

July 6, 2023

Cedar LNG Partners (GP) Ltd.
2500-666 Burrard St.
Vancouver, BC V6C 2X8

Attention: Cedar LNG Partners (GP) Ltd.

RE: Determination of Application Number 100115227

Permit Holder: Cedar LNG Partners (GP) Ltd.
Date of Issuance: July 6, 2023
Effective Date: July 6, 2023
Application Submission Date: May 5, 2022
Application Determination Number: 100115227
Approved Disturbance Footprint: 60.921 ha

AUTHORIZED ACTIVITIES

Facility Identification No.: 00027543	Facility Name: CEDAR KITIMAT B-076-J/103-H-15 001
Changes In and About a Stream: 0007324	

GENERAL PERMISSIONS, AUTHORIZATIONS AND CONDITIONS

PERMISSIONS

Oil and Gas Activities Act

1. The British Columbia Energy Regulator (the Regulator), under section 25 (1) of the *Oil and Gas Activities Act*, hereby permits the permit holder referenced above to carry out the following activities, indicated in the Authorized Activities table above, subject to the conditions contained herein, any applicable exemptions and authorizations:
 - a. To construct, maintain and operate a facility(s), and piping and equipment associated with the facility(s) as detailed in the Technical Specification Details tables below.
2. The permissions and authorizations granted under this permit are limited to the area identified in the spatial data submitted to the Regulator in the permit application as identified and dated above; herein after referred to as the 'activity area'.

Land Act

3. The Regulator, pursuant to section 39 of the *Land Act*, hereby authorizes the occupation and use of any Crown land located within the activity area.
 - a. A licence authorized under section 39 of the *Land Act* for the Crown land portion of this application will follow. The permit holder is subject to the conditions contained in the Licence.
 - b. The authorization to occupy and use Crown land does not entitle the permit holder to exclusive possession of the activity area.

- c. The total disturbance within the activity area must not exceed the total approved disturbance footprint as referenced above.

CONDITIONS

Notification

4. Within 60 days of the completion of construction activities under this permit, the permit holder must submit to the Regulator a post-construction plan as a shapefile accurately identifying the location of the total area actually disturbed under this permit. The shapefile must be submitted via eSubmission.
5. The Permit Holder must notify the First Nation(s) copied on this permit/authorization at least 5 (five) working days prior to project commencement.

General

6. The rights granted by this permit in relation to unoccupied Crown land are subject to all subsisting grants to or rights of any person made or acquired under the *Coal Act, Forest Act, Land Act, Mineral Tenure Act, Petroleum and Natural Gas Act, Range Act, Water Sustainability Act or Wildlife Act*, or any extension or renewal of the same.
7. The permit holder must not assign, sublicense, or permit any person other than its employees, contractors or representatives, to use or occupy any Crown land within the activity area without the Regulator's written consent.
8. The permit holder must ensure that any Crown land within the activity area is maintained in a condition so as to minimize hazards, including but not limited to hazards associated with storage of materials and equipment.
9. The permit holder must ensure that any Crown land within the activity area is maintained free of garbage, debris, and derelict equipment.

Environmental

10. Construction activities must not result in rutting, compaction or erosion of soils that cannot be reasonably rehabilitated to similar levels of soil productivity that existed on the activity area prior to the construction activities taking place.
11. Any temporary access must be constructed and maintained in a manner that provides for proper surface drainage, prevents pooling on the surface, and maintains slope integrity.

Water Course Crossings and Works

12. Stream, lake, and wetland crossings must be constructed in accordance with the methods and any mitigations, as specified in the application.
13. Construction or maintenance activities within a fish bearing stream or wetland must occur:
 - a. during the applicable reduced risk work windows as specified in the Skeena Region - Reduced Risk Work Windows;
 - b. in accordance with alternative timing and associated mitigation recommended in a plan prepared by a qualified professional and accepted by the Regulator or
 - c. in accordance with an authorization or letter of advice from Fisheries and Oceans Canada that is provided to the Regulator;

If activities are to occur in accordance with b or c above, the documentation must be submitted to the BCER at postpermitrequests@bc-er.ca prior to commencement of activities.

