainage basins. The Project Area and LAA were used to assess the potential for direct and indirect impacts on target species and SAR; the RAA was used to assess the potential for regional and cumulative effects on target species and SAR.

The SAR IMMP (Appendix R) for the Project identifies eight NL ESA-listed species including two bats and five avian species. Relevant to this PCMP (i.e., bats and birds), these include two Schedule A-listed species (i.e., Endangered), the little brown myotis (*Myotis lucifugus*) and northern myotis (*Myotis septentrionalis*), four Schedule B-listed species (i.e., Threatened), the Red Crossbill (*Loxia curivorostra*), Short-eared Owl (*Asio flammeus*), Gray-cheeked Thrush (*Catharus minimus*), Olive-sided Flycatcher (*Contopus cooperi*), and one Schedule C-listed species (i.e., Vulnerable), the Rusty Blackbird (*Euphagus carolinus*). Three additional bat species are included due to anticipated NL ESA-listing: hoary bat (*Lasiurus cinereus*), silver-haired bat (*Lasionycteris noctivagans*), and eastern red bat (*Lasiurus borealis*).

Pattern | Argentia Renewables	FIGURE NUMBER: S - 1.5 - 1	COORDINATE SYSTEM: NAD 1983 CSRS UTM Zone 22N	PREPARED BY: C. Burke	DATE: 24/07/25
	FIGURE TITLE: Study Area Boundaries Associated with the Project	NOTES:	REVIEWED BY:	
	PROJECT TITLE: Argentia Renewables		APPROVED BY:	sem

SEM MAP ID: 238-005-GIS-159-Rev0

2.0 Roles and Responsibilities

Argentia Renewables is accountable for activities associated with the Project and conducted within the Project Area, including implementation and management of the PCMP. Role-specific responsibilities are listed in the subsequent sections.

2.1 Managers and Supervisors

- Managers and supervisors are responsible for ensuring that staff, contractors, suppliers, and visitors have been properly trained in the PCMP expectations and procedures.
- Managers and Supervisors shall provide the necessary resources and appropriately trained personnel for executing the PCMP.

2.2 Wildlife Division

- The Project (or designate) will update Wildlife Division annually with recorded fatality numbers and adjusted fatality estimates.
- The Project (or designate) will update Wildlife Division if any adaptive management is required.
- This PCMP will be updated as necessary, following consultation with Wildlife Division.

2.3 Post-construction Monitoring Training Coordinator

- Responsible for developing, implementing, and updating the training plan related to post-construction monitoring for the Project.
- Provides technical support, auditing, tracking of equipment maintenance related to post-construction monitoring.
- Must ensure that the post-construction monitoring team is trained in accordance with this PCMP.
- Responsible for the documentation of training hours, certifications, and skills acquired by the post-construction monitoring team.
- Provides the opportunity for regular evaluations and feedback sessions, to identify areas for improvement and ensure compliance with Canadian regulations.

2.4 Staff, Contractors, Suppliers, and Visitors

All personnel conducting activities in the Project area, are required to complete wildlife awareness training and, where applicable, Project personnel should have a full understanding of the PCMP and how to respond and implement the PCMP as it pertains to their activities in the Project Area.

3.0 Post-Construction Monitoring

As per the recommendation of the Wildlife Division, post-construction monitoring (PCM) activities will be completed for at least the first year of Project operation (i.e., Year One). Following the completion of Year One, PCM activities and consultation with Wildlife Division, additional PCM activities may be requested. In addition to standard PCM, including carcass searches and bias trials (*see* Section 3.3 below), additional coincident studies will be conducted including avifauna surveys according to protocol currently in use at the Project, and bat acoustic and/or thermal camera surveys. Thus, PCM activities will include carcass searches and bias trials, avifauna surveys, and bat acoustic and/or thermal camera surveys.

3.1 Avifauna Surveys

Extending the work of Dr. William Montevecchi, Memorial University of Newfoundland, traditional PCM will be supplemented by avifauna surveys. This will allow the Project to assist with local research initiatives whereby researchers are hoping to gain insight into how avifauna behaviour may change following construction and operation of the Project, and onshore wind energy facilities generally. Prior to commencement of operations, the Project will have two years of avifauna surveys at the Argentia Wind Facility portion of the Project Area. The Project will conduct avifauna surveys in Year One, Year Three, and Year Six of operations. Post-construction avifauna surveys will comprise avian use point count surveys and will follow the study design and survey protocols of pre-construction Project avifauna surveys.

