

A2 – Alaska Gasline Development Corporation

ALASKA LNG

AKLNG-6020-REG-COR-REC-00202

October 3, 2019

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE
Washington, D.C. 20426

RE: OEP/DG2E/Gas 3
Alaska Gasline Development Corporation – Alaska LNG Project
Docket No. CP17-178-000
§ 375.308(x)

Dear Ms. Bose:

On June 28, 2019, the Federal Energy Regulatory Commission's (FERC) Office of Energy Projects (OEP) issued the Draft Environmental Impact Statement FERC/EIS-0296D (DEIS) for the Alaska LNG Project application pending in the referenced proceedings.

We commend OEP staff for their work to verify and distill the voluminous research and studies associated with this project. To further strengthen the EIS, enclosed for filing and consideration are the Alaska Gasline Development Corporation's (AGDC) comments on the DEIS, including:

- Attachment 1 – AGDC's comments in a table format that: (1) identifies the applicable section of the DEIS; (2) provides an excerpt of the relevant DEIS text; (3) provides AGDC's comment and rationale; and (4) suggests text changes and/or provides suggested corrections for consideration in resolving the comment;
- Attachment 2 – Attachments such as study reports, suggested table corrections, and other supporting documents referenced in Attachment 1. The attachments are organized in the order they are referenced in Attachment 1; and
- Attachment 3 – AGDC's affirmations of and/or comments to the 214 staff recommended mitigation measures in Section 5.2 of the DEIS. Filed previously were AGDC's responses to the 28 mitigation measures that were required to be addressed before the end of the DEIS comment period.

As noted in our detailed comments, there are several resources that deserve additional consideration in light of studies conducted in Alaska and to be consistent with legal requirements and defined regulatory agency jurisdictions. This is particularly true for the contextual assessment of potential caribou, air quality, permafrost, and wetland impacts. Unlike most of the resource areas assessed in the DEIS, assessments of permafrost and wetlands in particular would benefit from additional consideration of the context component of impact assessment. As outlined in CEQ regulations (40 CFR 1508.27), assessment of significance are to include consideration of both intensity and context. AGDC's comments provide additional context for consideration.

A2-1

A2-1

See the response to comment A1-1.

Alaska Gasline Development Corporation
3201 C Street, Suite 201, Anchorage, Alaska 99503
Tel. 907-330-6300 | Fax 907-330-6309 | www.agdc.us

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AGDC recognizes the significant work effort of the OEP team and appreciates the opportunity to submit comments for consideration. Further, we welcome any additional questions on the attached materials.

Respectfully submitted,



Frank T. Richards, P.E.
Senior Vice President, Program Management

Attachments:

1. AGDC's Comment Response Table to the June 2019 DEIS
2. Supporting Documents to the Comment Response Table
3. AGDC's Response to FERC Staff Recommended Mitigations

cc:

All Parties

A2 – Alaska Gasline Development Corporation (cont'd)

ATTACHMENT 3
AGDC's Response to FERC Staff Recommended Mitigations

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A2 – Alaska Gasline Development Corporation (cont'd)

AGDC Response			
In response to staff recommendation 1, AGDC will, during construction follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff environmental information requests) and as identified in the EIS, unless modified by the Order. AGDC will: a. request any modification to these procedures, measures, or conditions in a filing with the Secretary; b. justify each modification relative to site-specific conditions; c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and d. receive approval in writing from the Director of the OEP before using that modification.	A2-2	A2-2	See the response to comment A1-1.
In response to staff recommendation 2, AGDC will recognize the Director of the OEP, or the Director's designee, as the delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order and take whatever steps are necessary to ensure the protection of life, health, property, and the environment during Project construction and operation.	A2-3	A2-3	See the response to comment A1-1.
In response to staff recommendation 3, AGDC will recognize the Director of the OEP, or the Director's designee, as the delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of environmental resources during construction and operation of the Project.	A2-4	A2-4	See the response to comment A1-1.
In response to staff recommendation 4, AGDC will, prior to construction file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, EIs, and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs before becoming involved with construction and restoration activities.	A2-5	A2-5	See the response to comment A1-1.
In response to staff recommendation 5, AGDC will, prior to construction file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000, with station positions for all facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances will be written and will reference locations designated on these alignment maps/sheets.	A2-6	A2-6	See the response to comment A1-1.
In response to staff recommendation 6, AGDC will, prior to construction file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas will be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of the OEP before construction in or near that area. AGDC understands this requirement will not apply to extra workspace allowed by FERC's Plan and/or minor field realignments per landowner needs and requirements that do not affect other landowners or sensitive environmental areas such as wetlands. Examples of alterations requiring approval include all route realignments and facility location changes resulting from: a. implementation of cultural resources mitigation measures; b. implementation of endangered, threatened, or other special status species mitigation measures; c. recommendations by state regulatory authorities; and d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.	A2-7	A2-7	See the response to comment A1-1.

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A2 – Alaska Gasline Development Corporation (cont'd)

AGDC Response			
<p>In response to staff recommendation 7, AGDC will, at least 60 days before construction begins, file an Implementation Plan with the Secretary for the review and written approval of the Director of the OEP. AGDC will file revisions to the plan as schedules change. The plan will identify:</p> <ul style="list-style-type: none"> a. how AGDC will implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff environmental information requests) identified in the EIS and required by the Order; b. how AGDC will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to on-site construction and inspection personnel; c. the number of EIs assigned per spread and how the company will ensure that sufficient personnel are available to implement the environmental mitigation; d. company personnel, including EIs and contractors, who will receive copies of the appropriate material; e. the location and dates of the environmental compliance training and instructions AGDC will give to all personnel involved with construction and restoration (initial and refresher training as the Project progresses and personnel change), with the opportunity for OEP staff to participate in the training sessions; f. the company personnel (if known) and specific portion of AGDC's organization having responsibility for compliance; g. the procedures (including use of contract penalties) AGDC will follow if noncompliance occurs; and h. for each discrete facility, a Gantt or PERT chart (or similar Project scheduling diagram), and dates for: <ul style="list-style-type: none"> i. the completion of all required surveys and reports; ii. the environmental compliance training of on-site personnel; iii. the start of construction; and iv. the start and completion of restoration. 	A2-8	A2-8	See the response to comment A1-1.
<p>Please see detailed DEIS comments on this issue in Attachment 1, including an updated EI program overview. In summary, the requirement for the number of EIs per spread to be determined by the Director of the OEP adds potential risk and cost uncertainty to the Project, is not unprecedented, and does not appear warranted considering AGDC will, in fact, exceed the FERC minimum requirements. In addition, this Staff Recommendation differs from the language in section 2.4.1 that describes the requirements for EIs and indicates the implementation plan submitted for FERC approval is the way AGDC is to identify specifics regarding the EI program. As noted in section 2.4.1 of the DEIS, AGDC proposed to include at least one EI per spread in accordance with the minimum requirements set by the FERC in their Upland Erosion Control, Revegetation, and Maintenance Plan for interstate natural gas pipeline projects. The EI program has been further developed in the EI Program Overview (attached to AGDC's DEIS comment table), demonstrating AGDC's commitment to implementing a strong EI program. Given that commitment, AGDC requests revision to:</p> <p>"AGDC shall employ a team of EIs per construction spread as presented for FERC approval in the implementation plan. The EIs shall be:</p> <ul style="list-style-type: none"> a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents; b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 7 above) and any other authorizing document; c. empowered to order correction of acts that violate the environmental conditions of the Order and any other authorizing document; d. a full-time position, separate from all other activity inspectors; e. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and f. responsible for maintaining status reports." 	A2-9	A2-9	See the response to comment A1-1.
<p>Please note: a redline for this change is also included in AGDC's DEIS review comment table.</p> <p>AGDC believes staff recommendation #9 would be improved and more consistently implemented by defining the scope for the phrase "problems of a significant magnitude" in the recommendation that "Problems of a significant magnitude shall be reported to FERC within 24 hours." It is unclear to AGDC if the 24-hour reporting requirement is intended to be linked to existing legal definitions and thresholds such as any releases over Reportable Quantity levels that must be reported to the National Response Center, or if this recommendation is attempting to address other concerns during construction activities.</p>	A2-10	A2-10	See the response to comment A1-1.

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AGDC Response				
AGDC can appreciate that the FERC wants to know as soon as possible if a problem of a significant magnitude occurs. If this is expected to be addressed in the context of the otherwise "standard" status reporting recommendation in this Recommended Mitigation, AGDC recommends that, in addition to clarifying the definition, the FERC consider modifying the requirement to clarify that problems of a significant magnitude will be reported "to the FERC compliance monitor" within 24 hours. To address these issues, AGDC suggests clarification of the 24-hour reporting requirement with details such as, "Any releases over Reportable Quantity levels that must be reported to the National Response Center (NRC) must also be reported to the FERC compliance monitor within 24 hours." Please note: a redline for this change is also included in AGDC's DEIS review comment table.	A2-10			
In response to staff recommendation 10, AGDC will, during construction employ a special inspector during construction of the Liquefaction Facilities, and a copy of the special inspector's reports will be included in the monthly status reports filed with the Secretary (see condition 9 above). The special inspector will be responsible for: a. observing the construction of the Project facilities to be certain it conforms to the design drawings and specifications; b. furnishing inspection reports to the engineer- or architect-of-record and other designated persons. All discrepancies will be brought to the immediate attention of the contractor for correction, and then if uncorrected, to the engineer- or architect-of-record; and c. submitting a final signed report stating whether the work requiring special inspection was, to the best of his/her knowledge, in conformance with the approved plans and specifications and the applicable workmanship provisions.	A2-11	A2-11		See the response to comment A1-1.
In response to staff recommendation 11, AGDC will, prior to construction develop and implement an environmental complaint resolution procedure, and file such procedure with the Secretary, for the review and written approval of the Director of the OEP. The procedure will provide landowners with clear and simple directions for identifying and resolving their environmental mitigation problems/concerns during Project construction and right-of-way restoration. Prior to construction, AGDC will mail the complaint procedures to each landowner whose property will be crossed by the Project. a. In its letter to affected landowners, AGDC will: i. provide a local contact that the landowners should call first with their concerns; the letter should indicate how soon a landowner should expect a response; ii. instruct the landowners that if they are not satisfied with the response, they should call AGDC's Hotline; the letter should indicate how soon to expect a response; and iii. instruct the landowners that if they are still not satisfied with the response from AGDC's Hotline, they should contact the Commission's Landowner Helpline at 877-337-2237 or at LandownerHelp@ferc.gov. b. In addition, AGDC will include in its monthly and weekly status reports (see condition 9 above) a copy of a table that contains the following information for each problem/concern: i. the identity of the caller and date of the call; ii. the location by milepost and identification number from the authorized alignment sheet(s) of the affected property; iii. a description of the problem/concern; and iv. an explanation of how and when the problem was resolved, will be resolved, or why it has not been resolved.	A2-12	A2-12		See the response to comment A1-1.
In response to staff recommendation 12, AGDC will, before commencing construction of any Project facilities, receive written authorization from the Director of the OEP before commencing construction of any Project facilities. To obtain such authorization, AGDC will file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).	A2-13	A2-13		See the response to comment A1-1.
In response to staff recommendation 13, AGDC will, prior to introducing hazardous fluids into the Project facilities, receive written authorization from the Director of the OEP prior to introducing hazardous fluids into the Project facilities. Instrumentation and controls, hazard detection, hazard control, and security components/systems necessary for the safe introduction of such fluids will be installed and functional.	A2-14	A2-14		See the response to comment A1-1.
In response to staff recommendation 14, AGDC will, before placing the GTP and Liquefaction Facilities into service, receive written authorization from the Director of the OEP before placing the GTP and Liquefaction Facilities into service. Such	A2-15	A2-15		See the response to comment A1-1.