14. At any time, the Regulator may suspend instream works authorized under this permit. Suspensions on instream works will remain in place until such time as the Regulator notifies permit holders that works may resume. Reasons for suspension of works may include, but are not limited to, drought conditions and increased environmental or public safety risks.
15. Equipment used for activities under this Permit must not be situated in a stream channel unless it is dry or frozen to the bottom at the time of the activity.

16. Stream diversion structures must be constructed, maintained, and deactivated according to the following requirements, as applicable:
- a. To facilitate construction of a crossing, a machine is permitted to ford the stream a maximum of one time in each direction at the crossing location.
 - b. The permit holder must ensure that
 - i. culverts are designed and fabricated in compliance with the applicable:
 - a. Canadian Standards Association Standard CSA G401, Corrugated Steel Pipe Products; or
 - b. Canadian Standards Association Standard CSA B1800, Section B182.8, Plastic Non-pressure Pipe Compendium; or
 - ii. any pipe installed in lieu of a culvert is of at least equivalent standard and strength as any culvert as specified above.
 - c. The permit holder must ensure that the culvert is designed to pass the highest peak flow of the stream that can reasonably be expected within the return periods set out in Column 2 of the table below for the period the permit holder anticipates the structure will remain on site, as set out in Column 1 of the table below:

Anticipated period crossing structure will remain on site	Peak flow period
Culvert, 3 years or less	10 years
Culvert, more than 3 years	100 years

Archaeology

17. If an artifact, feature, material, or thing protected under the *Heritage Conservation Act* is identified within the activity area, the permit holder must, unless the permit holder holds a permit under Section 12.4 of the *Heritage Conservation Act* issued by the Regulator in respect of that artifact, feature, material, or thing:
- a. Immediately cease all work in the vicinity of the artifacts, features, materials, or things;
 - b. Immediately notify the Regulator; and
 - c. Resume work in the vicinity of the artifacts, features, materials, or things in accordance with direction from the Regulator.

ACTIVITY SPECIFIC DETAILS, PERMISSIONS AND CONDITIONS

FACILITIES

Land Area Number: 100018702

TECHNICAL SPECIFICATION DETAILS

Facility ID: 00027543	Facility Name: CEDAR KITIMAT B-076-J/103-H-15 001
Facility Type: LNG Facility	Equipment: Flare Stack
Equipment: Dehydrator	Equipment: Incinerator
Equipment: Facility Storage	Location: B-076-J/103-H-15

Definitions

For the purposes of interpreting the portions of this permit that pertain to flaring:

Normal operations exclude emergency conditions and commissioning.

Emergency conditions involve activation of facility safety systems that could lead to emergency flaring. Emergency flaring occurs when safety controls within the LNG facility are enacted to depressurize equipment to avoid possible injury or property loss resulting from explosion, fire, or catastrophic equipment failure.

Process upset means deviations that require the operator to take measures that pre-empt activation of safety systems or prevent production loss. **Process upset** excludes safety systems activation.

For the purposes of interpreting the below conditions that pertain to the LNG Facility,

LNG facility construction begins with the installation of foundations and other civil works and includes activities integral to the LNG facility including the construction of buildings and structures, assembly and integration of modular units. LNG facility construction does not include site preparation activities that precede the actual erection of the tanks, vessels, equipment and its associated foundations.

Commissioning means the period of time commencing when operations begin in accordance with section 11 of the Liquefied Natural Gas Facility Regulation (LNGFR) and ending when the first cargo of LNG is shipped from the LNG Facility.