3.2 Bat Acoustic and/or Thermal Camera Surveys

Bat acoustic detectors and/or thermal cameras will be used to collect information on bat activity at select Project sites. Bat acoustic detectors and/or thermal cameras will be used to gather information about bat activity in proximity to Project wind turbines and may be used to inform smart curtailment protocols (*see* Section 5.0 and 5.1.4 below).

Bat acoustic and/or thermal camera surveys will be conducted from approximately May 1 to September 30, which coincides with the anticipated summer active period for the three bat species known to be present in the Project Area. Prior to the commencement of the Construction Phase, bat acoustic surveys were conducted as part of the 2023 Terrestrial Baseline Study (Argentia Renewables EA Registration, Chapter 3.1.3). The Project will utilize bat acoustic and/or thermal cameras in Year One of operation. Bat acoustic and/or thermal camera survey findings will be analyzed alongside traditional PCM (*see* Section 3.3 below) and may be used to inform adjustments to Project smart curtailment protocols (*see* Section 5.1.3 below).

3.3 Bird and Bat Fatality Monitoring

The following sections summarize each of the surveys associated with documentation of bird and bat fatalities at the Project, with a focus on the detection of SAR fatalities and in particular, bats (see Table S-3.3-1). Survey types include standardized fatality searches and bias trials (collectively, the "PCM Surveys"). Bias trials include searcher efficiency (SEEF) trials and carcass persistence (CP) trials. PCM Surveys will be conducted in Year One of operation. PCM Surveys after Year One may be modified to evaluate smart curtailment protocols (*see* Section 5.1.4 below). Additional PCM Surveys may be conducted if a large mortality event of a SAR occurs or to test the efficacy of material changes to smart curtailment protocol implementation, in consultation with Wildlife Division. Specific survey methods will be refined in consultation with Wildlife Division prior to commencement of operations; preliminary PCM Survey protocols are described below. PCM Surveys will be conducted from spring until fall, approximately May 1 to September 30, as practicable.

Table S-3.3-1 Planned PCM Surveys and additional PCM activities for Year One.

Activity	Deliverable	Timing (approximate)
Avifauna Surveys	Field Surveys, Analyses, and Report	TBD
Bat Acoustic and/or Thermal Camera Surveys	Field Surveys, Analyses, and Report	May 1 - September 30
Standardized Fatality Searches	Field Surveys, Analyses, and Report	May 1 - September 30
Searcher Efficiency Trials	Field Surveys, Analyses, and Report	May 1 - September 30
Carcass Persistence Trials	Field Surveys, Analyses, and Report	May 1 - September 30

3.3.1 Standardized Fatality Searches

The Project will complete three seasons of standardized fatality searches at Project turbines to estimate bird and bat fatalities, including SAR. Standardized fatality searches will only be part of PCM Surveys in Year One.

Standardized fatality searches will be conducted twice monthly from approximately May 1 through September 30, within cleared portions of the Project Area up to an 80-metre (m) radius of each turbine on the turbine pads and access roads. Standardized fatality searches will be conducted utilizing circular transects spaced 20 m apart in cleared areas, with surveyors searching the area out to 10 m on either side of the transect. All carcasses or carcass evidence will be photographed in the position found, geolocated using a hand-held GPS, collected if appropriate and according to approved collection permits, and recorded on a plot-specific fatality search datasheet. For each carcass found, the following data will be recorded:

- Fatality search turbine/plot number;
- Observer name;

- Unique carcass identification number (carcass ID);
- Date and time recorded and/or collected;
- Species (when possible);
- Sex (when possible);
- Age or age class (when possible);
- Nearest turbine;
- Distance and azimuth to nearest turbine;
- Visibility class of where each carcass was found, if found outside of cleared survey plot; and
- Condition class of carcass (e.g., intact, scavenged, feather spot).

All carcasses will be collected in accordance with required collection permits, stored in plastic bags, labelled, frozen for future use during SEEF and/or CP trials, or delivered to an appropriate agency for necropsy, as dictated by approved collection permits. Fatality estimator software will be employed for determining fatality estimates for the Project. Search frequency may be adjusted depending on the results of bias trials described below.

3.3.2 Searcher Efficiency Trials

Detections of fatalities at wind turbines can be biased due to several factors including the distance of the carcass from the searcher, visual obstructions such as dense vegetation or snow, and level of decay and/or effects of scavenging. SEEF trials will be conducted regularly throughout the three seasons of fatality monitoring to correct for detection bias when searching for carcasses in Year One. SEEF will be tested for each individual searcher responsible for conducting standardized fatality searches.