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AGDC Response			
authorization will only be granted following a determination that the facilities have been constructed in accordance with FERC approval and can be expected to operate safely as designed, and that the rehabilitation and restoration of areas affected by the Project are proceeding satisfactorily.	A2-16	A2-16	See the response to comment A1-1.
In response to staff recommendation 15, AGDC will, before placing the pipeline facilities and other components of the Project into service, receive written authorization from the Director of the OEP before placing the pipeline facilities and other components of the Project into service. Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way and other areas affected by the Project are proceeding satisfactorily.	A2-16		
In response to staff recommendation 16, AGDC will, within 30 days of placing the authorized facilities in service, file an affirmative statement with the Secretary, certified by a senior company official: a. that the facilities have been constructed and installed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or b. identifying which of the conditions in the Order AGDC has complied with or will comply with. This statement will also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.	A2-17	A2-17	See the response to comment A1-1.
In response to staff recommendation 17, AGDC will, prior to construction file with the Secretary, for the review and written approval of the Director of the OEP, an updated Gravel Sourcing Plan and Reclamation Measures, finalized in coordination with appropriate state and federal agencies, including the BLM, that identifies the material volumes to be acquired from each material site. This plan will include measures for testing material sites for potential acid rock drainage and presence of contaminants, such as mercury, arsenic, antimony, etc., that may not be suitable fill material for construction of granular fill pads and access roads.	A2-18	A2-18	Sections 4.1.2.3, 5.1.1, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 18, AGDC will, prior to construction of the Mainline Facilities, file with the Secretary, for the review and written approval of the Director of the OEP, a modified Pipeline Operation and Maintenance Plan that specifies the applicable Project facilities and locations, and provides details of the equipment, monitoring parameters, and frequency of data collection that it will implement to minimize potential impacts from permafrost degradation on the Mainline Facilities.	A2-19	A2-19	Sections 4.1.3.10, 5.1.1, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 19, AGDC will, prior to construction of the Mainline Facilities, file with the Secretary, for the review and written approval of the Director of the OEP, the results of all site-specific evaluations for ARD/ML and a map set depicting sampling locations along the Mainline Pipeline. Additionally, AGDC will file a copy of the Project-wide ARD/ML Management Plan for the review and written approval of the Director of the OEP. This ARD/ML Management Plan will include mitigation measures specific to blasting, trenching, and granular fill pads/roads; and include details for surface and groundwater monitoring in areas of known high ARD/ML potential.	A2-20	A2-20	See the updates to sections 4.1.3.10, 5.1.1, and 5.2 of the final EIS.
AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098).	A2-21	A2-21	See the updates to sections 4.1.3.10, 5.1.1, and 5.2 of the final EIS.
In response to staff recommendation 21, AGDC will, prior to construction of the Mainline Facilities, file with the Secretary, for the review and written approval of the Director of the OEP, final installation design and drilling plans for each DMT crossing outlining bedrock and permafrost characterization along with proposed mitigation measures, if required. Additionally, AGDC will provide the results of jacking force and stress analyses for each DMT crossing.	A2-22	A2-22	Sections 4.1.5, 5.1.1, and 5.2 of the final EIS have been updated to address this comment.
AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098).	A2-23	A2-23	See the updates to sections 4.1.5, 5.1.1, and 5.2 of the final EIS.
In response to staff recommendation 23, AGDC will, prior to construction of the Mainline Facilities, file with the Secretary, for the review and written approval of the Director of the OEP, a revised Feasibility Crossing Study that provides updated site-specific geotechnical information for the Middle Fork Koyukuk River with borings conducted at the proposed crossing location and to depths at least as deep as the proposed crossing depth.	A2-24	A2-24	Sections 4.1.5.1, 5.1.1, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 24, AGDC will, prior to construction of the Mainline Facilities, file with the Secretary, for the review and written approval of the Director of the OEP, a revised Feasibility Crossing Study for the Chulitna River that	A2-25	A2-25	Sections 4.1.5.4, 5.1.1, and 5.2 of the final EIS have been updated to address this comment.

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AGDC Response			
consistently identifies the proposed entry and exit locations of the DMT throughout the document including all figures, appendices, and drill path descriptions.	A2-25		
<p>AGDC respectfully requests modification of section 5.2 (SR 25, p. 5-51) and 4.2.4 to allow an assessment of feasibility of timber/synthetic mats based on conditions at the site. Example factors that could impact feasibility include, but are not limited to:</p> <ol style="list-style-type: none"> 1. Safe working surface – mats must be applied to level work surface such that heavy equipment can operate. This requires ground surface prep which will impact and jeopardize the surface organic layer. Otherwise matting joints and individual segments will be unstable under equipment loads. 2. Permafrost surface layer damage – matting applied in summer season compress into and damage surface layer organics and increase active layer thawing. 3. Area of work - in some cases, the area fitting FERC criteria for this condition is small and does not make a separate construction method feasible from a logistics or cost perspective. <p>Please note: a redline for this change is also included in AGDC's DEIS review comment table, along with additional supporting comments.</p>	A2-26	A2-26	See the response to comment A1-1.
<p>AGDC respectfully requests deletion of this requirement for use of fines in granular fill for the surface course on all construction workspaces. AGDC believes this is not an operationally sound recommendation and has potential for increasing environmental impacts in the form of fugitive dust and increased sediment in runoff without improving potential for revegetation. In addition, fines in granular fill for the surface course will decrease load capacities. Further, it will not improve potential for revegetation of the areas since much of the fine material would run off or blow away during construction activities. Therefore, AGDC respectfully requests FERC drop this recommendation in 4.2.4 and 5.2 Staff Recommendation 26.</p> <p>Please note: a redline for this change is also included in AGDC's DEIS review comment table, along with additional supporting comments.</p>	A2-27	A2-27	See the response to comment A1-1.
AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098).	A2-28	A2-28	See the updates to sections 4.2.4, 5.1.2, and 5.2 of the final EIS.
<p>AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098). In addition, as noted in AGDC comments on the DEIS, this Staff Recommendation appears to have been based on a mistake by AGDC when an inaccurate depiction of the time period between clearing and construction was provided to FERC as 1 to 3 years in RFI-528-FERC-068 (Accession No. 20180427-5256 (32852095)). The correct time frame is 1 to 1 1/2 years between clearing and construction as noted in RFI-465-FERC-010 (Accession No. 20180102-5180 (3260545)). Based on this additional information, AGDC requests removal of this Staff Recommendation, since it has already been addressed with AGDC's correction in RFI-465-FERC-010 (Accession No. 20180102-5180 (3260545)).</p>	A2-29	A2-29	See the updates to sections 4.2.5.2, 5.2.2, and 5.2 of the final EIS.
<p>In response to staff recommendation 29, AGDC will, prior to construction of the Mainline Facilities, file with the Secretary, for the review and written approval of the Director of the OEP, a final Revegetation Plan for use during construction and operation. This final plan will incorporate all surface layer segregation information, including milepost ranges in which surface layer segregation will be executed between MPs 0 and 607, and provide an analysis and justification of where the surface layer would and would not be segregated between MPs 607 and 807.</p>	A2-30	A2-30	Sections 4.2.5.2, 5.1.2, and 5.2 of the final EIS have been updated to address this comment.
<p>In response to staff recommendation 30, AGDC will, during construction of the Mainline Facilities, use closed-cell extruded polystyrene or other closed cell foams rather than non-extruded expanded polystyrene foam.</p>	A2-31	A2-31	Sections 4.2.5.2, 5.1.2, and 5.2 of the final EIS have been updated to address this comment.
AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098).	A2-32	A2-32	See the updates to sections 4.2.5.2, 5.1.1, and 5.2 of the final EIS.
AGDC filed this information to the FERC Docket September 25, 2019 (Accession No. 20190925-5027).	A2-33	A2-33	See the updates to sections 4.3.2, 4.3.3, 5.1.3.2, and 5.2 of the final EIS.

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AGDC Response			
AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098).	A2-34	A2-34	See the updates to sections 4.3.2.4, 5.1.3.2, and 5.2 of the final EIS.
In response to staff recommendation 34, AGDC will, prior to construction, file with the Secretary, for the review and written approval of the Director of the OEP, site-specific waterbody crossing plans and mitigation measures that address, as applicable: a. channel diversion crossings (e.g., locations of dams and diversion channels, construction procedures, justification that disturbed areas are limited to the minimum needed to construct the crossing, and identification of any aboveground disturbance or clearing) (section V.B.6.d of the Project Procedures); b. aerial span crossings (e.g., locations of abutments and piers and all areas to be disturbed or cleared for construction) (section V.B.8 of the Project Procedures); and c. navigational issues for major waterbody crossings (e.g., compliance with Coast Guard, COE, and PHMSA requirements) (section V.B.11 of the Project Procedures).	A2-35	A2-35	Sections 4.3.2.4, 5.1.3.2, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 35, AGDC will design temporary bridges to withstand at least a 10-year flood event or file with the Secretary, for the review and written approval of the Director of the OEP, site-specific justification showing that a design for a 2-year flood event is adequate. AGDC shall also repair and/or upgrade the bridges, where necessary, for the duration of Project use.	A2-36	A2-36	Sections 4.3.2.5, 5.1.3.2, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 36, AGDC will, prior to construction of the Mainline Facilities, file with the Secretary, for the review and written approval of the Director of the OEP, revised construction plans, including site-specific shoreline crossings plans, that incorporate the use of the DMT continuation methodology for the shoreline crossings at Beluga Landing and Suneva Lake, or provide a site-specific justification, supported by additional site-specific geotechnical investigations conducted during detailed engineering design, demonstrating that the methodology is not feasible.	A2-37	A2-37	Sections 4.3.3.3, 5.1.3.3, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 37, AGDC will, prior to construction, file with the Secretary, for the review and written approval of the Director of the OEP, a final Water Use Plan that provides final water volumes, source locations (including aquifers for all known groundwater wells), discharge locations, and proposed water treatments required for Project construction and operation. The plan will include water use volumes and sources for all construction camps and aboveground facility camps. The plan will also identify estimated operational water use volumes and sources. The plan will demonstrate that reuse of water (e.g., for hydrostatic testing) has been considered and applied where practicable.	A2-38	A2-38	Sections 4.3.4.3, 5.1.3.4, and 5.2 of the final EIS have been updated to address this comment.
Please Note: AGDC respectfully requests the qualifier 'known' be added to the requirement for identifying all groundwater wells, as added above.			
In response to staff recommendation 38, AGDC will file with the Secretary, final wetland delineation reports on an annual basis during active construction that document the results of all field delineations completed during the previous growing season. The reports will identify the type, location, and acreage for each wetland and provide impact summaries, indicating if permanent fill (including granular fill and cut fill material) was placed in the wetland and if the final elevation was contoured to match the pre-construction elevation.	A2-39	A2-39	See the updates to sections 4.4.1.2, 5.1.4, and 5.2 of the final EIS.
AGDC respectfully requests modification of section 5.2 (SR 39, p. 5-53) and 4.4.1.2 to allow for use of electronic delineation methods when feasible, as noted in AGDC's DEIS review comment table. In addition, AGDC commits to implement the measures in staff recommendation 39. During the growing season immediately prior to planned winter construction segments of the Mainline Pipeline, AGDC shall delineate wetland areas. The delineated boundaries shall be identified with markers in the field, or electronically where feasible, and on revised construction alignment sheets that shall be filed with the Secretary prior to construction through these areas. The results of these field surveys shall be included in the final wetland delineation reports filed with the Secretary. (section 4.4.1.2)	A2-40	A2-40	See the updates to sections 4.4.1.2, 5.1.4, and 5.2 of the final EIS and the response to comment A1-193.
Please note: a redline for this change is also included in AGDC's DEIS review comment table, along with additional supporting comments.			
AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098). AGDC has reviewed the mode designations presented in Appendix K-2 of the DEIS and confirms it is correct and consistent with the Project Winter and Permafrost Construction Plan.	A2-41	A2-41	Comment noted. See the updates to section 4.4.2, 5.1.4, and 5.2 of the final EIS

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AGDC Response			
In response to staff recommendation 41, AGDC will, once the interim performance standards from the Project Revegetation Plan have been met, conduct canopy cover surveys at RMES in all construction workspaces every 3 years until the final performance standards are met. Following each monitoring season, AGDC will file with the Secretary the corresponding survey reports.	A2-42	A2-42	Sections 4.5.2.3, 5.1.5, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 42, AGDC will, prior to construction, file with the Secretary, for the review and written approval of the Director of the OEP, an updated Revegetation Plan that includes: a. an updated interim performance standard that includes at least 5-percent live-canopy cover of native non-seeded plant species in all subregions of the Project; and b. updated seed mixes that exclude red fescue except for reseeding steep slopes or other areas with a high erosion risk when there are no other effective species available to help stabilize soils.	A2-43	A2-43	Sections 4.5.2.3, 5.1.5, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 43, AGDC will, prior to construction, file with the Secretary, for the review and written approval of the Director of the OEP, an updated Revegetation Plan, Invasives Plan, and ISPMP incorporating, as part of the final performance standards for both construction and operational activities, a 0-percent increase in high-risk NNIS canopy cover in the Project area.	A2-44	A2-44	Sections 4.5.8.3, 5.1.5, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 44, AGDC will, once the interim performance standards from the Project Revegetation Plan have been met, conduct annual canopy cover surveys at RMES in all construction and operational workspaces with NNIS infestations until the final performance standards are met. Following each monitoring season, AGDC will file with the Secretary the corresponding survey reports.	A2-45	A2-45	Sections 4.5.8.3, 5.1.5, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 45, AGDC will, prior to construction, file with the Secretary, for the review and written approval of the Director of the OEP, an updated Invasives Plan that includes a measure to clean construction equipment prior to entering and leaving Alexander Creek.	A2-46	A2-46	Sections 4.5.8.3, 5.1.5, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 46, AGDC will, prior to construction, file the following documents with the Secretary, for the review and written approval of the Director of the OEP, and provide them to the appropriate land use agencies: a. the results of pre-construction NNIS surveys, including species-specific maps of NNIS locations and up-to-date invasiveness rankings for each NNIS found in the Project area; and b. an updated Revegetation Plan, Invasives Plan, and ISPMP that include a measure to reseed areas with NNIS infestations within the first growing season following ground-disturbing activities.	A2-47	A2-47	Sections 4.5.8.3, 5.1.5, and 5.2 of the final EIS have been updated to address this comment.
AGDC respectfully requests deleting the requirement for seasonal caribou monitoring. Science from years of caribou work on the North Slope in and around oil and gas facilities does not support an expectation for impacts, as noted in extensive AGDC DEIS comments and supporting literature sources. Further, the area has numerous oil and gas facilities, roads, mine sites, and activity that would make it impracticable to parse out impacts of the GTP separate from the existing facilities relative to caribou movements. See extensive comments on this issue in AGDC's DEIS review comment table.	A2-48	A2-48	See the updates to section 4.6.1.3 of the final EIS.
In response to staff recommendation 48, AGDC will, prior to vegetative mowing or clearing during the migratory bird nesting season, file with the Secretary, for the review and written approval of the Director of the OEP, documentation necessary to satisfy the requirements of Section VII.A.5 of FERC's Plan.	A2-49	A2-49	Section 4.6.2.3, 5.1.6.2, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 49, AGDC will, during construction and operation within the boundaries of the IBAs, conduct vegetation clearing or initial granular fill placement outside of the nesting seasons, as listed in table 4.6.2-3 of the EIS.	A2-50	A2-50	Sections 4.6.2.5, 5.1.6.2, and 5.2 of the final EIS have been updated to address this comment.
AGDC respectfully requests modification of section 5.2 (SR 50, p. 5-54) and 4.6.3.2 to refer to and be consistent with NMFS and USFWS requirements. Consider modifying the recommendation to: 50. Prior to construction, AGDC shall file with the Secretary, for the review and written approval of the Director of the OEP, revised shutdown distances for all underwater noise generating activities (i.e., pile driving [impact, vibratory, and all pile types], dredging, screeding, anchor handling, Mainline Pipeline shoreline installation, and Marine Terminal MOF removal). For the revised shutdown distances, AGDC will use shutdown distances as dictated in NMFS and USFWS marine mammal rules, permits, and approvals. Please note: a redline for this change is also included in AGDC's DEIS review comment table, along with additional supporting comments.	A2-51	A2-51	See the response to comment A1-1.