Technical Permissions

18. Subject to the conditions contained herein, the Permit Holder may flare gas from the three flares, identified as "Warm Flare", "Cold Flare", and "LP Flare" in the Flare, Relief, Venting, and Blowdown Philosophy Rev A 21 Feb 2022 for the following purposes:
 - a. flare pilots;
 - b. flare system purge;
 - c. process upsets; and
 - d. commissioning and start up

Facility Conditions

19. The Permit Holder must ensure that the engineering design and siting for the LNG facility is completed in accordance with Canadian Standards Association (CSA) EXP276.2, "Design requirements for near-shoreline floating liquefied natural gas (FLNG) facilities".
20. The Permit Holder must ensure that the construction, operation and maintenance of the LNG facility are completed in accordance with CSA EXP276.2.
21. The Permit Holder must obtain and maintain certification by a classification society that has an authorization agreement with Transport Canada under the Delegated Statutory Inspection Program to inspect and certify vessels in accordance with rules or standards applicable to floating liquefied natural gas facilities and position mooring systems, for:
 - a. the floating portion of the LNG facility inclusive of flexible piping used to convey feed gas to the vessel; and
 - b. the mooring system.
22. The Permit Holder must ensure that the engineering design and siting for marine structures, including foundations, associated with the LNG facility is completed in accordance with CSA SPE-276.1, "Design requirements for marine structures associated with LNG facilities".
23. The Permit Holder must ensure that the construction, operation, and maintenance of the marine structures are completed in accordance with CSA SPE-276.1.
24. The LNG facility must not exceed any of the following:
 - a. a maximum inlet gas rate of 11.3 e6m3/day (at 101.325 kPaa and 15°C)
 - b. a maximum inlet gas H2S concentration of 16ppm;
 - c. a maximum of two LNG liquefaction trains;
 - d. a maximum of 4 membrane type LNG storage tanks;
 - e. a maximum of one loading berth; or

- f. the following maximum storage limits:

Stored Substance	Maximum Storage Capacity
LNG	4 x 45,000 m ³
Refrigerants:	
Ethylene	93 m ³
Propane	162 m ³
Isopentane	276 m ³
Condensates	27 m ³
Marine Gas Oil / Diesel	2495 m ³

25. The Permit Holder must not undertake any LNG facility construction until it has submitted via email to postpermitrequests@bc-er.ca, referencing AD#100115227, the following documentation signed and sealed by a qualified professional:
- a. The site-specific seismic design criteria for the mooring system per CSA EXPZ276.2 clause A.1.2;
 - b. A mooring assessment consistent with CSA EXPZ276.2 clause 5.4 which reflects the final configuration of the mooring system;
 - c. List of fatigue sensitive components of the mooring system considered under CSA EXPZ276.2 clause 5.2.6;
 - d. Performance standard(s), per CSA EXPZ276.2 clause 4.7.5, for the north and south strut foundations and a plan to verify the installed foundations against the standard(s);
 - e. A plan, per CSA EXPZ276.2 clause 12.3.4, for integration of the floating portion of the LNG facility, mooring struts, and strut foundations at the LNG Facility site which includes:
 - i. A description of key activities including any key supporting 3rd party equipment
 - ii. Description of temporary works to facilitate integration
 - iii. Assumed geotechnical parameters for construction and integration phases including seismic design criteria
 - iv. Assumed Metocean parameters for construction and integration phases including wind speed, wave height, wave period, current speed, and water levels
 - f. a transit plan per CSA EXPZ276.2 clause 12.3.2.2; and
 - g. an assurance plan per CSA EXPZ276.2 clause 12.3.2.3.
26. The Permit Holder must not undertake commissioning or operation of the LNG facility until it has submitted via email to postpermitrequests@bc-er.ca, referencing AD#100115227, a statement signed and sealed by a qualified professional, that indicates the date for which the 25 year design life of the mooring system, inclusive of foundations, is considered to have begun.
27. The Permit Holder must decommission the floating portion of the LNG Facility no later than 25 years from the date provided in condition 26.
28. The Permit Holder must, prior to any LNG facility construction provide a statement, signed and sealed by a qualified professional, which:
- a. Summarizes and demonstrates the qualified professional's relevant experience in mechanical engineering; and
 - b. Confirms the suitability of the design of the hinges used to connect the mooring struts to the anchor foundations and floating portion of the LNG facility.
29. The Permit Holder must not undertake installation of the land side anchorage assemblies or mooring struts, until it has submitted via email to postpermitrequests@bc-er.ca, referencing AD#100115227, documentation signed and sealed by a qualified professional demonstrating that the minimum performance standards as defined in condition 25(d) for the north and south strut foundations have been achieved.
30. The Permit Holder must not undertake commissioning of the LNG facility until it has submitted via email to postpermitrequests@bc-er.ca, referencing AD#100115227, a Flaring Management Report that