SEEF trials will be conducted using trial carcasses (e.g., pre-marked carcasses found during standardized fatality searches, surrogates such as rodents or game birds, appropriately sized feathered decoys) placed the morning of a standardized fatality search at random locations with the search plots, by personnel not part of the survey team, prior to the arrival of searchers,; the timing and locations of SEEF trials will be unknown to standardized fatality searchers (Strickland et al. 2011). The locations of SEEF trial carcasses will be recorded by individuals deploying trial carcasses. Approximately 18 SEEF trials will be conducted across the three seasons of standardized fatality searches (i.e., six SEEF trials each in spring, summer, and fall) and will be distributed to account for different visibility classes among cleared search plots, if necessary. SEEF trial carcasses will comprise different sizes intended to represent different detectability among large birds, small birds, and bats. Data collected for each SEEF trial will include the following standardized information:

- Name of the individual conducting the standardized carcass search;
- Date, time, and location the trial carcass was placed;

- Trial carcass type (e.g., surrogate type, decoy size) or species;
- Vegetation height and visibility class, if necessary, and outside cleared search plot;
- Site conditions (i.e., weather); and
- Date and time of standardized carcass search and whether SEEF trial carcass was found.

Following the completion of each SEEF trial, as with the concurrent standardized carcass search, all trial carcasses may be collected in accordance with required collection permits and frozen for future use during subsequent SEEF or CP trials (non-decoy trial carcasses can be reused several times), as dictated by the approved collection permits. The results of SEEF trials may be used to adjust search frequency.

3.3.3 Carcass Persistence Trials

To account for the proportion of carcasses removed by scavengers prior to detection during standardized fatality searches, which can impact fatality estimates, CP trials will be undertaken in Year One. CP trials will be conducted in non-search locations within the Project Area using game cameras and actual avian or bat carcasses, over a 90-day period.

If possible, CP trial carcasses will comprise carcasses collected during standardized fatality searches, pending permit approval; surrogate rodent or game bird carcasses available from commercial vendors may be used as necessary (Hallingstad et al. 2018). CP trial locations will be outside search plots but in areas generally representative of search plot conditions (i.e., cleared areas where carcasses are similarly detectable by, and available to, scavengers). Cameras will be mounted on and locked to temporary t-posts, placed low to the ground but not obscured by vegetation, approximately 3 m from the carcass, as per Hallingstad et al. (2023). PCM Survey personnel will check CP trial carcasses on a weekly basis to ensure the carcass has not been moved from the camera frame by scavengers and cameras remain functional. Photographs will be reviewed on days 5, 10, 15, 30, 45, 60, 75, and 90, to document trial carcass status.

The results of CP trials may be used to adjust search frequency. Should regional carcass persistence rates become available, these rates may be used in concert with site-specific data to adjust fatality estimates.

3.3.4 Search Area Adjustment

A search area adjustment may be used to account for unsearched and/or unsearchable areas within search plots. Several analytical methods exist to calculate search area adjustment. If a sufficient number of carcasses (e.g., more than 30) for a particular size group are found, an empirical distribution can be used to generate a search area adjustment.

3.3.5 Fatality Estimates

Fatality estimator software will be used to complete statistical analyses and generate fatality estimates for the Project. Fatality estimates will be calculated using the Generalized Fatality Estimator (GenEst; Dalthorp *et al*., 2018, Simonis *et al*., 2018). To calculate fatality estimates, GenEst adjusts each fatality included in an estimate for SEEF, CP, a detection reduction factor referred to as “k”, and a search area adjustment. GenEst uses a parametric bootstrap to estimate associated confidence intervals and is considered to be the least biased fatality estimator available (Rabie et al. 2021). The Project will consult with the Wildlife Division to determine which fatality estimates will be generated (e.g., species specific).

3.3.6 Permitting

Permits required to handle or collect any bird or bat carcasses discovered during PCM activities (e.g., Species at Risk Act, Migratory Birds Convention Act), or during operation of the Project, will be obtained from the appropriate government agency prior to initiating work described in this PCMP.

4.0 Reporting

For each year PCM activities are conducted at the Project, an Annual PCM Report will be generated. Annual PCM Reports will document the methods and results of PCM activities described in this PCMP and implemented at the Project and will be submitted to Wildlife Division. Annual reports will be made available to the Qalipu First Nation and Miawpukek First Nation, as needed.