A2 – Alaska Gasline Development Corporation (cont'd)

AGDC Response			
<p>AGDC respectfully requests modification of section 5.2 (SR 51, p. 5-55) and 4.6.3.2 to refer to and be consistent with NMFS and USFWS requirements. Consider modifying the recommendation to:</p> <p>51. Prior to construction, AGDC shall file with the Secretary, for the review and written approval of the Director of the OEP, a revised PSO deployment plan consistent with NMFS and USFWS marine mammal Incidental Take Regulations (ITRs), permits and approvals.</p> <p>Please note: a redline for this change is also included in AGDC's DEIS review comment table, along with additional supporting comments.</p>	A2-52	A2-52	See the response to comment A1-1.
<p>In response to staff recommendation 52, AGDC will, prior to construction, complete fish surveys at waterbodies where fish survey data are not available within 290 feet of the current pipeline crossing location and file with the Secretary final reports documenting AWC streams, EFH, and waterbodies with Pacific salmon identified during the fish surveys. AGDC will implement the appropriate minimization measures from the Project Procedures, Fisheries Conservation Plan, and other regulatory requirements at these waterbodies.</p>	A2-53	A2-53	Sections 4.7.1, 5.1.7.1, and 5.2 of the final EIS have been updated to address this comment.
<p>In response to staff recommendation 53, AGDC will, prior to construction, develop a Fisheries Conservation Plan, filed with the Secretary for the review and written approval of the Director of the OEP, that includes a Culvert Design and Maintenance Plan and follows the guidance in Anadromous Salmonid Passage Facility Design (NMFS, 2011a) for all fish bearing streams. The Maintenance Plan component will indicate the frequency of inspections for permanent culverts.</p>	A2-54	A2-54	Sections 4.7.1.6, 5.1.7.1, and 5.2 of the final EIS have been updated to address this comment.
<p>In response to staff recommendation 54, AGDC will, prior to construction, include the following measures in its Fisheries Conservation Plan (required by the previous condition 53):</p> <ul style="list-style-type: none"> a. withdraw no more than 20 percent of current flow rates in waterbodies listed as AWC, including EFH, or with known populations of Chinook, sockeye, coho, pink, and/or chum salmon, to reduce the risk of low water levels and downstream impacts; b. do not exceed 0.5-foot-per-second water withdrawal velocities at the operating pump intake in waterbodies listed as AWC, including EFH, or with known populations of Chinook, sockeye, coho, pink, and/or chum salmon, if water withdrawals would occur when sensitive fish fry and/or juveniles would be in-stream; c. raise water withdrawal pump intakes from the stream bed to avoid the entrainment of eggs or fry from the gravel bed; d. use screen openings on all water withdrawal equipment of 0.25 inch (0.1 inch or less in areas with sensitive life stages, e.g., pink and chum salmon fry, whitefish fry, and arctic grayling fry) to reduce the risk of impingement of small or juvenile fish; e. avoid in-stream construction in the winter (i.e., when frozen conditions limit streamflow) in waterbodies with known overwintering habitat (as listed in appendix 1 of the EIS); and f. conduct in-stream construction in the timeframes provided by the ADF&G, as listed in appendix N-2 of the EIS, in waterbodies listed as AWC, including EFH, or with known populations of Chinook, sockeye, coho, pink, and/or chum salmon. 	A2-55	A2-55	Sections 4.7.1.6, 4.7.1.7, 5.1.7.1, and 5.2 of the final EIS have been updated to address this comment.
<p>In response to staff recommendation 55, AGDC will, after completing in-stream construction activities at the Unnamed Tributary of the Chulitna River, remove granular fill from the adjacent wetland near MP 655.2. Note that AGDC is suggesting removal of the term 'all', since literally interpreted it could mean even a piece of gravel accidentally left behind would violate this requirement.</p>	A2-56	A2-56	Sections 4.7.1.7, 5.1.7.1, and 5.2 of the final EIS have been updated to address this comment.
<p>In response to staff recommendation 56, AGDC will, prior to construction, develop measures to minimize impacts on fish in or near material extraction sites and include the measures in its Fisheries Conservation Plan (required by the previous condition 53). Specifically AGDC will:</p> <ul style="list-style-type: none"> a. avoid extraction in material sites within or near waterbodies listed as AWC, including EFH, during sensitive spawning time periods, as determined in consultation with the ADF&G; and b. develop measures in consultation with the USFWS and ADF&G to minimize long-term impacts from material sites south of the Brooks Range that are hydrologically connected to streams listed as AWC, including EFH, or that have known populations of Chinook, sockeye, coho, pink, and/or chum salmon. 	A2-57	A2-57	Sections 4.7.1.7, 5.1.7.1, and 5.2 of the final EIS have been updated to address this comment.

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A2 – Alaska Gasline Development Corporation (cont'd)

AGDC Response			
In response to staff recommendation 57, AGDC will, prior to construction, file with the Secretary, for the review and written approval of the Director of the OEP, an updated Project Blasting Plan with the following requirements for all fish-bearing streams where blasting would occur: a. monitoring protocol of stream flow after blasting and prior to completion of in-stream activities; b. implementing contingency measures to remediate loss of stream flow caused by fracturing the rock or permafrost from blasting; and c. indicating the timeframe for response and implementation of contingency measures.	A2-58	A2-58	Sections 4.7.1.7, 5.1.7.1, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 58, AGDC will not begin construction until: a. the FERC staff completes formal ESA consultation with the USFWS and NMFS; and b. AGDC has received written notification from the Director of the OEP that construction or use of mitigation may begin.	A2-59	A2-59	Comment noted.
AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098).	A2-60	A2-60	Sections 4.8.1.1, 5.1.8, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 60, AGDC will, prior to construction, file with the Secretary its commitment to restrict pile driving activities for construction of the Mainline MOF during the months of June and July, to minimize noise impacts on the Cook Inlet beluga whale population.	A2-61	A2-61	Sections 4.8.1.3, 5.1.8, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 61, AGDC will, prior to construction within Byers Lake Campground (MP 630.1) and the river tour operator site (MP 560.0), file with the Secretary, for the review and written approval of the Director of the OEP, and provide to the ADNDR Division of Parks and Outdoor Recreation and the affected river tour operator, as appropriate, a detailed schedule of construction activities within Byers Lake Campground and the river tour operator site.	A2-62	A2-62	Sections 4.9.1.2, 5.1.9, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 62, AGDC will, prior to construction across the INHT, file with the Secretary, for the review and written approval of the Director of the OEP, a revised site-specific crossing plan for the INHT—developed in consultation with the ADNDR, BLM, USFWS, U.S. Forest Service, and the Iditarod Historic Trail Alliance—that identifies the locations of detours, signs, or alternate access to the trail, and provides for public notice of construction dates and any required trail closures.	A2-63	A2-63	Sections 4.9.4.1, 5.1.9, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 63, AGDC will, prior to construction file with the Secretary, for the review and written approval of the Director of the OEP, a site-specific crossing plan for the Lower Troublesome Creek Trail, including the locations of the temporary bridge or trail reroute.	A2-64	A2-64	Sections 4.9.4.2, 5.1.9, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 64, AGDC will, prior to construction file with the Secretary, for the review and written approval of the Director of the OEP, an updated Project Unanticipated Contamination Discovery Plan that addresses operation and maintenance activities and includes phone numbers for applicable emergency responders (e.g., Alaska state troopers, BLM fire dispatch) and a FERC notification requirement for any discovery or release of contamination outside the permitted Project area resulting from Project activities. The notification requirement will include copies of the associated regulatory agency correspondence regarding the off-site contamination.	A2-65	A2-65	Sections 4.9.6.3, 5.1.9, and 5.2 of the final EIS have been updated to include this commitment.
AGDC filed this information to the FERC Docket September 25, 2019 (Accession No. 20190925-5027).	A2-66	A2-66	See the updates to section 4.10.1.2, 5.1.10, and 5.2 of the final EIS.

A2 – Alaska Gasline Development Corporation (cont'd)

AGDC Response			
In response to staff recommendation 66, AGDC will, prior to construction of the Healy Compressor Station, file with the Secretary, for the review and written approval of the Director of the OEP, a site-specific lighting plan for the station that conforms to International Dark-Sky Association Guidelines, including having a color temperature of 3,000 Kelvins or less; or provide site-specific justification for why the facility cannot conform to these lighting guidelines.	A2-67	A2-67	Sections 4.10.2.2, 5.1.10, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 67, AGDC will not begin implementation of any treatment plans/measures (including archaeological data recovery); facility construction; or use of staging, storage, or temporary work areas, ancillary facilities, and new or to-be-improved access roads until: a. AGDC completes outstanding archaeological and architectural surveys and any special studies, and files with the Secretary all remaining cultural resources survey, evaluation, and special studies reports, and the Alaska SHPO's and the applicable land management agency comments on the reports; b. AGDC files any necessary avoidance or treatment plans that outline measures to avoid, reduce, and/or mitigate effects on historic properties, and the Alaska SHPO's and the applicable land management agency comments on the plans; c. the ACHP is provided an opportunity to comment on the undertaking if historic properties would be adversely affected; and d. FERC staff reviews, and the Director of the OEP approves, in writing, all cultural resources survey reports and plans, and FERC staff notifies AGDC in writing that treatment plans/mitigation measures may be implemented or that construction may proceed. All material filed with the Commission containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "CUJ/PRIV – DO NOT RELEASE."	A2-68	A2-68	Comment noted.
In response to staff recommendation 68, AGDC will, prior to construction, file with the Secretary, for the review and written approval of the Director of the OEP, the Project Local Subsistence Implementation Plan and a signed Conflict Avoidance Agreement prepared in coordination with NMFS and the AEWG.	A2-69	A2-69	Section 4.14.2.6, 5.1.14, and 5.2 of the final EIS have been updated to address this comment.
AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098).	A2-70	A2-70	See the updates to sections 4.15.4.1, 5.1.15, and 5.2 of the final EIS.
AGDC filed this information to the FERC Docket September 25, 2019 (Accession No. 20190925-5027).	A2-71	A2-71	See the updates to sections 4.15.5.1, 5.1.15, and 5.2 of the final EIS.
AGDC filed this information to the FERC Docket September 25, 2019 (Accession No. 20190925-5027).	A2-72	A2-72	See the updates to sections 4.15.5.3, 5.1.15, and 5.2 of the final EIS.
AGDC respectfully notes that the FLAG initial project screening levels do not represent a pass/fail test for adverse impacts, and suggests instead the impacts need to be evaluated on a case-by-case basis. In comments on the air quality portions of the DEIS, AGDC provides additional explanation of the AQRV impacts and supports a determination that the currently estimated impacts are not adverse. For these reasons, AGDC respectfully requests that FERC remove the Class I and Sensitive Class II Mitigation Plan requirement from sections 4.15.5.3 and section 5.2, staff recommendation 72, and update the impacts assessment discussion in the DEIS as provided in AGDC's comments.	A2-73	A2-73	See the responses to comments SA2-7, CO29-5, and A1-1.
Please note: supporting documentation and redlines for this change are included in AGDC's DEIS review comment table. AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098).	A2-74	A2-74	See the updates to sections 4.16.3.2, 5.1.16, and 5.2 of the final EIS.