- documents measures to design, construct, and operate the LNG facility to minimize flaring of gas and associated emissions, including but not limited to, black smoke during commissioning.
31. The Flaring Management Report must be submitted to the Regulator at least 18 months prior to commencement of commissioning.
 32. The Permit Holder must implement the measures set out in the Flaring Management Report.
 33. The Permit Holder must ensure that the construction and operation of the LNG facility include a thermal oxidizer sized to manage continuous combustion of waste gas.
 34. The Permit Holder must ensure that emissions from the flares and the thermal oxidizer do not:
 - a. Create a hazard to public health or safety;
 - b. Result in off-lease odours; or
 - c. Result in injury to vegetation or wildlife.
 35. Subject to section 18(3) of the Liquefied Natural Gas Facility Regulation (LNGFR), the Permit Holder must design, maintain and operate flares and the thermal oxidizer so that operation, other than flaring for emergency purposes, does not result in:
 - a. The emission of black smoke during normal operations; or
 - b. The emission of black smoke during process upsets that exceed a period or periods aggregating more than 15 minutes in any two hour period.
 36. The Permit Holder must notify the Regulator at least 24 hours before a planned venting event, and within 24 hours of an unplanned venting event, if the event results in the release of any substance other than nitrogen from the maintenance vent.
 37. The Permit Holder must not undertake commissioning or operation of the LNG facility until it has submitted via email to postpermitrequests@bc-er.ca, a Flaring Notification Plan. The Flaring Notification Plan must include:
 - a. An engagement record with residents within a radius of 1km of the LNG facility, the Regional District of Kitimat-Stikine, the District of Kitimat, and the Haisla Nation,
 - b. Notification processes specific to:
 - i. Flaring during commissioning; and
 - ii. Flaring during operations; and
 - c. Notification to residents within a radius of 1km of the LNG facility, the Regional District of Kitimat-Stikine, the District of Kitimat, and the Haisla Nation regarding a flaring event.
 38. The Permit Holder must notify residents within a radius of 1km of the LNG Facility, the Regional District of Kitimat-Stikine, the District of Kitimat and the Haisla Nation at least 24 hours before a planned flaring event or within 24 hours of the start of an unplanned flaring event if the quantity of gas exceeds 10,000 m³ per event or the duration exceeds 4 hours. This notification must be conducted in accordance with the Flaring Notification Plan referenced in condition 37 above.
 39. The Permit Holder must not undertake commissioning or operation of the LNG facility until it has submitted via email to postpermitrequests@bc-er.ca, a detailed noise impact assessment, signed and sealed by a qualified professional, which includes:
 - a. The sound power levels of the dominant noise sources and the basis of the sound power level;
 - b. Details of noise mitigations applied;
 - c. Results showing the predicted dBA and dBC comprehensive sound levels at far-field (1.5 km) locations and residences under representative weather conditions; and
 - d. Noise contours that demonstrate that the LNG facility does not direct significantly more noise in any particular direction under representative weather conditions.
 40. Within two years of completing commissioning, the Permit Holder must submit via email to postpermitrequests@bc-er.ca, referencing AD#100115227 a noise survey for the LNG facility which:

- a. includes data measurement and an assessment of whether the noise emissions meet permissible sound levels as listed in the table below
- b. assesses whether the measured isolated time-weighted average dBC-dBA value for day and nighttime periods is equal to or greater than 20 dB
- c. assesses whether a clear tonal component exists at a frequency below 250 hertz
- d. subject to condition 42, has been conducted
 - i. at maximum operating conditions, or
 - ii. at steady state if maximum operating conditions are not yet reached, provided that an additional survey is conducted once maximum operating conditions are reached.
- e. utilizes the following receptors and PSLs as assessment locations

Receptor	UTM (Zone 10 NAD 83) Coordinates		Permissible Sound level	
	Easting	Northing	Day	Night
Receptor 1 Kitamaat Village Residence 1 (EAC Application: R13)	522774	5979712	50 dBA	40 dBA
Receptor 2 1.5km Boundary (EAC Application: L1)	519106	5978779	50 dBA	40 dBA