Annual PCM Reports will include data summaries and analyses, as appropriate, of all PCM activities conducted at the Project, including avifauna surveys and bat acoustic and/or thermal camera surveys. Any SAR carcasses discovered during PCM activities or incidentally at the Project will be reported to Wildlife Division and other government agencies, as appropriate, within 48 hours of discovery and confirmation. Annual PCM Reports will also include recommendations for additional mitigation and/or adaptive management, as appropriate (*see* Section 5.0 below).

5.0 Mitigation

The Project is committed to avoiding and/or minimizing direct and indirect impacts to wildlife, including SAR, which may occur during Project Construction Phase or Operation and Maintenance Phase.

5.1.1 Pre-construction and Construction Mitigation

Prior to and/or during construction of the Project, the Project (or designate) will:

- Undertake an avian collision risk assessment of Project transmission infrastructure prior to construction; install bird flight diverters in areas of relative high risk;
- Engage a wildlife-friendly Project lighting plan
    - Minimize pilot warning and obstruction lighting on all tall structures as feasible;
    - Utilize flashing warning lights that turn off completely between flashes;
    - Install the fewest number of site-illuminating lights feasible in the Project Area; and
    - Use only flashing lights at night at the lowest intensity and fewest number of flashes per minute as required by Transport Canada.
- Minimize scheduling disturbance-causing activities, such as vegetation clearing, during the regional avian nesting period of approximately April through August, to the extent practicable
    - Conduct avian nest clearance surveys if vegetation clearing occurs during the regional avian nesting period to avoid and/or minimize incidental take of birds, nests, and eggs;
    - Take the following steps immediately if an active nest is discovered, defined by the presence of eggs or young dependent on the nest (Government of Canada 2019):
        - Halt all disruptive activities in the nesting area;
        - Move construction equipment and personnel away as quickly and quietly as possible and avoid disturbing the surrounding vegetation or making a trail to and from the nest;
        - Protect the nest with a vegetated buffer zone;
        - Establish a setback distance for activities; and
        - Maintain mitigation measures and avoid the immediate area until the young have naturally left the vicinity of the nest.

5.1.2 Post-construction Mitigation

During the Operation and Maintenance Phase of the Project, the Project (or designate) will:

- Feather (i.e., curtail) turbine blades below a cut-in speed of 3.5 metres per second (m/s) during the autumnal bat migration period;
- Curtail turbines during Year One at wind speeds below 6 m/s, from dusk to dawn (i.e., civil twilight), when ambient air temperatures are above six degrees (º) Celsius (C), between July 1 and September 30 (i.e., Year One Smart Curtailment);
- Extend the Year One Smart Curtailment program beyond Year One unless low SAR bat fatalities and use are observed, in which case the Year One Smart Curtailment program may be updated to consider additional factors (e.g., relative use within the Project Area, weather conditions);
- Implement the PCM activities described in this PCMP;
- Update Wildlife Division annually with the results of PCM activities at the Project through Annual PCM Reports; and
- Update Wildlife Division on any implemented adaptive management measures (e.g., refinement of and/or reversion to Smart Curtailment protocols).

The following sections describe post-construction mitigation measures in greater detail.

5.1.3 Cut-in Speed Curtailment

Cut-in speeds are the minimum wind speed required for turbine blades to start moving to generate electricity. Research has shown that increasing cut-in speeds and feathering (i.e., curtailing), or preventing turbine blades from rotating below certain wind speeds, can reduce bat fatality rates, since bat activity is generally highest at low wind speeds (Arnett et al. 2006, Environment Canada 2014). Changes to wind turbine cut-in speeds in some locations have been found to reduce bat mortality by 50-90% (Environment Canada 2014; Environment and Climate Change Canada 2018). The fall migration season is when bats are most likely to be directly impacted by wind turbines (Environment Canada 2014). At operating wind energy facilities, most bat fatalities occur over a 6-8-week period during nights in the late summer or early fall, especially when wind speed is low (Environment Canada 2014).

The Project commits to feathering (i.e., curtailing), or preventing turbine blades from rotating, below a cut-in speed of 3.5 m/s during the autumnal bat migration period. Additionally, the Project commits to curtailing turbine blades at wind speeds below 6 m/s from dusk to dawn (i.e., civil twilight) in Year One between July 1 and September 30. This curtailment will occur only when temperatures are above 6º C (i.e., when bats are likely to be active) and is described in greater detail below.