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A2 – Alaska Gasline Development Corporation (cont'd)

AGDC Response			
In response to staff recommendation 74, AGDC will, prior to construction of the Liquefaction Facilities, file with the Secretary, for the review and written approval of the Director of the OEP, a detailed construction noise mitigation plan for the Liquefaction Facilities that includes the noise mitigation measures that AGDC will implement at the construction site. The noise mitigation plan will also include the predicted noise attributable to construction activities at the nearby NSA after implementing the additional mitigation showing at least a 10-dB reduction of noise levels at the NSA, a noise monitoring plan during construction, and a procedure for resolving noise complaints.	A2-75	A2-75	See the updates to sections 4.16.3.3, 5.1.16, and 5.2 of the final EIS.
In response to staff recommendation 75, AGDC will file with the Secretary a noise survey no later than 60 days after placing the Coldfoot and Healy Compressor Stations in service. If a full load condition noise survey is not possible, AGDC will file an interim survey at the maximum possible horsepower load within 60 days of placing the stations into service and file the full load survey within 6 months. If the noise attributable to operation of all equipment at the Coldfoot and Healy Compressor Stations under interim or full horsepower load conditions exceeds an Ldn of 55 dBA at any nearby NSAs, AGDC will file a report on what changes are needed and shall install the additional noise controls to meet the level within 1 year of the in-service date. AGDC will confirm compliance with the above requirement by filing an additional noise survey with the Secretary no later than 60 days after the additional noise controls are installed.	A2-76	A2-76	See the updates to sections 4.16.4.2, 5.1.16, and 5.2 of the final EIS.
In response to staff recommendation 76, AGDC will file with the Secretary a full power load noise survey for the Liquefaction Facilities no later than 60 days after each liquefaction train is placed into service. If the noise attributable to operation of the equipment at the Liquefaction Facilities exceeds an Ldn of 55 dBA at the nearest NSA, within 60 days, AGDC will modify operation of the Liquefaction Facilities or install additional noise controls until a noise level below an Ldn of 55 dBA at the NSA is achieved. AGDC will confirm compliance with the above requirement by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.	A2-77	A2-77	See the updates to sections 4.16.4.3, 5.1.16, and 5.2 of the final EIS.
In response to staff recommendation 77, AGDC will file with the Secretary a noise survey no later than 60 days after placing the entire Liquefaction Facilities into service. If a full load condition noise survey is not possible, AGDC will file an interim survey at the maximum possible horsepower load within 60 days of placing the Liquefaction Facilities into service and file the full load survey within 6 months. If the noise attributable to operation of the equipment at the Liquefaction Facilities exceeds an Ldn of 55 dBA at the nearest NSA under interim or full horsepower load conditions, AGDC will file a report on what changes are needed and shall install the additional noise controls to meet the level within 1 year of the in-service date. AGDC will confirm compliance with the above requirement by filing an additional noise survey with the Secretary no later than 60 days after it installs the additional noise controls.	A2-78	A2-78	See the updates to sections 4.16.4.3, 5.1.16, and 5.2 of the final EIS.
In response to staff recommendation 78, AGDC will, prior to commencing operation of the flares associated with the Liquefaction Facilities, develop a Flare Noise Mitigation Plan, to be filed with the Secretary, for the review and written approval of the Director of the OEP, detailing its plans to mitigate noise impacts associated with flare events to the extent practicable, including measures that AGDC will implement to minimize the frequency of flare events and the procedure for contacting and scheduling flare events with local community representatives.	A2-79	A2-79	See the updates to sections 4.16.4.3, 5.1.16, and 5.2 of the final EIS.
AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098).	A2-80	A2-80	Sections 4.18.5.3, 4.18.9, and 5.2 of the final EIS have been updated to address this comment.
AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098).	A2-81	A2-81	Sections 4.18.5.3, 4.18.9, and 5.2 of the final EIS have been updated to address this comment.

CC-1099

A2 – Alaska Gasline Development Corporation (cont’d)

CC-1100

AGDC Response			
AGDC filed this information to the FERC Docket September 25, 2019 (Accession No. 20190925-5027).	A2-82	A2-82	Sections 4.18.5.5, 4.18.9, and 5.2 of the final EIS have been updated to address this comment.
AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098).	A2-83	A2-83	Sections 4.18.5.5, 4.18.9, and 5.2 of the final EIS have been updated to address this comment.
AGDC will file this information to the FERC Docket by October 3, 2019.	A2-84	A2-84	Sections 4.18.5.5, 4.18.9, and 5.2 of the final EIS have been updated to address this comment.
AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098).	A2-85	A2-85	Sections 4.18.5.5, 4.18.9, and 5.2 of the final EIS have been updated to address this comment.
AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098).	A2-86	A2-86	Sections 4.18.5.5, 4.18.9, and 5.2 of the final EIS have been updated to address this comment.
AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098).	A2-87	A2-87	Sections 4.18.5.5, 4.18.9, and 5.2 of the final EIS have been updated to address this comment.
AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098).	A2-88	A2-88	Sections 4.18.5.5, 4.18.9, and 5.2 of the final EIS have been updated to address this comment.

A2 – Alaska Gasline Development Corporation (cont'd)

AGDC Response			
AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098).	A2-89	A2-89	Sections 4.18.5.5, 4.18.9, and 5.2 of the final EIS have been updated to address this comment.
AGDC filed this information to the FERC Docket September 25, 2019 (Accession No. 20190925-5027).	A2-90	A2-90	Sections 4.18.6.1, 4.18.9 and 5.2 of the final EIS have been updated to address this comment.
AGDC filed this information to the FERC Docket September 25, 2019 (Accession No. 20190925-5027).	A2-91	A2-91	Sections 4.18.6.2, 4.18.9 and 5.2 of the final EIS have been updated to address this comment.
AGDC filed this information to the FERC Docket September 25, 2019 (Accession No. 20190925-5027).	A2-92	A2-92	Sections 4.18.7, 4.18.9, and 5.2 of the final EIS have been updated to address this comment.
AGDC filed this information to the FERC Docket September 18, 2019 (Accession No. 20190918-5098).	A2-93	A2-93	Sections 4.18.7, 4.18.9, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 93, AGDC will, prior to initial site reparation, file with the Secretary documentation demonstrating it has received a determination of no hazard (with or without conditions) by the FAA for all temporary construction equipment that exceed the height requirements in 14 CFR 77.9.	A2-94	A2-94	Sections 4.18.7, 4.18.9, and 5.2 of the final EIS have been updated to address this comment.
In response to staff recommendation 94, AGDC will, prior to construction of final design, file with the Secretary the following information, stamped and sealed by the professional engineer-of-record registered in Alaska: a. site preparation drawings and specifications for the Liquefaction Facilities and GTP; b. a list of the foundation systems to be used for each structure; c. all Liquefaction Facilities and GTP structures and foundation design drawings as well as associated calculations, including prefabricated and field constructed structures; d. seismic specifications for procured equipment for the Liquefaction Facilities and GTP; and e. quality control procedures to be used for civil/structural design and construction. In addition, AGDC will file, in its Implementation Plan, the schedule for producing this information.	A2-95	A2-95	See the response to comment A1-1.
In response to staff recommendation 95, AGDC will, prior to construction of final design, file with the Secretary a monitoring and maintenance plan, stamped and sealed by the professional engineer-of-record registered in Alaska, that ensures the grade of	A2-96	A2-96	See the response to comment A1-1.

A2 – Alaska Gasline Development Corporation (cont'd)

AGDC Response			
the GTP site would be maintained to prevent flooding throughout the life of the facility considering settlement, subsidence, thermocycling, and sea level rise.			
In response to staff recommendation 96, AGDC will, prior to construction of final design, file with the Secretary the following information, stamped and sealed by the professional engineer-of-record registered in Alaska, related to the LNG storage tank and foundation detailed design documents, including but not limited to: a. LNG storage tank base concrete slabs calculations and drawings; b. LNG storage tank seismic isolator concrete pedestal calculations and drawings; and c. LNG storage tank foundation concrete slabs calculations and drawings. AGDC will request written authorization from the Director of the OEP before proceeding with construction of final design and until the Director of the OEP, or designee, provides a notice to proceed.	A2-97	A2-97	See the response to comment A1-1.
In response to staff recommendation 97, AGDC will, prior to construction of final design, file with the Secretary documentation that confirms the various tidal levels at the dock do not exceed transfer arm safe operating envelopes.	A2-98	A2-98	See the response to comment A1-1.
In response to staff recommendation 98, AGDC will, prior to initial site preparation, file an overall Project schedule, which includes the proposed stages of the commissioning plan.	A2-99	A2-99	See the response to comment A1-1.
In response to staff recommendation 99, AGDC will, prior to initial site preparation, file quality assurance and quality control procedures for construction activities.	A2-100	A2-100	See the response to comment A1-1.
In response to staff recommendation 100, AGDC will, prior to initial site preparation, file quality assurance and quality control procedures for construction activities.	A2-101	A2-101	See the response to comment A1-1.
In response to staff recommendation 101, AGDC will, prior to initial site preparation, file a site-specific geotechnical investigation to ensure proper foundation design of the GTP. The geotechnical investigation will include a location plan that demonstrates the soil conditions are suitable or could be made suitable for all major foundations and evaluate local geological conditions under the proposed foundations, including the susceptibility to frost heave, thermokarsting, load-bearing settlement, and concrete material degradation that are projected to occur over the life of the facilities. In addition, the geotechnical investigation will demonstrate that the local conditions and those contained in the ASAP report supporting the foundation recommendations are sufficiently analogous.	A2-102	A2-102	See the response to comment A1-1.
In response to staff recommendation 102, AGDC will, prior to construction of final design, file a site-specific analysis for coastal erosion and propose a prevention and mitigation plan prior to commencement of construction.	A2-103	A2-103	See the response to comment A1-1.
In response to staff recommendation 103, AGDC will, prior to initial site preparation, file a response plan for a significant snow event, or provide calculations that prove the current support structures and equipment would be able to support snow loads.	A2-104	A2-104	See the response to comment A1-1.
In response to staff recommendation 104, AGDC will, prior to initial site preparation, file the updated freeboard height and sloshing wave height design calculation to comply with code requirements, including but not limited to ASCE 7-05, API 620, API 625, API 650, API 650, ACI 350 and ACI 376.	A2-105	A2-105	See the response to comment A1-1.
In response to staff recommendation 105, AGDC will, prior to initial site preparation, file the updated reserve capacity test report to determine the vertical load, shear load, and uplift displacement capacities of the triple pendulum seismic isolator type bearing. The test report will include an analysis for maximum and minimum design liquid levels of the LNG tanks, and the displacement during the empty tank condition. In addition, a separate analysis for variations of design stiffness, minimum values of friction and other properties as required by section 17.2 and 17.5 of ASCE 7-05 will be performed.	A2-106	A2-106	See the response to comment A1-1.
In response to staff recommendation 106, AGDC will, prior to initial site preparation, file its design wind speed criteria for all GTP facilities to be designed to withstand wind speeds commensurate with the risk and reliability in accordance with ASCE 7-16 or equivalent.	A2-107	A2-107	See the response to comment A1-1.
In response to staff recommendation 107, AGDC will, prior to initial site preparation, file calculations demonstrating the loads on buried pipelines and utilities at temporary crossings would be adequately distributed. The analysis will be based on API RP 1102 or other approved methodology.	A2-108	A2-108	See the response to comment A1-1.
In response to staff recommendation 108, AGDC will, prior to initial site preparation, develop an ERP (including evacuation) and coordinate procedures with the Coast Guard; state, county, and local emergency planning groups; fire departments; state and local law enforcement; and appropriate federal agencies. This plan will include at a minimum: a. designated contacts with state and local emergency response agencies; b. scalable procedures for the prompt notification of appropriate local officials and emergency response agencies based on the level and severity of potential incidents;	A2-109	A2-109	See the response to comment A1-1.