- 41. The Permit Holder may locate the noise survey equipment to an acoustically comparable location within a 75-meter radius of the target locations in the table identified above in condition 40.
- 42. The noise survey(s) required under condition 40 must be completed when there is no snow, ice, or frozen ground cover and ambient temperatures are above zero degrees Celsius for the duration of the survey.
- 43. On request of the Regulator, the Permit Holder must submit, via email to postpermitrequests@bc-er.ca, referencing AD#100115227, noise surveys or additional noise assessments. If the LNG facility noise emissions exceed the permissible sound levels listed in the condition above, the Permit Holder must develop and implement a Noise Management Plan.
- 44. The Permit Holder must, prior to any construction of the floating portion of the LNG facility, submit, via email to postpermitrequests@bc-er.ca, an updated report, which discusses all facility air and water discharges and includes:
 - a. A summary of completed modeling work to assess impacts on the receiving environment,
 - b. Key results from modeling work completed,
 - c. Comparison to available provincial air quality objectives and water quality guidelines,
 - d. Steps taken to minimize impact on receiving environment,
 - e. Steps considered but not implemented to minimize impact on receiving environment and rationale for their exclusion,
 - f. Plans for any additional sampling, testing, technology qualification, modeling, and other relevant activities prior to operation, and
 - g. A summary that demonstrates the qualifications and professional experience of the author(s) as they relate to the contents of the report.
- 45. The Permit Holder must select, install, and maintain a lighting design that conforms to the Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations, Commission Internationale de l'Eclairage (CNC/CIE) 150:2017, as amended from time to time. The design must incorporate the following mitigation measures:
 - a. Minimizing the brightness of lights and the amount of lighting required while ensuring safe operation of the LNG facility,

- b. Use of automated sensors that shut down lighting in areas of no activity where it is safe to do so, and
 - c. Re-angling, shading, shielding, or screening of lighting to direct lighting downward and inward and to avoid glare at receptors.
46. The Permit Holder must not undertake any LNG facility construction until it has submitted via email to postpermitrequests@bc-er.ca, referencing AD#100115227, an updated Metocean Analysis Report signed and sealed by a qualified professional which includes:
- a. For generalized and site-specific data: parameter, data source, monitoring station location, capture duration,
 - b. Analysis of any variances between the generalized and site-specific data with respect to the Basis of Design,
 - c. Methodology for obtaining 100-year return period conditions from the available data set, and
 - d. Rationale for any scaling or adjustment to parameters to accommodate data uncertainty.
47. The Permit Holder must not undertake commissioning or operation of the LNG facility until it has submitted via email to postpermitrequests@bc-er.ca, referencing AD#100115227, relevant excerpts of the facility operations manual, per CSA EXPZ276.2 clause 10.7, which describe the Permit Holder's approach to continuous monitoring and evaluation of local wind, wave, and current parameters.
48. The Permit Holder must ensure that the LNG facility operates in accordance with the facility operations manual described in CSA EXP Z276.2 clause 10.7.
49. The Permit Holder must not undertake any LNG facility construction until it has submitted via email to postpermitrequests@bc-er.ca, referencing AD#100115227, an updated tsunami hazard study report for the LNG facility site, consistent with CSA EXPZ76.2. clauses A.2.2 and A.2.3, signed and sealed by a qualified professional, that includes:
- a. supporting detail which shows all credible origins and orientations of landslide induced tsunamis have been included in the tsunami hazard study, and
 - b. rationale for the slide volume used for the modeling work of the maximum credible tsunami event or the 2,475-year return period event.
50. The Permit Holder must not undertake any LNG facility construction until it has submitted via email to postpermitrequests@bc-er.ca, referencing AD#100115227, a report, signed and sealed by a qualified professional, that demonstrates the risk of failure of the mooring system as a result of a 2,475-year return period tsunami event occurring while an LNG carrier is moored at the terminal is As Low As Reasonably Practicable (ALARP). The report must include key assumptions, methodology, input data, consequence analyses, and an evaluation of potential risk reduction strategies.
51. The Permit Holder must include mitigations in the Permit Holder's emergency response plan to address risks associated with tsunamis up to and including a 2,475-year return period event, in accordance with CSA EXP276.2. The plan shall include event(s) where an LNG Carrier is moored at the LNG Facility.
52. The Permit Holder must not undertake any LNG facility construction until it has submitted via email to postpermitrequests@bc-er.ca, referencing AD#100115227, an updated quantitative risk assessment, signed and sealed by a qualified professional to demonstrate compliance with clause 14 of CSA Z276, that includes the following:
- a. a frequency assessment that describes the data sources used in the analysis, parts counts, and all assumptions applied;
 - b. an assessment of the frequency and consequences of LNG loading incidents, including loading system failures due to ship movement, and the potential for failure of the loading system emergency shutdown systems;
 - c. presentation of figures with a consistent background image that clearly shows the graphical scale, major elements of the facility plot plan, water line, facility boundary, and relevant local features; and
 - d. a report demonstrating whether the risks are ALARP and not intolerable for the operational phase.