Curtailment programs in future years will be dependent on data collected during PCM activities including bat fatality estimates and consultation with Wildlife Division. Any adjustments to this or future curtailment programs will consider additional smart curtailment variables (*see* Section 5.1.4 below) and not necessarily a change from the Year One Smart Curtailment program.

5.1.4 Bat Smart Curtailment

Wildlife Division was consulted regarding guidelines and best practices for avoiding and/or minimizing bat fatalities at operating wind turbines, including the implementation of a smart curtailment program. Smart curtailment programs targeted at avoiding and/or minimizing bat fatalities use site-specific information (e.g., bat activity, meteorological data), often real-time, to refine and implement turbine curtailment parameters. Studies have shown material results in reducing both bat fatalities and curtailment time at wind energy facilities using smart curtailment programs. For example, Hayes et al. (2019) demonstrated reductions in fatality estimates of 91.4% for little brown myotis, 90.9% for silver-haired bat, 82.5% for eastern red bat, and 81.4% for hoary bat using a smart curtailment program at a wind energy facility on the U.S. mainland.

The Project Smart Curtailment Protocol consists of the following:

- All wind turbines at the Project will be equipped with software to allow for smart curtailment (e.g., the VestasOnline Business and VestasOnline Compact Supervisory Control and Data Acquisition [SCADA]), allowing automatic curtailment of wind turbines when certain conditions are met (e.g., time of day, time of year, wind speed, temperature, precipitation);
- On commencement of Operation and Maintenance Phase, the Project will implement blade feathering/curtailment below the operational turbine cut-in speed (i.e., 3.5 m/s) during the autumnal bat migration period;
- During Year One turbines will be curtailed at wind speeds below 6 m/s, from dusk to dawn (i.e., civil twilight), when ambient air temperatures are above six degrees (º) Celsius (C), between July 1 and September 30 (i.e., Year One Smart Curtailment); and
- The Project will extend the Year One Smart Curtailment program beyond Year One unless low SAR bat fatalities and use are observed, in which case the Year One Smart Curtailment program may be updated to consider additional factors (e.g., relative use within the Project Area, weather conditions).

Bat fatality estimates for the Project will be calculated in accordance with this PCMP and provided to Wildlife Division via Annual PCM Reports. The Project will consult with Wildlife Division to determine whether the Year One Smart Curtailment program warrants extension in the context of additional site-specific data, including the results of bat acoustic and/or thermal camera surveys.

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Appendix T

Domestic Woodcutting Consultation Plan

Appendix T
Domestic Woodcutting Consultation Plan

Argentia Renewables Project

Issued by: Argentia Renewables Wind LP
Project Facility: All Locations
Affected Facility: All Locations

Effective Date: July 31, 2024

Document Maintenance and Control

Argentia Renewables Wind LP (Argentia Renewables), an affiliate of Pattern Energy Group LP (Pattern), is responsible for the distribution, maintenance and updating of this Domestic Woodcutting Consultation Plan for the Argentia Renewables Project (the "Project"). This plan will be updated when needed for reasons including but not limited to reflecting changes in site-specific implementation, updating contact information, changes to scientific methods and survey best practices.

Document Version

Version #	Section(s) Revised	Prepared By	Approved By	Date Issued

Index of Major Changes/Modifications in Latest Version

Item #	Description of Change	Relevant Section

Table of Contents

List of Figures

1.0 Introduction

The Domestic Woodcutting Consultation Plan (DWCP) has been prepared by Argentia Renewables Wind LP (Argentia Renewables), an affiliate of Pattern Energy Group LP (Pattern Energy) for the Argentia Renewables Project (the Project), which involves the planning, construction, operation and maintenance, and eventual decommissioning and rehabilitation of an onshore wind energy generation facility (Argentia Wind Facility), a green hydrogen and ammonia production, storage, and export facility (Argentia Green Fuels Facility), and a Project Interconnect Line from the Port of Argentia (POA) to Long Harbour. The Project is located on POA property located within the Town of Placentia, Newfoundland and Labrador (NL); the Project Interconnect Line is sited on Crown Lands. This plan is intended to address the scope of work noted in Section 4.5 of the "Guidance for Registration of Onshore Wind Energy Generation and Green Hydrogen Production Projects" (Doc-2022-1022 issued by Department of Environment and Climate Change, GNL April 2023).

As per the guidance of the NL Department of Fisheries, Forestry and Agriculture (NL DFFA), this DWCP shall identify approaches on how to engage and understand concerns related to domestic woodcutting in the Project Area for the life of the Project.

