

See the following User's Notes for details on these technical requirements.

	Yes	No	NA
1 Resumption, No Change in Licence Conditions			
1.1 External pipeline condition			
1.1.1 Cathodic protection has been maintained.	___	___	___
1.1.2 Pipeline external coating integrity has been assessed.	___	___	___
1.2 Internal pipeline condition			
1.2.1 Pipeline internal coating integrity has been assessed.	___	___	___
1.2.2 Pipeline internal condition has been assessed.	___	___	___
1.3 Road or rail crossings: sufficient wall thickness or suitability of the casing has been assessed.	___	___	___
1.4 Class location has been assessed.	___	___	___
1.5 Hydrotest: The pipeline will be rehydrotested before use.	___	___	___
1.6 Sour service requirements: The pipeline and its components satisfy sour service requirements.	___	___	___
1.7 Reason for discontinuation/abandonment: Applicant can demonstrate reason for discontinuation/abandonment.	___	___	___
1.8 Downstream effects: The pipeline MOP and H ₂ S level will be compatible with those of connecting pipelines.	___	___	___
 2 Increase in Maximum Operating Pressure (MOP)			
2.1 Materials pressure rating: There is adequate pressure rating of all pipeline components.	___	___	___
2.2 MOP is compatible with that of other connecting systems.	___	___	___
2.3 MOP increase will reclassify the pipeline as sour service (see Section 3).	___	___	___
2.4 Notch toughness requirements have been met, if steel pipe.	___	___	___
2.5 Hydrotesting requirements: The applicant will rehydrotest the pipeline.	___	___	___
 3 Change of Service: H₂S Content Increase			
3.1 Nonsour service gas to gas >10 mol/kmol, or sour service to gas >10 mol/kmol			
3.1.1 Minimum distance (setback) requirements separating pipelines from residential and other developments, based on the new H ₂ S release volume, are met.	___	___	___
3.1.2 Pipeline will be rehydrotested to 1.4 x MOP.	___	___	___
3.1.3 Stress calculation: Design stress limitations are met.	___	___	___
3.1.4 Sour service material requirements: The pipeline and its components satisfy sour service requirements.	___	___	___
3.1.5 Downstream effects: The pipeline H ₂ S level will be compatible with that of connecting pipelines.	___	___	___
3.1.6 Corrosion mitigation, monitoring, evaluation, and record-keeping programs are in place prior to operation under new service conditions.	___	___	___

Checklist for Minimum Technical Requirements for Pipeline Applications (page 2)

	Yes	No	N/A
4 Substance Change from Less to More Corrosive			
4.1 Downstream effects: The pipeline operating conditions will be compatible with those of connecting pipelines.	___		
4.2 Corrosion mitigation, monitoring, evaluation, and record-keeping programs are in place prior to operation under more corrosive conditions.	___	___	
4.3 Flow analysis has been completed to determine flow regime.	___	___	
5 Liner Installation			
5.1 Freestanding liner			
5.1.1 Freestanding liner: meets the requirements listed in the user notes	___		
5.1.2 Downstream effects: pipeline MOP and H ₂ S level will be compatible with those of connecting pipelines.	___	___	___
5.2 Tight liner			
5.2.1 Tight liner: meets the requirements listed in the user notes	___		
5.2.2 Downstream effects: pipeline MOP and H ₂ S level will be compatible with those of connecting pipelines.	___	___	___
6 Standalone Composite Pipeline Installation			
6.1 Pipeline liner material rated MOP is greater than licensed MOP.	___		
6.2 Natural gas service restrictions are satisfied.	___	___	___
6.3 Downstream effects: The pipeline MOP and H ₂ S level will be compatible with those of connecting pipelines.	___	___	___

User's Notes—Checklist for Minimum Technical Requirements for Pipeline Applications

The checklist reviews the typical information that the EUB requires to evaluate nonroutine applications involving resumption, MOP increase, substance change or H₂S increase, liner installation, or composite pipeline installation. This section indicates the type of information that the applicant must attach with an application, as well as what information it must keep on file and have available for EUB review upon request. Depending on specific circumstances, an applicant may be requested to provide additional information. However, in most cases, submitting the information indicated should be sufficient. The applicant may include one engineering assessment that addresses all the necessary issues in one report instead of separate reports for each individual issue.