A2 – Alaska Gasline Development Corporation (cont’d)

AGDC Response			
c. procedures for notifying residents and recreational users within areas of potential hazard; d. evacuation routes/methods for residents and public use areas that are within any transient hazard areas along the route of the LNG marine transit; e. locations of permanent sirens and other warning devices; and f. an “emergency coordinator” on each LNG marine vessel to activate sirens and other warning devices. AGDC will notify FERC staff of all planning meetings in advance and will report progress on the development of its ERP at 3-month intervals.			
AGDC respectfully requests modification of Recommended Mitigation No. 109 to indicate that the condition could be satisfied with overall PILT payments, and to note that the quarterly reporting requirement would begin following the project Final Investment Decision (FID), as follows: 109. Prior to initial site preparation, AGDC shall file a Cost-Sharing Plan identifying the mechanisms for funding all Project-specific security/emergency management costs that would be imposed on state and local agencies. This comprehensive plan shall include funding mechanisms for the capital costs associated with any necessary security/emergency management equipment and personnel base. This condition can be satisfied with overall PILT payments. AGDC shall notify FERC staff of all planning meetings in advance and shall report progress on the development of its Cost Sharing Plan at 3-month intervals following Final Investment Decision. (section 4.18.9)	A2-110	A2-110	See the response to comment A1-1.
Please note: supporting documentation and redlines for this change are included in AGDC’s DEIS review comment table. In response to staff recommendation 110, AGDC will, prior to initial site preparation, file with the secretary an ERP that details processes and procedures that would be in place to ensure the plant would be placed in a safe shut down prior to an evacuation of staff from the central control building.	A2-111	A2-111	See the response to comment A1-1.
In response to staff recommendation 111, AGDC will, prior to construction of final design, file lighting drawings. The lighting drawings will show the location, elevation, type of light fixture, and lux levels of the lighting system and will illustrate adequate coverage, in accordance with federal regulations (e.g., 49 CFR 193, 33 CFR 127, 33 CFR 105, 29 CFR 1910, 29 CFR 1915, and 29 CFR 1926) and API 540 or equivalent, of the perimeter of the facility and along paths/roads of access and egress.	A2-112	A2-112	See the response to comment A1-1.
In response to staff recommendation 112, AGDC will, prior to construction of final design, file security camera and intrusion detection drawings. The security camera drawings will show the locations, areas covered, and features of each camera (e.g., fixed, tilt/pan/zoom, motion detection alerts, low light, and mounting height) to verify coverage of the entire perimeter with redundancies and cameras interior to the facility to enable rapid and reliable monitoring of the facility. The intrusion detection drawings will show or note the location of the intrusion detection to verify coverage of the entire perimeter of the facility.	A2-113	A2-113	See the response to comment A1-1.
In response to staff recommendation 113, AGDC will, prior to construction of final design, file drawings of the security fence at the Liquefaction Facilities. The fencing drawings will provide details of fencing (e.g., dimensions and gauge of fence meshes, posts, and barbed or razor wire) that demonstrates it would restrict and deter access around the entire facility and has a 10-foot clearance from exterior features (e.g., power lines and trees) and from interior features (e.g., piping, equipment, and buildings).	A2-114	A2-114	See the response to comment A1-1.
In response to staff recommendation 114, AGDC will, prior to construction of final design, file specifications, drawings, and details of crash rated vehicle barriers at each facility entrance for access control that can mitigate accidental and intentional vehicle impacts.	A2-115	A2-115	See the response to comment A1-1.
In response to staff recommendation 115, AGDC will, prior to construction of final design, file change logs that list and explain any changes made from the front end engineering design provided in AGDC’s application and filings. A list of all changes with an explanation for the design alteration will be provided and all changes will be clearly indicated on all diagrams and drawings.	A2-116	A2-116	See the response to comment A1-1.
In response to staff recommendation 116, AGDC will, prior to construction of final design, file information/revisions pertaining to its responses to numbers 55, 58, 70, 71, 73, and 75 of FERC’s July 5, 2017 information request, responses to numbers 8, 14, 16, 19, and 21 of the December 26, 2018 information request, responses to number 2 and 5 of the December 26, 2018 (non-public enclosure), and responses to numbers 3, 17, 18, 21, 22, and 23 of the January 15, 2019 information request, which indicated features to be included or considered in the final design of the GTP.	A2-117	A2-117	See the response to comment A1-1.
In response to staff recommendation 117, AGDC will, prior to construction of final design, file information/revisions pertaining to its responses to numbers 2, 3, 5, 7, 8, 11, 24, 28, 29, 31, 34, 38, 46, 47, and 51 of FERC’s July 5, 2017 information request, responses to numbers 32, 34, 35, 37, 41, 42, 46, 54-61, 66, 69-72, 74, and 75 of the December 26, 2018 information request,	A2-118	A2-118	See the response to comment A1-1.

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A2 – Alaska Gasline Development Corporation (cont'd)

AGDC Response				
responses to numbers 8, 9, 10, and 13-15 of the December 26, 2018 information request (non-public enclosure), and responses to numbers 60, 66, 70-73, 75-81, and 83 of the January 15, 2019 information request, which indicated features to be included or considered in the final design of the liquefaction facilities.				
In response to staff recommendation 118, AGDC will, prior to construction of final design, file a plot plan of the final design showing all major equipment, structures, buildings, and impoundment systems.	A2-119	A2-119	See the response to comment A1-1.	
In response to staff recommendation 119, AGDC will, prior to construction of final design, file three-dimensional plant drawings to confirm plant layout for maintenance, access, egress, and congestion.	A2-120	A2-120	See the response to comment A1-1.	
In response to staff recommendation 120, AGDC will, prior to construction of final design, file an up-to-date equipment list, process and mechanical data sheets, and specifications. The specifications will include: a. building specifications (e.g., control buildings, electrical buildings, compressor buildings, storage buildings, pressurized buildings, ventilated buildings, and blast resistant buildings); b. mechanical specifications (e.g., piping, valve, insulation, rotating equipment, heat exchanger, storage tank and vessel, and other specialized equipment); c. electrical and instrumentation specifications (e.g., power system, control system, safety instrument system [SIS], cable, and other electrical and instrumentation); and d. security and fire safety specifications (e.g., security, passive protection, hazard detection, hazard control, and firewater).	A2-121	A2-121	See the response to comment A1-1.	
In response to staff recommendation 121, AGDC will, prior to construction of final design, file a summary of applicable codes and standards and the final specification document number(s) where they are referenced.	A2-122	A2-122	See the response to comment A1-1.	
Please Note: AGDC respectfully requests replacing 'all' with 'applicable' as noted above, to clarify the expectation.				
In response to staff recommendation 122, AGDC will, prior to construction of final design, file a complete LNG storage tank specification and design drawings. The specification will define the battery limits (i.e., engineering design, structural design, supports, piping components, piping connections, electrical power, control, and utilities) of the LNG storage tank.	A2-123	A2-123	See the response to comment A1-1.	
In response to staff recommendation 123, AGDC will, prior to construction of final design, file drawings of the storage tank piping support structure and support of horizontal piping at grade including pump columns, relief valves, pipe penetrations, instrumentation, and appurtenances.	A2-124	A2-124	See the response to comment A1-1.	
In response to staff recommendation 124, AGDC will, prior to construction of final design, file up-to-date process flow diagrams and P&IDs, including vendor P&IDs. The process flow diagrams will include heat and material balances. The P&IDs will include the following information: a. equipment tag number, name, size, duty, capacity, and design conditions; b. equipment insulation type and thickness; c. storage tank pipe penetration size and nozzle schedule; d. valve high pressure side and internal and external vent locations; e. piping with line number, piping class specification, size, and insulation type and thickness; f. piping specification breaks and insulation limits; g. all control and manual valves numbered; h. relief valves with size and set points; and i. drawing revision number and date.	A2-125	A2-125	See the response to comment A1-1.	
In response to staff recommendation 125, AGDC will, prior to construction of final design, file P&IDs, specifications, and procedures that clearly show and specify the tie-in details required to safely connect subsequently constructed facilities with the operational facilities.	A2-126	A2-126	See the response to comment A1-1.	
In response to staff recommendation 126, AGDC will, prior to construction of final design, file a car seal philosophy and a list of all car-sealed and locked valves consistent with the P&IDs.	A2-127	A2-127	See the response to comment A1-1.	
In response to staff recommendation 127, AGDC will, prior to construction of final design, file the safe operating limits (upper and lower), alarm and shutdown set points for all instrumentation (i.e., temperature, pressures, flows, and compositions).	A2-128	A2-128	See the response to comment A1-1.	
In response to staff recommendation 128, AGDC will, prior to construction of final design, include a check valve or other means in the sour gas inlet piping to the Acid Gas Removal Unit (AGRU) absorber to prevent backflow into the inlet piping.	A2-129	A2-129	See the response to comment A1-1.	

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A2 – Alaska Gasline Development Corporation (cont'd)

AGDC Response			
In response to staff recommendation 129, AGDC will, prior to construction of final design, include LNG storage tank fill flow measurement with high flow alarm.	A2-130	A2-130	See the response to comment A1-1.
In response to staff recommendation 130, AGDC will, prior to construction of final design, include BOG flow measurement from each LNG storage tank.	A2-131	A2-131	See the response to comment A1-1.
In response to staff recommendation 131, AGDC will, prior to construction of final design, evaluate and demonstrate the design pressure of the Process Heat Medium Expansion Drum and associated relief valves is consistent with the heating medium circulation system.	A2-132	A2-132	See the response to comment A1-1.
In response to staff recommendation 132, AGDC will, prior to construction of final design, include layout and design specifications of the pig trap, inlet separation and liquid disposal, inlet/send-out meter station, and pressure control.	A2-133	A2-133	See the response to comment A1-1.
In response to staff recommendation 133, AGDC will, prior to construction of final design, file cause-and-effect matrices for the process instrumentation, fire and gas detection system, and ESD system for review and approval. The cause-and-effect matrices will include alarms and shutdown functions, details of the voting and shutdown logic, and set points.	A2-134	A2-134	See the response to comment A1-1.
In response to staff recommendation 134, AGDC will, prior to construction of final design, specify that all ESD valves are to be equipped with open and closed position switches connected to the DCS / SIS.	A2-135	A2-135	See the response to comment A1-1.
In response to staff recommendation 135, AGDC will, prior to construction of final design, file an evaluation of ESD valve closure times. The evaluation will account for the time to detect an upset or hazardous condition, notify plant personnel, and close the ESD valve.	A2-136	A2-136	See the response to comment A1-1.
In response to staff recommendation 136, AGDC will, prior to construction of final design, file an evaluation of dynamic pressure surge effects from valve opening and closure times and pump startup and shutdown operations.	A2-137	A2-137	See the response to comment A1-1.
In response to staff recommendation 137, AGDC will, prior to construction of final design, file a HAZOP prior to issuing the P&IDs for construction. A copy of the review, a list of the recommendations, and actions taken on the recommendations will be filed.	A2-138	A2-138	See the response to comment A1-1.
In response to staff recommendation 138, AGDC will, prior to construction of final design, file specifications that demonstrate the materials of construction have MDMTs that can withstand the minimum expected temperature at the North Slope or that AGDC demonstrates that equipment and piping will be fully depressurized in the event the ambient temperature becomes less than the MDMT with sufficient reliability through SIS or through written procedures.	A2-139	A2-139	See the response to comment A1-1.
In response to staff recommendation 139, AGDC will, prior to construction of final design, demonstrate that, for hazardous fluids, piping and piping nipples 2 inches or less in diameter are designed to withstand external loads, including vibrational loads in the vicinity of rotating equipment and operator live loads in areas accessible by operators.	A2-140	A2-140	See the response to comment A1-1.
In response to staff recommendation 140, AGDC will, prior to construction of final design, file the sizing basis and capacity for the final design of the flares and/or vent stacks as well as the pressure and vacuum relief valves for major process equipment, vessels, and storage tanks.	A2-141	A2-141	See the response to comment A1-1.
In response to staff recommendation 141, AGDC will, prior to construction of final design, file an updated fire protection evaluation of the proposed facilities. A copy of the evaluation, a list of recommendations and supporting justifications, and actions taken on the recommendations will be filed. The evaluation will justify the type, quantity, and location of hazard detection and hazard control, passive fire protection, ESD and depressurizing systems, firewater, and emergency response equipment, training, and qualifications in accordance with NFPA 59A (2001). The justification for the flammable and combustible gas detection and flame and heat detection will be in accordance with ISA 84.00.07 or equivalent methodologies that would demonstrate 90 percent or more of releases (unignited and ignited) that could result in an off-site or cascading impact would be detected by two or more detectors and result in isolation and de-inventory within 10 minutes. The analysis will take into account the set points, voting logic, wind speeds, and wind directions. The justification for firewater will provide calculations for all firewater demands (including firewater coverage on the LNG storage tanks) based on design densities, surface area, and throw distance and specifications for the corresponding hydrant and monitors needed to reach and cool equipment.	A2-142	A2-142	See the response to comment A1-1.
In response to staff recommendation 142, AGDC will, prior to construction of final design, file spill containment system drawings with dimensions and slopes of curbing, trenches, impoundments, and capacity calculations considering any foundations and equipment within impoundments, as well as the sizing and design of the down-comer that would transfer spills from the tank top to the ground-level impoundment system. The spill containment drawings will show containment for all components that could contain hazardous liquids, including all liquids handled above their flashpoint and those with toxic or asphyxiant vapor hazards, from the largest flow from a single line for 10 minutes, including de-inventory and specifying a reliability equivalent to	A2-143	A2-143	See the response to comment A1-1.