1.2 Legal

This document has been developed in compliance with the requirements of the Province of NL. As a component of a Project Registration under the **Environmental Protection Act** and the **Environmental Assessment Regulations**, the document is considered to reflect a commitment by Argentia Renewables to carry out the actions described.

1.3 Purpose and Scope

The DWCP has been developed to outline the planned consultation methods and activities with domestic wood harvesters and other related stakeholders in the Project area over the lifetime of the Project.

1.4 Objectives

The DWCP has been prepared to ensure stakeholders are identified and consulted with in a meaningful way to ensure any concerns related to domestic woodcutting in the Project Area are understood and addressed. The main objectives of this plan are:

- Timely information sharing regarding wood harvesting requirements in the Project area;
- Early identification of wood harvesters active in the Project area;

- Development of mitigation measures, in consultation with stakeholders; and
- Equitable wood distribution and access for wood harvesters.

1.5 Site Description

The Project Area, Local Assessment Area (LAA), and Regional Assessment Area (RAA) considered in this DWCP are identified on Figure T-1.5-1 and described in Section 2.1 of the Environmental Assessment Registration Document.

Pattern | Argentia Renewables	FIGURE NUMBER: T - 1.5 - 1	COORDINATE SYSTEM: NAD 1983 CSRS UTM Zone 22N	PREPARED BY: C. Burke	DATE: 24/07/25
	FIGURE TITLE: Study Area Boundaries Associated with the Project	NOTES:	REVIEWED BY:	
	PROJECT TITLE: Argentia Renewables		APPROVED BY:	sem