The flowchart on the next page indicates the section of the checklist that deals with each specific issue.

1 RESUMPTION, NO CHANGE IN LICENCE CONDITIONS

1.1 External pipeline condition

1.1.1 Cathodic protection has been maintained.

Yes means the applicant has maintained and monitored cathodic protection during the discontinued or abandoned period. Areas of concern such as shorts or shorts in casings are absent.

No means the applicant has not maintained and monitored cathodic protection or the cathodic protection did not provide adequate protection. Attach an engineering assessment (CSA Z662, Clause 10.11.6: Engineering Assessments) of the external condition of the pipeline validating its suitability for service and outlining any measures necessary to mitigate and repair any damaged areas.

NA means the pipeline is nonmetallic.

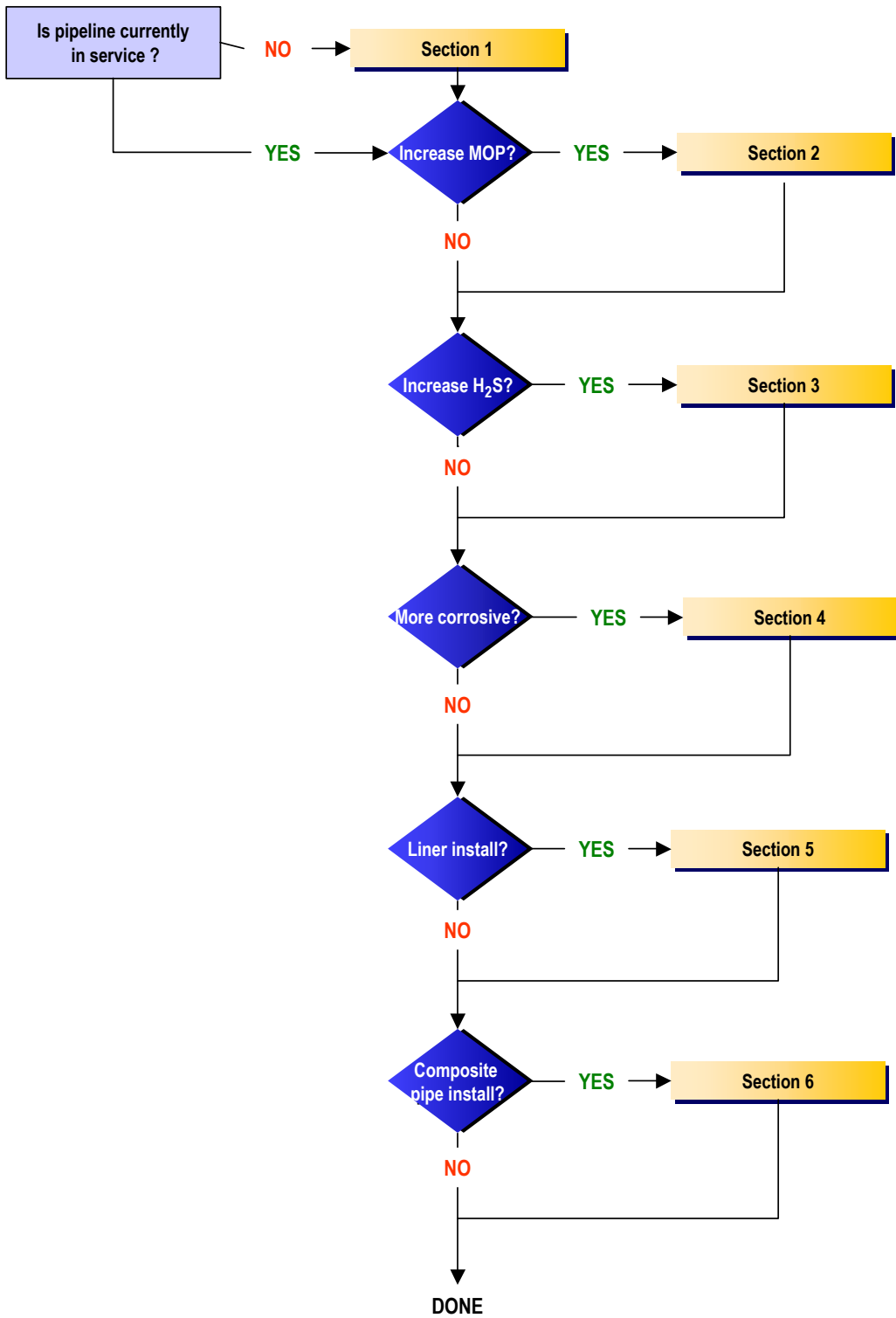
1.1.2 Pipeline external coating integrity has been assessed.