A2 – Alaska Gasline Development Corporation (cont'd)

AGDC Response				
<p>SIL2 or higher for any pump interlock systems, or the maximum liquid from the largest vessel (or total of impounded vessels), or otherwise demonstrate that providing spill containment would not significantly reduce the vapor dispersion or radiant heat consequences of a spill, including for any tank top LNG releases up to a full guillotine that would not be captured to the tank area impoundment. Spill containment systems will be constructed of materials that can withstand the liquid hazards. In addition, the rainout calculations for a liquid nitrogen vessel failure will be provided with validation, or liquid nitrogen containment will be provided, as well as a demonstration that any potential rapid phase transition effects would not be significant.</p> <p>Also, AGDC will provide details of collection for spills occurring at the onshore pipe-in-pipe ESD valve, over road crossings, details of hazardous liquid trenches crossing storm water trenches, containment for the condensate, slop oil, and diesel piping in the area near their storage tank impoundments at the Liquefaction Facilities, details on whether the miscellaneous hydrocarbon fluid at the GTP site would be handled above its flash point, and the design and sizing of hazardous liquid drainage from elevated process module platforms. In addition, AGDC will demonstrate that the tank top spill containment at each LNG storage tank would withstand the force and thermal shock of a sudden cryogenic release.</p>	A2-143			
<p>In response to staff recommendation 143, AGDC will, prior to construction of final design, provide the following on the water, snow, and ice handling systems for impoundments:</p> <p>a. water removal pumps for locally-curbed hazardous liquid impoundments at the Liquefaction Facilities, such as those around knockout drums; and</p> <p>b. details on how hardened snow will not inhibit the spill flow path (e.g., maintenance plans and/or details of snowmelt methods), including in spill collection areas and trenches leading to impoundments, and will not reduce the volume of any part the impoundment system beyond the extra height allowed in the impoundment system specifically for snow accumulation.</p>	A2-144	A2-144	See the response to comment A1-1.	
<p>In response to staff recommendation 144, AGDC will, prior to construction of final design, file detailed calculations to confirm that the final fire water volumes will be accounted for when evaluating the capacity of the impoundment system during a spill and fire scenario.</p>	A2-145	A2-145	See the response to comment A1-1.	
<p>In response to staff recommendation 145, AGDC will, prior to construction of final design, file electrical area classification drawings. The drawings will demonstrate compliance with NFPA 59A, NFPA 70, NFPA 497, API 500, or equivalent, including the spill trench that will serve the portion of the LNG rundown pipe rack located west of the air fin coolers which would contain process piping as Class 1 Division 1.</p>	A2-146	A2-146	See the response to comment A1-1.	
<p>In response to staff recommendation 146, AGDC will, prior to construction of final design, file drawings and details of how process seals or isolations installed at the interface between a flammable fluid system and an electrical conduit or wiring system will meet the requirements of NFPA 59A (2001).</p>	A2-147	A2-147	See the response to comment A1-1.	
<p>In response to staff recommendation 147, AGDC will, prior to construction of final design, file details of an air gap or vent installed downstream of process seals or isolations installed at the interface between a flammable fluid system and an electrical conduit or wiring system. Each air gap will vent to a safe location and be equipped with a leak detection device that will continuously monitor for the presence of a flammable fluid, alarm the hazardous condition, and shut down the appropriate systems.</p>	A2-148	A2-148	See the response to comment A1-1.	
<p>In response to staff recommendation 148, AGDC will, prior to construction of final design, file a drawing showing the location of the ESD buttons. ESD buttons will be easily accessible, conspicuously labeled, and located in an area which would be accessible during an emergency.</p>	A2-149	A2-149	See the response to comment A1-1.	
<p>In response to staff recommendation 149, AGDC will, prior to construction of final design, file complete drawings and a list of the hazard detection equipment. The drawings will clearly show the location and elevation of all detection equipment. The list will include the instrument tag number, type and location, alarm indication locations, and shutdown functions of the hazard detection equipment.</p>	A2-150	A2-150	See the response to comment A1-1.	
<p>In response to staff recommendation 150, AGDC will, prior to construction of final design, file a list of alarm and shutdown set points for all hazard detectors that account for the calibration gas of the hazard detectors when determining the lower flammable limit set points for methane, propane, ethane, and condensate.</p>	A2-151	A2-151	See the response to comment A1-1.	
<p>In response to staff recommendation 151, AGDC will, prior to construction of final design, file a list of alarm and shutdown set points for all hazard detectors that account for the calibration gas of hazard detectors when determining the set points for toxic components such as natural gas liquids and H2S.</p>	A2-152	A2-152	See the response to comment A1-1.	

A2 – Alaska Gasline Development Corporation (cont'd)

AGDC Response			
In response to staff recommendation 152, AGDC will, prior to construction of final design, file a technical review of facility design that: a. identifies all combustion/ventilation air intake equipment and the elevations and distances to any possible flammable gas or toxic release; and b. demonstrates that these areas will be adequately covered by hazard detection devices and indicates how these devices will isolate or shutdown any combustion or heating ventilation and air conditioning equipment whose continued operation could add to or sustain an emergency.	A2-153	A2-153	See the response to comment A1-1.
In response to staff recommendation 153, AGDC will, prior to construction of final design, file analysis of the buildings containing hazardous fluids and the ventilation calculations that limit concentrations below the LFLs (e.g., 25 percent LFL), including an analysis of off gassing of hydrogen in battery rooms, and will also provide hydrogen detectors that alarm (e.g., 20 to 25 percent LFL) and initiate mitigative actions (e.g., 40 to 50 percent LFL) in accordance with NFPA 59A, NFPA 70, or equivalent.	A2-154	A2-154	See the response to comment A1-1.
In response to staff recommendation 154, AGDC will, prior to construction of final design, provide low oxygen detectors to notify operators of liquid nitrogen releases at the liquefaction facilities.	A2-155	A2-155	See the response to comment A1-1.
In response to staff recommendation 155, AGDC will, prior to construction of final design, provide an evaluation of the normal module air changes within buildings at the GTP and reliability of the ventilation system to determine whether oxygen detectors are needed as another layer of protection to notify operators of a potential nitrogen release and ensure safe entry into a module/building.	A2-156	A2-156	See the response to comment A1-1.
In response to staff recommendation 156, AGDC will, prior to construction of final design, file an evaluation of the voting logic and voting degradation for hazard detectors.	A2-157	A2-157	See the response to comment A1-1.
In response to staff recommendation 157, AGDC will, prior to construction of final design, file facility plan drawings and a list of the fixed and wheeled dry-chemical, hand-held fire extinguishers, and other hazard control equipment. Plan drawings will clearly show the location and elevation by tag number of all fixed dry chemical systems in accordance with NFPA 17, wheeled and hand-held extinguishers location travel distances are along normal paths of access and egress in accordance with NFPA 10. The list will include the equipment tag number, type, capacity, equipment covered, discharge rate, and automatic and manual remote signals initiating discharge of the units.	A2-158	A2-158	See the response to comment A1-1.
In response to staff recommendation 158, AGDC will, prior to construction of final design, file a design that includes clean agent systems in the instrumentation buildings.	A2-159	A2-159	See the response to comment A1-1.
In response to staff recommendation 159, AGDC will, prior to construction of final design, file facility plan drawings showing the proposed location of the firewater and any foam systems. Plan drawings will clearly show the location of firewater and foam piping, post indicator valves, and the location and area covered by, each monitor, hydrant, hose, water curtain, deluge system, foam system, water-mist system, and sprinkler. The drawings will also include piping and instrumentation diagrams of the firewater and foam systems. The firewater coverage drawings will illustrate firewater coverage by two or more hydrants or monitors accounting for obstructions (or deluge systems) for all areas that contain flammable or combustible fluids.	A2-160	A2-160	See the response to comment A1-1.
In response to staff recommendation 160, AGDC will, prior to construction of final design, specify remotely operated or automatic firewater monitors at the Liquefaction Facilities in areas inaccessible or difficult to access in the event of an emergency.	A2-161	A2-161	See the response to comment A1-1.
In response to staff recommendation 161, AGDC will, prior to construction of final design, demonstrate that the firewater tank would be in compliance with NFPA 22 or an equivalent or better level of safety.	A2-162	A2-162	See the response to comment A1-1.
In response to staff recommendation 162, AGDC will, prior to construction of final design, include or demonstrate the firewater storage volume for its facilities has minimum reserved capacity for its most demanding firewater scenario plus 1,000 gpm for no less than 2 hours.	A2-163	A2-163	See the response to comment A1-1.
In response to staff recommendation 163, AGDC will, prior to construction of final design, specify that firewater pump shelters are designed to remove the largest firewater pump or other component for maintenance with an overhead or external crane.	A2-164	A2-164	See the response to comment A1-1.
In response to staff recommendation 164, AGDC will, prior to construction of final design, demonstrate that the potential for jet fires to cause cascading hazards in any area of the GTP will be effectively mitigated by systems with a reliability equivalent to SIL2 or higher.	A2-165	A2-165	See the response to comment A1-1.
In response to staff recommendation 165, AGDC will, prior to construction of final design, file drawings and specifications for the passive protection systems at the GTP and Liquefaction Facilities to protect equipment and supports from cold temperature releases.	A2-166	A2-166	See the response to comment A1-1.

A2 – Alaska Gasline Development Corporation (cont'd)

AGDC Response			
In response to staff recommendation 166, AGDC will, prior to construction of final design, file calculations or test results for the structural passive protection systems at the GTP and Liquefaction Facilities to demonstrate that equipment and supports are protected from low temperature releases that are below the MDMT of equipment and supports.	A2-167	A2-167	See the response to comment A1-1.
In response to staff recommendation 167, AGDC will, prior to construction of final design, file drawings and specifications for the structural passive protection systems at the GTP and Liquefaction Facilities to demonstrate the equipment and supports are protected from pool and jet fires.	A2-168	A2-168	See the response to comment A1-1.
In response to staff recommendation 168, AGDC will, prior to construction of final design, file a detailed quantitative analysis to demonstrate that adequate mitigation would be provided for each pressure vessel that could fail within the 4,000 BTU/ft ² -hr zone from a pool or jet fire; each critical structural component and emergency equipment item that could fail within the 4,900 BTU/ft ² -hr zone from a pool or jet fire; and each occupied building that could expose unprotected personnel within the 1,600 BTU/ft ² -hr zone from a pool or jet fire. Trucks at truck transfer stations will be included in the analysis of potential pressure vessel failures, as well as measures needed to prevent cascading impact due to the 10-minute sizing spill at the marine area. A combination of passive and active protection for pool fires and passive and/or active protection for jet fires will be provided and demonstrate the effectiveness and reliability. Effectiveness of passive mitigation will be supported by calculations or test results for the thickness limiting temperature rise over the fire duration, and active mitigation will be supported by reliability information by calculations or test results, such as demonstrating flow rates and durations of any cooling water would mitigate the heat absorbed by the component. The total firewater demand will account for all components that could fail to a pool or jet fire.	A2-169	A2-169	See the response to comment A1-1.
In response to staff recommendation 169, AGDC will, prior to construction of final design, provide an analysis demonstrating occupied buildings at the Liquefaction Facilities would be able to withstand radiant heats from pool and jet fires and overpressures and projectiles from vapor cloud explosions from ignition of flammable vapors generated from a design spill release. Alternatively, AGDC will file an analysis demonstrating the occupied buildings at the Liquefaction Facilities have been relocated or provided with passive and active measures that would prevent impacts.	A2-170	A2-170	See the response to comment A1-1.
In response to staff recommendation 170, AGDC will, prior to construction of final design, file an analysis demonstrating safety related equipment (e.g., firewater pump buildings, control buildings, and emergency generators) at the Liquefaction Facilities would be able to withstand radiant heats from pool and jet fires and overpressures and projectiles from vapor cloud explosions from ignition of flammable vapors generated from a design spill release. Alternatively, AGDC will file an analysis demonstrating the safety related equipment at the Liquefaction Facilities have been relocated or provided with passive and active measures that will prevent impacts.	A2-171	A2-171	See the response to comment A1-1.
In response to staff recommendation 171, AGDC will, prior to construction of final design, file an analysis demonstrating the refrigerant storage vessels at the Liquefaction Facilities will be able to withstand radiant heats from pool and jet fires and overpressures and projectiles from vapor cloud explosions from ignition of flammable vapors generated from a design spill release. Alternatively, AGDC will file an analysis demonstrating the refrigerant storage vessels at the Liquefaction Facilities have been relocated or provided with passive and active measures that will prevent impacts.	A2-172	A2-172	See the response to comment A1-1.
In response to staff recommendation 172, AGDC will, prior to construction of final design, file specifications and drawings demonstrating how cascading damage of transformers will be prevented (e.g., firewalls or spacing) in accordance with NFPA 850 or equivalent.	A2-173	A2-173	See the response to comment A1-1.
In response to staff recommendation 173, AGDC will, prior to construction of final design, file an analysis demonstrating the LNG storage tank outer walls can withstand the overpressures generated from ignition of vapor clouds from design spills in adjacent plant areas.	A2-174	A2-174	See the response to comment A1-1.
In response to staff recommendation 174, AGDC will, prior to construction of final design, file a projectile analysis that demonstrates each LNG storage tank can withstand projectiles from explosions and high winds. The analysis will detail and justify the projectile speeds and characteristics and method used to determine penetration or perforation depths.	A2-175	A2-175	See the response to comment A1-1.
In response to staff recommendation 175, AGDC will, prior to construction of final design, file drawings of internal road vehicle protections, such as guard rails, barriers, and bollards to protect all equipment containing hazardous fluids or that are safety related (e.g., hydrants and monitors) to ensure that they are located away from roadway or protected from inadvertent damage from vehicles.	A2-176	A2-176	See the response to comment A1-1.