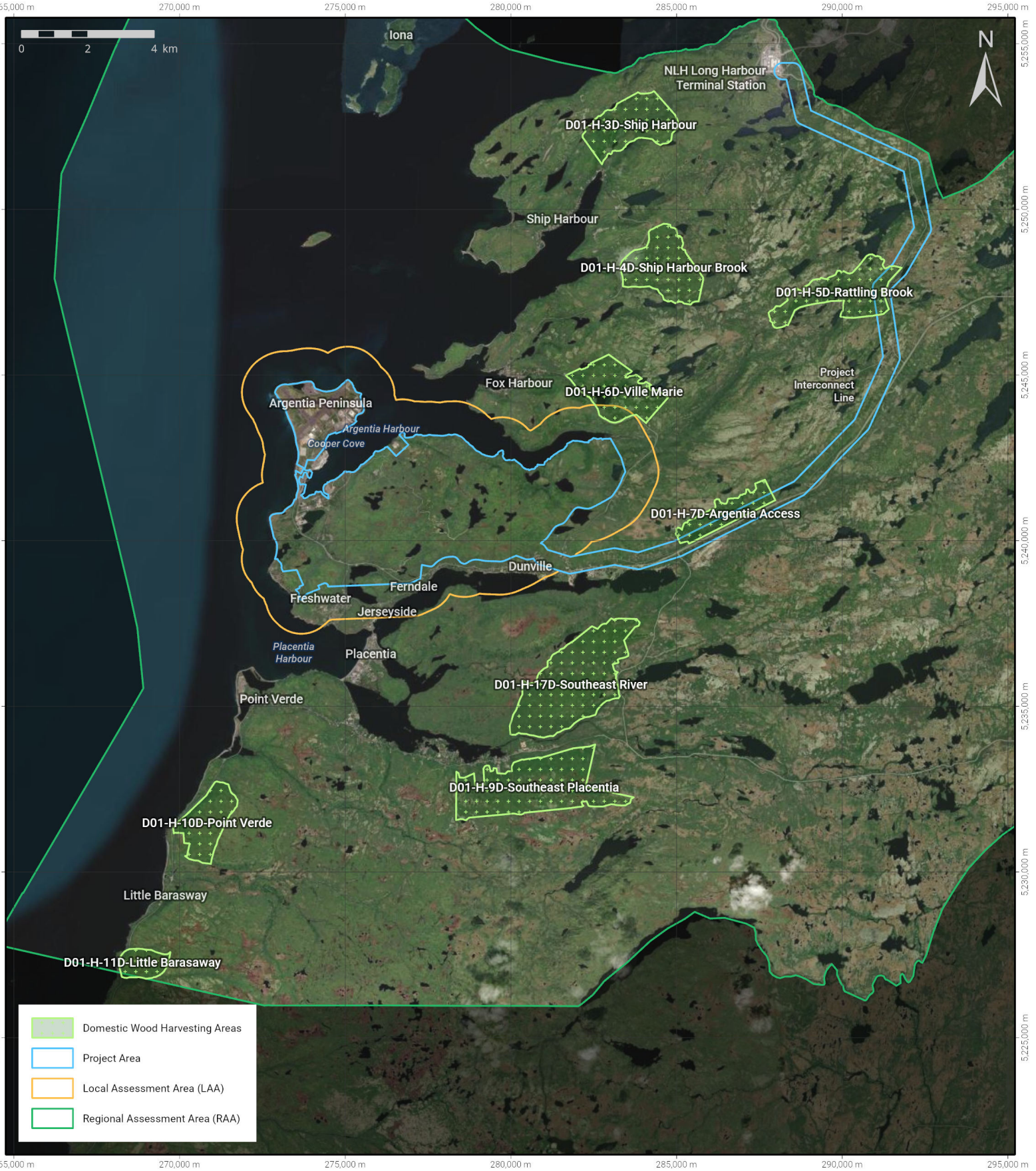
SEM MAP ID: 238-005-GIS-160-Rev0

2.0 Existing Conditions

The Project is in Domestic Harvesting District 01-Avalon and is managed by the NL DFFA. This area encompasses Avalon Peninsula east of Come by Chance. Permits are required for wood harvesting on Crown Lands. The surface area of the Avalon Peninsula is approximately 969,000 hectares (ha), where 628,800 hectares of Crown Land are included in the intensive forest inventory of the Avalon (NL DFFA, 2016). Except for private land, the entire land area located in Domestic Harvesting District 01-Avalon is currently managed by the Crown (NL DFFA, 2016). There is no ownership of land by Corner Brook Pulp and Paper (NL DFFA, 2016). The majority of Project activities will occur on POA Property; in which case, permitting of domestic wood harvesting is not applicable.

There are nine domestic cutting zones within the RAA. Two zones, D01-H-5D and D01-H-7D run along Route NL-101 and Route NL-100, respectively, and are located within the LAA for the Project Interconnect Line (Figure T-2.0-1).

In addition to the designated cutting zones in the area, within domestic harvesting District 01-Avalon there are special considerations for roadside wood harvesting. Excluding designated cutting zones, private lands, protected areas, parks, and outlined exclusion areas (not in RAA), domestic wood harvesting is permitted within 100 m from the center of a provincial highway or a NL Hydro transmission Line Right-of-Way (ROW) (NL DFFA, 2022). Within this area, people must only harvest dead and/or blowdown timber and only existing accesses may be used to reach the site (NL DFFA, 2022).



Pattern | Argentia Renewables	FIGURE NUMBER: T - 2.0 - 1	COORDINATE SYSTEM: NAD 1983 CSRS UTM Zone 22N	PREPARED BY: C. Burke	DATE: 24/07/25
	FIGURE TITLE: Domestic Wood Harvesting in the Project and Assessment Areas	NOTES: Domestic Harvest Area data sourced from NL Government Land Use Atlas on April 26, 2024.	REVIEWED BY:	
	PROJECT TITLE: Argentia Renewables		APPROVED BY: sem	

SEM MAP ID: 238-005-GIS-150-Rev0

3.0 Environmental Effects and Mitigation Measures

The following section outlines how the Project potentially effects domestic woodcutting activities within the Project area.

3.1 Overview

The Project examined the recreational and subsistence resource use of hunting and trapping, fishing/angling, domestic wood harvesting, and foraging in the Land and Resource Use chapter (*see* Chapter 3.1.4, Section 3.1.4.3), and assessed the Project activities and components that may result in adverse effects to land and resource use during each phase of the Project. These effects are anticipated to range from negligible to moderate in magnitude.

The Project is anticipated to have a low impact on land and resource use, including domestic woodcutting, since only the Project Interconnect Line is proposed to occur on Crown Lands. The majority of Project activities will occur on POA Property; in which case, permitting of domestic wood harvesting is not applicable. A portion of the Project Interconnect Line route runs through, or adjacent to, wood harvesting zones D01-H-5D and D01-H-7D. Upon determination of the final ROW, the effect on domestic woodcutting resource will be determined.

An examination of how the Project could potentially impact the domestic woodcutting resource, the mitigation measures, and consultation strategy throughout the life of the Project are provided in the sections below.

3.2 Site Preparation and Construction

Project site clearing may result in the alteration of recreational and/or subsistence land use along the Project Interconnect Line ROW due to changes in resource accessibility and availability. Site preparation and construction activities may reduce access to, or quality of, recreational use (i.e., noise, dust, visual).