Yes means the applicant has demonstrated the integrity of the external coating and demonstrated that it is suitable or acceptable for the proposed service by assessing areas such as coating holidays or disbanded coating.

No means the applicant cannot demonstrate the integrity of the external coating. Attach an engineering assessment of the external condition of the pipeline validating its suitability or acceptability for the proposed service.

NA means the pipeline does not have an external coating. It also means the pipeline is nonmetallic.

- An engineering assessment of external coating should include investigative digs at locations that are representative of the worst-case condition of the pipeline.



1.2 Internal pipeline condition

1.2.1 Pipeline internal coating integrity has been assessed.

Yes means the applicant has demonstrated the integrity of the internal coating and that it is suitable or acceptable for the proposed service.

No means the applicant cannot demonstrate the integrity of the internal pipeline coating. Attach an engineering assessment of the internal pipeline coating condition validating its suitability or acceptability for the proposed service.

NA means the pipeline does not have an internal coating.

1.2.2 Pipeline internal condition has been assessed.

Yes means the applicant can demonstrate the integrity of the internal condition of the pipeline through techniques such as cutouts, line logging, radiography, or ultrasonic inspection and can demonstrate the suitability or acceptability of the pipeline for the proposed service.

No means the applicant cannot demonstrate the integrity of the internal condition of the pipeline through techniques such as those indicated in the Yes answer. Attach an engineering assessment outlining measures taken to demonstrate that the pipeline is suitable or acceptable for the proposed service.

1.3 Road or rail crossings: Sufficient wall thickness or suitability of the casing has been assessed.

Yes means the pipeline material is of sufficient thickness or is suitably cased.

No means the crossing is not in accordance with CSA Z662. Attach an engineering assessment indicating measures taken to make the pipeline suitable for service given the loading at the crossing.

NA means the pipeline does not have any road or rail crossings.

1.4 Class location has been assessed.

Yes means the class location has not changed while the pipeline was abandoned or discontinued.

No means the class location has changed. Attach supporting documentation addressing any additional requirements that the class change creates.

- While such documents as emergency response plans (ERPs) may be required, a note indicating the existence of updated versions of these documents is generally sufficient.
- Refer to CSA Z662, Section 4.3.2 Class Locations.

1.5 Hydrostatic test: The pipeline will be rehydrotested before use.

Yes means the applicant will rehydrotest the pipeline as outlined in CSA Z662. For gas >10 mol/kmol H₂S 1.4 x MOP, as outlined in Section 41(3) of the Pipeline Regulation .

No means the pipeline will not be rehydrotested. Attach an engineering assessment describing the measures that will be taken to demonstrate the integrity of the pipeline.

NA means hydrostatic retesting of the pipeline was completed.

- A legible copy of the original test chart is generally acceptable. Refer to CSA Z662, Section 8.6: Pressure Test Records.