53. The Permit Holder must not undertake commissioning or operation of the LNG facility until it has submitted via email to postpermitrequests@bc-er.ca, referencing AD#100115227:
- a. a plan for implementation of a marine safety zone within all marine portions of the activity area at all times;
 - b. documentation signed and sealed by a qualified professional verifying that the required Safety Integrity Levels were achieved;
 - c. an updated quantitative risk assessment, signed and sealed by a qualified professional to demonstrate compliance with Clause 14 of CSA Z276, that includes the following:
 - i. a detailed frequency assessment that describes the data sources used in the analysis, parts counts, and all assumptions applied;
 - ii. a detailed assessment of the frequency and consequences of LNG loading incidents, including loading system failures due to ship movement, and the potential for failure of the loading system emergency shutdown systems;
 - iii. presentation of figures with a consistent background image that clearly shows the graphical scale, major elements of the facility plot plan, water line, facility boundary, and relevant local features;
 - iv. a report demonstrating whether the risks are As Low As Reasonably Practicable (ALARP) and not intolerable for the operational phase.
 - d. the associated fatigue life of the components identified pursuant to condition 25(c) above.
54. The Permit Holder must implement the marine safety zone in accordance with the plan submitted via email to postpermitrequests@bc-er.ca, referencing AD#100115227, pursuant to condition 53(a) above.
55. The Permit Holder must comply with the applicable requirements set out in the “BC Measurement Guideline” [BC-Measurement-Guideline.pdf \(bc-er.ca\)](#), as amended from time to time.
56. The Permit Holder must submit the notice required under section 3(1)(g) of the LNGFR in writing to pipelines.facilities@bc-er.ca, referencing AD#100115227, and by submitting a “Notice of Construction Start” form through KERMIT.
57. The Permit Holder must not undertake any LNG facility construction until it has submitted via email to postpermitrequests@bc-er.ca, referencing AD#100115227, an operating phase drainage control plan for onshore facilities which has been signed and sealed by a qualified professional. The plan is to include design, operation, and maintenance requirements.

ADVISORY GUIDANCE

1. Construction Plan - 23531048801SKH001.pdf is for the permit holder's internal reference only and was not reviewed as a decision tool for this permit, nor does it form an integral part of this permit.
2. Instructions for submitting notice of construction start, as required by regulation, can be found in the Oil and Gas Activity Operations Manual on the Regulator's website.
3. Appropriate tenure may be issued upon acceptance of the post-construction plan. Submission of the original application and submission of the post-construction plan is considered an application for all subsequent applicable *Land Act* tenures. Upon the Regulator's acceptance of the post-construction plan no further applications for replacement tenure are required.
4. Under the authority of the *Environmental Management Act* a discharge permit must be in place/amended prior to the leave to open of the subject application.

All pages included in this permit and any attached documents form an integral part of this permit.



Authorized Signatory
BCER Delegated Decision Maker

Copied to:

First Nations – Haisla Nation Council
Landowners
Engineering Firm – Solaris Management Consultants Inc