Along the Project Interconnect Line, subsistence and recreational users are permitted to continue use on Crown Lands, when there is no active construction. This differs from the larger Project area located on POA Property. Where practicable, the Project will avoid and or minimize the loss of vegetation in harvesting areas through micro sitting of the Project Interconnect Line during the detail design and ROW selection. Where woodcutting is required, Argentina Renewables will provide advanced notification

to domestic wood harvesters of the area to be cleared, to provide an opportunity for harvesting before Project Interconnect Line construction begins. If wood is harvested by the Project, it will be made available to the public and a notification will be issued to advise that it is available for collection.

3.3 Operations and Maintenance

Project infrastructure will continue to reduce the availability of quality land available to domestic wood harvesting due to vegetation management requirements within the Project Interconnect Line ROW. This may result in the alteration of recreational and/or subsistence land use along Project Interconnect Line due to changes in resource accessibility and availability. During operations and maintenance, the Project Interconnect Line portion of the Project will not restrict public access; subsistence and recreational users are to continue use.

Primary mitigation is to continue communication with local wood harvesters and the public regarding vegetation management throughout the Operation and Maintenance Phase.

3.4 Decommissioning and Rehabilitation

Project clearing for infrastructure removal may result in the alteration of recreational and/or subsistence land use along the Project Interconnect Line due to changes in resource accessibility and availability. Disturbed areas will be restored and rehabilitated, to the extent necessary, to restore full subsistence land resource use.

Primary mitigation is to continue communication with local wood harvesters and the public regarding decommissioning and rehabilitation plans.

3.5 Mitigation Measures

Planned mitigations to minimize the impact to domestic woodcutting stakeholders are:

- Project micro siting, including the twinning of lines along existing linear corridors such as transmission lines and roads, where practicable, to reduce the volume of vegetation removal and limit damage associated with Construction and Maintenance activities (i.e., equipment).
- Consultation with NL DFFA prior to the start of construction to identify wood harvest permit holders in the area and assess how wood cut during Construction can be made available to the local community. This would primarily be implemented where cutting on Crown Lands within domestic cutting areas is unavoidable.

- Communication with local wood harvesters throughout all Project phases (see Section 4.0). This includes consultation with stakeholders of affected domestic woodcutting areas to identify and address any issues or concerns.

4.0 Consultation Strategy

The consultation process will be open and transparent with stakeholders to ensure that the Project scope is fully understood, and any questions are answered. The loss of area available for woodcutting will be examined and mitigation measures noted in Section 3.5 will be reviewed with affected stakeholders. Strategies will be developed, through consultation, to ensure access to resources during all phases of the Project.

The following section outlines how the Project plans to engage with stakeholders regarding domestic woodcutting activities potentially affected by the Project.

4.1 Stakeholder Engagement

- Argentia Renewables will consult with the NL DFFA to identify active wood harvesters in the area to initiate direct engagement. The list will need to be updated annually to account for new permit holders.
- Meetings with NL DFFA and local wood harvesters will occur, as required.
- Public information sessions will include maps and information regarding woodcutting along the Project Interconnect Line ROW.
- The community liaison committee will be made aware of woodcutting requirements and asked to the share information with known wood harvesters and raise any questions or concerns from the community to be addressed by the Project.

4.2 Information Distribution

- Interested stakeholders can request to be added to the Project email distribution list. Notifications or advisories regarding Project woodcutting requirements will be shared through email.
- Public Service Announcements (PSAs) will be used to inform the public of upcoming woodcutting activities. PSAs will be distributed through media, local websites, including the Town of Placentia and the POA, and via social media, to ensure broad reach.

4.3 Ongoing Communication

- The Project website will contain a map of the Project Interconnect Line ROW and information regarding woodcutting activities, including timing and contact information for affected stakeholders.
- Social media posts will be used to share notifications and advisories to the broader community.
- The Project newsletter may include an update on woodcutting activities, including a map and schedule.

5.0 References

Department of Fisheries, Forestry & Agriculture. (2016). *Five Year Sustainable Forest Management Plan for Forest Managment District 01*. https://www.gov.nl.ca/ecc/projects/project-1863/

Department of Fisheries, Forestry & Agriculture. (2022). *Domestic Harvest Area 2022-2026*. Forest Service of NL. https://www.gov.nl.ca/ffa/files/D01-H-1D-Long-Harbour.pdf