1.6 Sour service requirements: The pipeline and its components satisfy sour service requirements.

Yes means that the pipeline meets current sour service requirements for resumption of abandoned pipeline.

No means changes were made to the design standards or modifications were made to the pipeline during the abandonment period. Attach an engineering assessment indicating that the pipeline and its components satisfy all of the current sour service requirements.

NA means the pipeline is not licensed for sour service substances.

- For resumption of discontinued pipelines, any modifications must meet the current CSA requirements for sour service.
- For pipe, fittings, flanges, and valves, refer to CSA Z245.1, CSA Z245.11, CSA 245.12, and CSA Z245.15 respectively.

1.7 Reason for discontinuation/abandonment: Applicant can demonstrate reason for discontinuation/abandonment.

Yes means the applicant has documented the history of the pipeline and the reasons for the discontinuation/abandonment, demonstrating that the pipeline was not discontinued or abandoned due to an integrity concern.

No means the applicant cannot demonstrate why the pipeline was discontinued/abandoned. Attach an engineering assessment describing the potential problems a pipeline operating in this environment could encounter.

1.8 Downstream effects: The pipeline MOP and H₂S level will be compatible with those of connecting pipelines.

Yes means the proposed pipeline H₂S content is the same as that of other connecting pipelines or that a flow-stopping device is in place to protect the pipeline from higher H₂S content. It also means the proposed pipeline MOP is the same as that of other connecting pipelines or that pressure control devices are in place to protect the pipeline from overpressuring.

No means the proposed pipeline H₂S content is not the same as that of other connecting pipelines and that a flow-stopping device is not in place to protect the pipeline from higher H₂S content. It also means the proposed pipeline MOP is not the same as that of other connecting pipelines or that pressure control devices are not in place to protect the pipeline from overpressuring. Attach an engineering assessment outlining the details for addressing the dissimilar H₂S content and or MOP.

NA means the service conditions of connecting upstream and downstream pipelines have not changed while the pipeline was discontinued or abandoned.

- Both the H₂S and MOP of connecting pipelines must be compatible.
- Check valves are flow-controlling devices only and cannot be used to control pressure.

2 INCREASE IN MAXIMUM OPERATING PRESSURE (MOP)

2.1 **Materials pressure rating: There is adequate pressure rating of all pipeline components.**

Yes means all pipeline, fittings, flanges, and valves are rated for the new MOP.

No means pipeline, fittings, flanges, and valves pressure rating is unknown or they are not adequately rated for the new MOP. Attach an engineering assessment outlining the measures that will be taken to address the deficiency.

2.2 **MOP is compatible with that of other connecting systems.**

Yes means the proposed pipeline MOP is the same as that of other connecting pipelines or that pressure-controlling devices are in place to protect the pipeline from overpressuring.

No means the MOPs are not the same and that pressure-controlling devices to protect the pipelines from overpressuring are absent. Attach an engineering assessment explaining the adequacy of the design.

- Check valves are flow-controlling devices only and cannot be used to control pressure.

2.3 **MOP increase will reclassify the pipeline as sour service.**

Yes means the increase in MOP raises the partial pressure of H₂S in the gas phase to the point where sour service materials are required.

No means the MOP increase does not raise the partial pressure of H₂S in the gas phase to the point where sour service materials are required. Attach supporting calculations and gas analysis.

N/A means the substance does not contain H₂S in the gas phase.

- Refer to Section 3: Change of Service—H₂S Content Increase.
- MOP increase may increase the release volume and therefore require changes to the EPZ or ERP.

2.4 Notch toughness requirements have been met, if steel pipe.

Yes means proven notch toughness requirements are satisfied.

No means proven notch toughness requirements are not satisfied. Attach an engineering assessment indicating measures that will be taken to address the deficiency.