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A2 – Alaska Gasline Development Corporation (cont'd)

AGDC Response			
In response to staff recommendation 176, AGDC will, prior to construction of final design, file documentation demonstrating the Seismic Isolation system for the LNG tanks complies with the design, analysis, and testing requirements of Chapter 17 of ASCE 7-05. The Peer Review of the design will be performed as required by Chapter 17 of ASCE 7-05.	A2-177	A2-177	See the response to comment A1-1.
In response to staff recommendation 177, AGDC will, prior to construction of final design, file an analysis of the structural integrity of the outer containment, tank foundation concrete slabs, tank base concrete slabs, and seismic isolator concrete pedestals, demonstrating they are designed to withstand all loads and combinations that comply with code requirements, including but not limited to ASCE 7-05, ACI 318, ACI 350, ACI 376, API 620, API 625 and API 650.	A2-178	A2-178	See the response to comment A1-1.
In response to staff recommendation 178, AGDC will, prior to construction of final design, file the FEA modeling with the inputs and outputs reports for tanks design, base concrete slabs and foundation concrete slabs design, including details of splicing of precast concrete LNG tank panels, connections to be used between the outer LNG walls and the vapor barrier dome.	A2-179	A2-179	See the response to comment A1-1.
In response to staff recommendation 179, AGDC will, prior to construction of final design, file a detailed analysis and any associated drawings detailing seismic sliding and overturning resistance of the LNG tank's inner tank.	A2-180	A2-180	See the response to comment A1-1.
In response to staff recommendation 180, AGDC will, prior to construction of final design, file design calculations to confirm the combination of overturning moment and seismic vertical acceleration that induce any uplift and shear of the external wall will be handled with the seismic tendons in combination with shear key.	A2-181	A2-181	See the response to comment A1-1.
In response to staff recommendation 181, AGDC will, prior to construction of final design, file the non-linear response history analysis for the LNG tank and isolation system that will simultaneously include the time history, vertical component of motion envelope, and the site-specific vertical design response spectra developed for the Project. The analysis will also account for horizontal components rotated so that one of the components for each set of motions is the maximum component of response at the isolated period of the tank.	A2-182	A2-182	See the response to comment A1-1.
In response to staff recommendation 182, AGDC will, prior to construction of final design, file a detailed analysis and any associated drawings of the omega joints detailed in to be used between the bottom LNG tank plate and the bottom of the outer tank wall.	A2-183	A2-183	See the response to comment A1-1.
In response to staff recommendation 183, AGDC will, prior to construction of final design, file a detailed analysis and any associated drawings detailing the LNG tank secondary bottom design to be used to protect the LNG tank slab and seismic isolators from any cryogenic temperatures it will be exposed to during a spill.	A2-184	A2-184	See the response to comment A1-1.
In response to staff recommendation 184, AGDC will, prior to construction of final design, file the cryogenic protection plan for the LNG tanks foundation concrete slabs and triple pendulum seismic isolator concrete pedestal supports during spill condition.	A2-185	A2-185	See the response to comment A1-1.
In response to staff recommendation 185, AGDC will, prior to construction of final design, file the design analysis to determine the precast panel outer wall behavior for operating and spill conditions and to ensure panel and joint leak tightness.	A2-186	A2-186	See the response to comment A1-1.
In response to staff recommendation 186, AGDC will, prior to construction of final design, file a snow removal plan for critical equipment or provide calculations that prove that support structures and equipment adequately account for snow loads.	A2-187	A2-187	See the response to comment A1-1.
In response to staff recommendation 187, AGDC will, prior to construction of final design, file an analysis indicating areas susceptible to falling ice and snow, and file drawings of structures and coverings that would protect employees, piping, and equipment from falling snow and ice.	A2-188	A2-188	See the response to comment A1-1.
In response to staff recommendation 188, AGDC will, prior to construction of final design, file calculations demonstrating the loads on buried pipelines and utilities (or encasements) at permanent crossings would be adequately distributed. The analysis will be based on API RP 1102 or other approved methodology.	A2-189	A2-189	See the response to comment A1-1.
In response to staff recommendation 189, AGDC will, prior to commissioning, file a detailed schedule for commissioning through equipment startup. The schedule will include milestones for all procedures and tests to be completed: prior to introduction of hazardous fluids and during commissioning and startup. AGDC will file documentation certifying that each of these milestones has been completed before authorization to commence the next phase of commissioning and startup will be issued.	A2-190	A2-190	See the response to comment A1-1.
In response to staff recommendation 190, AGDC will, prior to commissioning, file detailed plans and procedures for: testing the integrity of on-site mechanical installation; functional tests; introduction of hazardous fluids; operational tests; and placing the equipment into service.	A2-191	A2-191	See the response to comment A1-1.
In response to staff recommendation 191, AGDC will, prior to commissioning, file the procedures for pressure/leak tests which address the requirements of ASME VIII and ASME B31.3. The procedures will include a line list of pneumatic and hydrostatic test pressures.	A2-192	A2-192	See the response to comment A1-1.

A2 – Alaska Gasline Development Corporation (cont'd)

AGDC Response			
In response to staff recommendation 192, AGDC will, prior to commissioning, file a plan for clean-out, dry-out, purging, and tightness testing. This plan will address the requirements of the American Gas Association's Purging Principles and Practice, and will provide justification if not using an inert or non-flammable gas for clean-out, dry-out, purging, and tightness testing.	A2-193	A2-193	See the response to comment A1-1.
In response to staff recommendation 193, AGDC will, prior to commissioning, file the operation and maintenance procedures and manuals, as well as safety procedures, hot work procedures and permits, abnormal operating conditions reporting procedures, simultaneous operational procedures, and management of change procedures and forms. In addition, AGDC will include an LNG storage tank stratification monitoring, prevention, and correction procedure to be included as part of the facility's operation and maintenance procedures.	A2-194	A2-194	See the response to comment A1-1.
In response to staff recommendation 194, AGDC will, prior to commissioning, file truck transfer procedures that require facility personnel to be physically present during deliveries and that verify, through written checklists, a correct connection before loading/unloading. In addition, the procedures will include recognition of abnormalities and use of emergency shutoff mechanisms.	A2-195	A2-195	See the response to comment A1-1.
In response to staff recommendation 195, AGDC will, prior to commissioning, tag all equipment, instrumentation, and valves in the field, including drain valves, vent valves, main valves, and car-sealed or locked valves.	A2-196	A2-196	See the response to comment A1-1.
In response to staff recommendation 196, AGDC will, prior to commissioning, file a plan to maintain a detailed training log to demonstrate that operating, maintenance, and emergency response staff has completed the required training. In addition, AGDC will file signed documentation that demonstrates training has been conducted, including ESD and response procedures, prior to the respective operation.	A2-197	A2-197	See the response to comment A1-1.
In response to staff recommendation 197, AGDC will, prior to commissioning, equip the LNG storage tanks and adjacent piping and supports with permanent settlement monitors to allow personnel to observe and record the relative settlement between the LNG storage tank and adjacent piping. The settlement record will be reported in the semi-annual operational reports.	A2-198	A2-198	See the response to comment A1-1.
In response to staff recommendation 198, AGDC will, prior to commissioning, file settlement results from hydrostatic tests of the LNG storage containers and will file a plan to periodically verify settlements are as expected and will not exceed applicable criteria in API 620, API 625, API 653, and ACI 376.	A2-199	A2-199	See the response to comment A1-1.
In response to staff recommendation 199, AGDC will, prior to the introduction of hazardous fluids, complete and document all pertinent tests (Factory Acceptance Tests, Site Acceptance Tests, Site Integration Tests) associated with the DCS/SIS that demonstrates full functionality and operability of the system.	A2-200	A2-200	See the response to comment A1-1.
In response to staff recommendation 200, AGDC will, prior to the introduction of hazardous fluids, develop and implement an alarm management program to reduce alarm complacency and maximize the effectiveness of operator response to alarms.	A2-201	A2-201	See the response to comment A1-1.
In response to staff recommendation 201, AGDC will, prior to the introduction of hazardous fluids, complete and document a firewater pump acceptance test and firewater monitor and hydrant coverage test. The actual coverage area from each monitor and hydrant will be shown on facility plot plan(s).	A2-202	A2-202	See the response to comment A1-1.
In response to staff recommendation 202, AGDC will, prior to the introduction of hazardous fluids, complete and document a pre-startup safety review to ensure that installed equipment meets the design and operating intent of the facility. The pre-startup safety review will include any changes since the last hazard review, operating procedures, and operator training. A copy of the review with a list of recommendations, and actions taken on each recommendation, will be filed.	A2-203	A2-203	See the response to comment A1-1.
In response to staff recommendation 203, AGDC will, prior to the introduction of hazardous fluids, file finalized ERP(s), including coordination with federal, state, and local agencies and neighboring facilities, such as the PBU CGF and other facilities handling hazardous materials, and will include processes and procedures to be used in the event of an incident at the GTP, Liquefaction Facilities, and neighboring facilities.	A2-204	A2-204	See the response to comment A1-1.
AGDC respectfully requests FERC provide a definition, or point to a regulatory citation, for the term 'Problems of significant magnitude...' AGDC will be implementing procedures to communicate the requirement and wants to be clear on FERC's expectations for reporting.	A2-205	A2-205	See the response to comment A1-1.
Please note: this request is also included in AGDC's DEIS review comment table.			

A2 – Alaska Gasline Development Corporation (cont'd)

AGDC Response			
In response to staff recommendation 205, AGDC will, prior to commencement of service, notify FERC staff of any proposed revisions to the security plan and physical security of the plant.	A2-206	A2-206	See the response to comment A1-1.
In response to staff recommendation 206, AGDC will, prior to commencement of service, label piping with fluid service and direction of flow in the field, in addition to the pipe labeling requirements of NFPA 59A (2001).	A2-207	A2-207	See the response to comment A1-1.
In response to staff recommendation 207, AGDC will, prior to commencement of service, provide plans for any preventative and predictive maintenance program that performs periodic or continuous equipment condition monitoring.	A2-208	A2-208	See the response to comment A1-1.
AGDC respectfully requests changing the language in this requirement from 'supervision' to 'oversight'. Employers have a legal requirement for supervision of their employees. AGDC's role as the contract owner will be oversight of the contractors rather than the supervision required and provided by a direct employer.	A2-209	A2-209	See the response to comment A1-1.
In response to Staff Recommendation 208, AGDC will, prior to commencement of service, develop procedures for handling off-site contractors including responsibilities, restrictions, and limitations and for oversight of these contractors by AGDC staff.			
Please note: a redline for this request is also included in AGDC's DEIS review comment table.			
In response to staff recommendation 209, AGDC will, prior to commencement of service, file a request for written authorization from the Director of the OEP. Such authorization would only be granted following a determination by the Coast Guard, under its authorities under the Ports and Waterways Safety Act, the Magnuson Act, the MTSA of 2002, and the Security and Accountability For Every Port Act, that appropriate measures to ensure the safety and security of the facility and the waterway have been put into place by AGDC or other appropriate parties.	A2-210	A2-210	See the response to comment A1-1.
In response to staff recommendation 210, AGDC will, prior to each FERC staff technical review and site inspection, respond to a specific information request including information relating to possible design and operating conditions that may have been imposed by other agencies or organizations. Up-to-date detailed P&IDs reflecting facility modifications and provision of other pertinent information not included in the semi-annual reports described below, including facility events that have taken place since the previously submitted semi-annual report, will be submitted.	A2-211	A2-211	See the response to comment A1-1.
In response to staff recommendation 211, AGDC will file semi-annual operational reports within 45 days after each period ending June 30 and December 31. AGDC will file semi-annual operational reports with the Secretary to identify changes in facility design and operating conditions; abnormal operating experiences; activities (e.g., ship arrivals, quantity and composition of imported and exported LNG, liquefied and vaporized quantities, boil off/flash gas); and plant modifications, including future plans and progress thereof. Abnormalities will include, but not be limited to, unloading/loading/shipping problems, potential hazardous conditions from off-site vessels, storage tank stratification or rollover, geysering, storage tank pressure excursions, cold spots on the storage tanks, storage tank vibrations and/or vibrations in associated cryogenic piping, storage tank settlement, significant equipment or instrumentation malfunctions or failures, non-scheduled maintenance or repair (and reasons therefore), relative movement of storage tank inner vessels, hazardous fluids releases, fires involving hazardous fluids and/or from other sources, negative pressure (vacuum) within a storage tank, and higher than predicted boil off rates. Adverse weather conditions and the effect on the facility also will be reported. Reports will be submitted within 45 days after each period ending June 30 and December 31. In addition to the above items, a section entitled Significant Plant Modifications Proposed for the Next 12 Months (dates) will be included in the semi-annual operational reports. Such information will provide FERC staff with early notice of anticipated future construction/maintenance at the LNG and GIP facilities.	A2-212	A2-212	See the response to comment A1-1.
In response to staff recommendation 212, AGDC will notify the Commission within 24 hours in the event the temperature of any region of the LNG storage container, including any secondary containment and imbedded pipe supports, becomes less than the minimum specified operating temperature.	A2-213	A2-213	See the response to comment A1-1.
In response to staff recommendation 213, AGDC will, during construction and operations, report significant non-scheduled events, including safety-related incidents (e.g., LNG, condensate, refrigerant, or natural gas releases; fires; explosions; mechanical failures; unusual over pressurization; and major injuries) and security-related incidents (e.g., attempts to enter site and suspicious activities) to FERC staff. In the event that an abnormality is of significant magnitude to threaten public or employee safety, cause significant property damage, or interrupt service, notification will be made immediately, without unduly interfering with any necessary or appropriate emergency repair, alarm, or other emergency procedure. In all instances, notification will be made to FERC staff within 24 hours.	A2-214	A2-214	See the response to comment A1-1.