- Refer to CSA Z662, Section 5.2.2: Notch Toughness Requirements—Steel Pipe.
- Proven notch toughness is not required where the operating stress is ≤ 50 MPa or pipe OD is ≤ 114.3 mm or with a nominal wall thickness of ≤ 6.0 mm.

2.5 Hydrotesting requirements: The applicant will rehydrotest the pipeline.

Yes means the applicant will hydrotest the pipeline to 1.4 x MOP for gas pipelines >10 mol/kmol H₂S or in accordance with the requirements of CSA Z662 for all other pipelines.

No means the applicant will not hydrotest the pipeline to 1.4 x MOP for gas pipelines >10 mol/kmol H₂S or in accordance with the requirements of CSA Z662 for all other pipelines. Attach an engineering assessment with rationale and supporting documents.

NA means the increase in MOP does not result in the need to rehydrotest. Attach an engineering assessment with rationale and supporting documents.

- If hydrotesting results in a test pressure that exceeds 100% SMYS, see requirements in Section 39(1) of the Pipeline Regulation.
- Refer to CSA Z662, Section 8.2: Strength and Leak Tests.
- Consideration must be given to
 - water availability/disposal and class location, and
 - public safety during the test, including traffic and roadways in the vicinity of the test section.

3 CHANGE OF SERVICE: H₂S CONTENT INCREASE

3.1 Nonsour service gas to gas >10 mol/kmol, or sour service to gas >10 mol/kmol

3.1.1 Minimum distance (setback) requirements separating pipelines from residential and other developments, based on the new H₂S release volume, are met.

Yes means the minimum distance requirements between facilities and developments are satisfied.

No means the minimum distance requirements between facilities and developments are not satisfied. Attach a description of the variance and the proposed measures to be taken to address the variance, such as reducing the level of sour gas in the pipeline.

- Refer to Section 6.9.2: Setback Requirements in *Guide 56*.

3.1.2 Pipeline will be rehydrotested to 1.4 x MOP.

Yes means the applicant will hydrotest the pipeline to 1.4 x MOP for gas pipelines >10 mol/kmol.

No means the applicant will not hydrotest the pipeline to 1.4 x MOP for gas pipelines >10 mol/kmol. Attach an engineering assessment outlining the rationale for not performing the hydrotest.

N/A means records exist to demonstrate that the pipeline has previously been qualified for the MOP.

- MOP refers to the MOP of the pipeline for the new H₂S level. In some cases an increase in H₂S is accompanied by a reduction in MOP. If the original hydrotest pressure was greater than 1.4 x new MOP, a hydrotest may not be required.
- A legible copy of the original strip chart is generally acceptable. Refer to CSA Z662 for record-keeping requirements.
- Consideration must be given to water availability/disposal and public safety during the test, including traffic and roadways in the vicinity of the test section.

3.1.3 Stress calculation: Design stress limitations are met.

- For gas pipelines >10 mol/kmol, the stress level does not exceed 60% SMYS for those located underground or 50% SMYS for those located at the surface.
- See the additional requirement in Section 13: Stress level limitations in the Pipeline Regulation.

3.1.4 Sour service requirements: The pipeline and its components satisfy sour service requirements.

Yes means all pipelines that were not previously in sour service meet current sour service requirements and any modifications meet current sour service requirements.

No means an engineering assessment was used to demonstrate that sour service requirements have been met. Attach the engineering assessment.

- Pipe, fittings, flanges, and valves comply with CSA Z245.1, CSA Z245.11, CSA 245.12, and CSA Z245.15.
- For non-CSA pipe, a mill certification indicating dual stamp or a letter of compliance from the manufacturer is required.

3.1.5 Downstream effects: The pipeline H₂S level will be compatible with those of connecting pipelines.

Yes means the proposed pipeline H₂S content is the same as those of other connecting pipelines or that a flow-stopping device is in place to protect the pipeline from higher H₂S content.