A2 – Alaska Gasline Development Corporation (cont’d)

CC-1112

AGDC Response
<p>This notification practice will be incorporated into the LNG Plant’s emergency plan. Examples of reportable hazardous fluids-related incidents include:</p> <ul style="list-style-type: none"> a. fire; b. explosion; c. estimated property damage of \$50,000 or more; d. death or personal injury necessitating in-patient hospitalization; e. release of hazardous fluids for 5 minutes or more; f. unintended movement or abnormal loading by environmental causes, such as an earthquake, landslide, or flood, that impairs the serviceability, structural integrity, or reliability of a facility that contains, controls, or processes hazardous fluids; g. any crack or other material defect that impairs the structural integrity or reliability of a facility that contains, controls, or processes hazardous fluids; h. any malfunction or operating error that causes the pressure of a pipeline or facility that contains or processes hazardous fluids to rise above its maximum allowable operating pressure (or working pressure for facilities) plus the build-up allowed for operation of pressure-limiting or control devices; i. a leak in a facility that contains or processes hazardous fluids that constitutes an emergency; j. inner tank leakage, ineffective insulation, or frost heave that impairs the structural integrity of an LNG storage tank; k. any safety-related condition that could lead to an imminent hazard and cause (either directly or indirectly by remedial action of the operator), for purposes other than abandonment, a 20 percent reduction in operating pressure or shutdown of operation of a pipeline or a facility that contains or processes hazardous fluids; l. safety-related incidents from hazardous fluids transportation occurring at or en route to and from the GTP or Liquefaction Facilities; or m. an event that is significant in the judgment of the operator and/or management even though it does not meet the above criteria or the guidelines set forth in an LNG terminal’s incident management plan. <p>In the event of an incident, the Director of the OEP has delegated authority to take whatever steps are necessary to ensure operational reliability and to protect human life, health, property, or the environment, including authority to direct the LNG Plant to cease operations. Following the initial company notification, FERC staff would determine the need for a separate follow-up report or follow up in the upcoming semi-annual operational report. All company follow-up reports will include investigation results and recommendations to minimize a reoccurrence of the incident. (section 4.18.9)</p>
<p>In response to staff recommendation 214, AGDC will, prior to construction, file with the Secretary, final fault crossing designs and plans for the Northern Foothills, Stampede-Little Panguingue Creek, Healy Creek, Healy, Park Road, Denali, and Castle Mountain faults and the Beluga River and North Cook Inlet-SRS anticlines. These designs and plans will incorporate site-specific design specifications informed by geotechnical field investigations. At a minimum, the field investigations will analyze potential loading from seismically-induced ground motion, repeated cycling from frost heave, thaw settlement, thermokarsting, and permafrost degradation due to climate change. The final fault crossing designs will be stamped and sealed by a professional engineer-of-record registered in the State of Alaska.</p>

A2-214

A2-215

A2-215

Sections 4.18.10.5, 5.1.18, and 5.2 of the final EIS have been updated to address this comment.

A3 – Alaska Gasline Development Corporation

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**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Alaska Gasline Development Corporation) Docket No. CP17-178-000

**ANSWER OF ALASKA GASLINE DEVELOPMENT CORPORATION
TO MOTION OF MATANUSKA-SUSITNA BOROUGH
TO ISSUE SUPPLEMENTAL DRAFT ENVIRONMENTAL IMPACT STATEMENT**

Pursuant to Rule 213 of the Federal Energy Regulatory Commission's ("FERC" or "Commission") Rules of Practice and Procedure, 18 C.F.R. § 385.213 (2017), Alaska Gasline Development Corporation ("AGDC") respectfully submits this answer to the motion filed by the Matanuska-Susitna Borough ("MSB") on September 27, 2019 requesting the Commission to issue a Supplement Draft Environmental Impact Statement ("DEIS"). For the reasons stated below, MSB's motion should be denied.

BACKGROUND

On June 28, 2019, the Commission issued its DEIS on the Alaska LNG Project (the "Project"). The DEIS is a comprehensive document that describes the Project and assesses the potential environmental effects of construction and operation of the Project facilities in accordance with the requirements of the National Environmental Policy Act ("NEPA"). In furtherance of its efforts to promote an alternative site for the LNG facilities at Port MacKenzie, MSB filed both the instant motion, as well as comments on the DEIS. This answer is limited to a response to MSB's motion requesting the issuance of a Supplemental DEIS.

CC-1113

A3 – Alaska Gasline Development Corporation (cont'd)

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ANSWER

MSB contends (at 1) that a Supplemental DEIS is required because the DEIS fails to perform an adequate analysis of the Port MacKenzie site and does not provide enough factual information. MSB mischaracterizes the facts.

First, MSB states (at 3) that the DEIS provides a summary overview of the Port MacKenzie Alternative in the Alternatives section but “does not provide any analysis whatsoever of the Port MacKenzie Alternative in the Environmental Analysis sections.” This contention misleadingly suggests that the DEIS does not contain an environmental analysis of the Port MacKenzie site. When examined more closely, however, it appears that MSB is merely commenting about where in the DEIS this analysis is found. The DEIS describes and evaluates the Port MacKenzie Alternative appropriately in the “Alternatives” section of the DEIS. Specifically, the DEIS includes approximately three pages of analysis of the Port MacKenzie site in Section 3.8.1.3 under the heading of Cook Inlet Alternative Sites. The analysis of the Port MacKenzie Alternative is not found in the Environmental Analysis in Section 4 of the DEIS because that section analyzes the Project, not the alternatives to the Project. MSB’s complaint that the Environmental Analysis section of the DEIS does not analyze the Port MacKenzie Alternative, when such alternative is thoroughly analyzed in the Alternatives section of the DEIS, is frivolous.

Next, MSB contends (at 3-4) that FERC eliminates the Port MacKenzie Alternative from full consideration as a reasonable alternative site because “it fails to satisfy one particular ‘objective’ of the Project.” MSB contends that FERC eliminated the Port MacKenzie Alternative because it would not allow for a future interconnection with the existing ENSTAR pipeline at the southern end of its system. MSB argues there is no such “objective” stated in the DEIS, and even

A3-1

A3-1

Comment noted.

A3-2

A3-2

Comments noted. Section 1.1 of the final EIS has been updated to specify the three gas interconnection points included in AGDC’s application to FERC.

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if it was an objective the Port MacKenzie site would also connect to the ENSTAR distribution system. A3-2

MSB's argument is misleading in several respects. First, contrary to MSB's contention (at 4) that interconnecting with ENSTAR is not included as an objective of the Project, the DEIS Purpose and Need Statement clearly includes as objectives "providing gas to users within the State of Alaska" and providing "interconnections along the pipeline to allow for in-state gas deliveries." The absence of a specific reference to a future "Kenai Peninsula interconnection" in the Purpose and Need Statement is immaterial. As MSB concedes, the Project is intended to include future interconnection points to allow for in-state deliveries. Adding an interconnect with ENSTAR, the largest gas distributor in the state, at the terminus of the pipeline on the Kenai Peninsula is certainly encompassed within the stated objective of providing gas interconnections and gas to users in the State.¹

MSB also claims (at 5) that the Port MacKenzie Alternative would meet the objective of allowing for in-state deliveries because it would also connect to the ENSTAR's distribution system. This claim is also misleading because it misses the point of connecting at both ends of ENSTAR's system. The Project intends to connect with ENSTAR on the southern end of ENSTAR's system on the east side of Cook Inlet in Nikiski, in addition to connecting on the west side of Cook Inlet through ENSTAR's Beluga Pipeline. The Port MacKenzie Alternative could also connect to the ENSTAR system through the Beluga Pipeline north of the port. However, it would not connect to ENSTAR on the southern end of ENSTAR's system on the east side of Cook A3-3

A3-3 Comment noted.

¹ MSB also notes (at 4-5) that third-party facilities that would be used to move gas away from the planned interconnection points are not proposed as part of the Project. That fact, however, does not detract from the Project's objective of meeting in-state gas needs. It just means that these facilities are not part of the Project for environmental analysis

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Inlet. Interconnections with ENSTAR's system on both sides of Cook Inlet would enhance ENSTAR's ability to balance its system and serve the high demand for natural gas in Anchorage and surrounding areas. A3-3

Finally, assuming *arguendo* that the DEIS had improperly concluded that adding a second interconnection with ENSTAR was a Project objective, or that the Port MacKenzie Alternative also met that objective, MSB's contention is still misleading. MSB argues (at 3) that based on its finding that the Port MacKenzie Alternative would not meet the "one particular objective" of allowing an interconnection with ENSTAR at the southern end of the system, the DEIS eliminates the site "from full consideration as a reasonable alternative site for the liquefaction facility."

This statement is demonstrably false for two reasons. First, contrary to MSB's claim that the DEIS rejected the Port MacKenzie Alternative for failure to satisfy "one particular objective", the DEIS also finds that ice conditions in Upper Cook Inlet that would have to be navigated to and from the Port MacKenzie site "could hamper the ability to meet the proposed export volumes required to meet the Project's principal commercial objective." DEIS at 3-39. More importantly, as discussed above, notwithstanding the inability of the Port to meet two of the Project objectives, the DEIS nonetheless thoroughly analyzes the Port MacKenzie Alternative in its analysis of alternatives and concludes that it "would not provide a significant environmental advantage over the proposed Nikiski site." Thus, the failure of the Port MacKenzie to meet the Project's objectives did not result in FERC's elimination of the alternative from consideration. To the contrary, the DEIS fully analyzes and compares the environmental impacts of the Nikiski and Port MacKenzie sites. A3-4

In addition to mischaracterizing the DEIS, MSB's request for a Supplemental DEIS does not satisfy the applicable legal standard. The Council of Environmental Quality ("CEQ") A3-5

A3-4 Comment noted.

A3-5 Comment noted.

A3 – Alaska Gasline Development Corporation (cont’d)

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regulations, adopted by FERC, specify when a supplement to a DEIS is required. One basis for a Supplemental DEIS is if there exists significant new circumstances or FERC has proposed substantial changes in the proposed action. *See* 40 C.F.R. § 1502.9(c) MSB does not claim these circumstances exist, nor do they.

A3-5

Rather, MSB contends that the DEIS is inadequate. This claim is governed by Section 1502.9(a) of the CEQ regulations, which states as follows:

If a draft statement is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft of the appropriate portion. The agency shall make every effort to disclose and discuss at appropriate points in the draft statement all major points of view on the environmental impacts of the alternatives including the proposed action.²

MSB’s motion does not demonstrate that FERC’s analysis of the Port MacKenzie alternative “is so inadequate as to preclude meaningful analysis,” or that it did not state MSB’s point of view. Far from being inadequate, the DEIS thoroughly describes and evaluates the Port MacKenzie Alternative in Section 3.8.1.3 of the DEIS. In this section, the DEIS discusses relative impacts on wetlands, the need for marine improvements, dredging requirements, beluga whale impacts and potential whale vessel strikes, ice conditions and required mitigation structures, vessel transit distances and times, air emissions, tidal ranges, silt content, and waterway suitability. The DEIS finds that while the Port MacKenzie site offers certain environmental advantages, the proposed Nikiski site is superior in certain other respects. The DEIS concludes that in addition to not meeting the Project’s objectives, the Port MacKenzie would not provide a significant environmental advantage over the proposed Nikiski site.

A3-6

A3-6

Comment noted.

² 40 C.F.R. § 1502.9(a). The Commission applies CEQ regulations and guidance unless inconsistent with statutory requirements applicable to the Commission. 18 C.F.R. § 380.1 (2016).

A3 – Alaska Gasline Development Corporation (cont'd)

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In short, MSB's characterization of the DEIS as simply offering a faulty conclusion about the ability of the Port MacKenzie Alternative to meet one of the Project's objectives without any environmental analysis is patently false. The DEIS provides a meaningful analysis of the Port MacKenzie Alternative. A Supplemental DEIS is not required. MSB's motion should be denied. A3-6

Respectfully submitted,

Howard L. Nelson

Kenneth M. Minesinger
Howard L. Nelson
Greenberg Traurig, LLP
2101 L Street, NW, Suite 1000
Washington, DC 20037
(202) 331-3100
nelsonh@gtlaw.com

CERTIFICATE OF SERVICE

I hereby certify that I have this 11th day of October 2019, served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Howard L. Nelson

Howard L. Nelson

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