No means the proposed pipeline H₂S content is not the same as those of other connecting pipelines and that a flow-stopping device is not in place to protect the pipeline from higher H₂S content. Attach an engineering assessment outlining the steps taken to protect the connecting pipelines.

- Both H₂S and MOP of connecting pipelines must be compatible.

3.1.6 Corrosion mitigation, monitoring, evaluation, and record-keeping programs are in place prior to operation under new service conditions.

- The applicant must demonstrate that its corrosion program provides effective mitigation, monitoring, evaluation, and record keeping prior to operation under the proposed service conditions. Attach an engineering assessment.

4 SUBSTANCE CHANGE FROM LESS TO MORE CORROSIVE (e.g., change of service from oil effluent to produced salt water; increases in H₂S content are covered in Section 3)

4.1 Downstream effects

- The pipeline operating conditions will be compatible with those of connecting upstream and downstream pipelines.

4.2 Corrosion mitigation, monitoring, evaluation and record-keeping programs are in place prior to operation under more corrosive conditions.

Yes means the applicant has validated that its corrosion program is suitable for the new service conditions.

No means the applicant has not validated that its corrosion program is suitable for the new service conditions. Attach an engineering assessment.

- The applicant must demonstrate that its corrosion program provides for effective mitigation, monitoring, evaluation, and record keeping.

4.3 Flow analysis has been completed to determine flow regime.

Yes means the flow regime for the system is known and its effects on corrosion rate are understood.

No means the flow regime is unknown. Attach an engineering assessment explaining how the corrosion mitigation, monitoring, evaluation, and record keeping plan described in question 4.2 will be effective for an unknown flow regime.

5 LINER INSTALLATION

5.1 Freestanding liner

5.1.1 Requirements for freestanding liners

- The carrier pipe, or liner, is the pressure-containing device.
- Barlow's formula cannot be used to calculate the stress level of composite, fibreglass, or polyvinyl chloride pipe material. On Schedule 3.1 of *Guide 56*, leave the stress field blank for the outer casing pipe.
- The rated working pressure must be greater than or equal to the licensed MOP.
- Strength and leak testing required in accordance with CSA Z662. Refer to CSA Z662, Section 8.2, for steel pipe, Section 13 for fiber-reinforced composite pipe, and Section 12 for polyethylene pipe.
- When installing a freestanding liner in an abandoned pipeline, the ability to demonstrate the integrity of the abandoned or discontinued carrier pipe is not required.
- Attach a product specification sheet for the grade of liner material being installed.
- Thermoset composite materials are not considered experimental, and the EUB may issue a licence with conditions depending on the established performance of the material.
- Thermoplastic composite materials are and will remain experimental, and the EUB will issue a licence with conditions.
- The rated working pressure must be greater than or equal to the licensed MOP.
- For natural gas service, the following restrictions are imposed:
 - 1) Pipeline is installed in Class 1 locations only.
 - 2) H₂S content must not be greater than 10 mol/kmol.
 - 3) The MOP is 4960 kPa (PN50), regardless of composite pipe pressure rating.

5.1.2 Downstream effects: The pipeline MOP and H₂S level will be compatible with those of connecting pipelines.

Yes means the proposed pipeline H₂S content is the same as that of other connecting pipelines or that a flow-stopping device is in place to protect the pipeline from higher H₂S content. It also means the proposed pipeline MOP is the same as that of other connecting pipelines or that pressure control devices are in place to protect the pipeline from overpressuring.

No means the proposed pipeline H₂S content is not the same as that of other connecting pipelines and that a flow-stopping device is not in place to protect the pipeline from higher H₂S content. It also means the proposed pipeline MOP is not the same as that of other connecting pipelines or that pressure control devices are not in place to protect the

pipeline from overpressuring. Attach an engineering assessment outlining the details for addressing the dissimilar H₂S content and/or MOP.

NA means there are no connecting pipelines.

5.2 Tight liner

5.2.1 Requirements for tight liners

- Calculate the stress level based on the outer casing pipe OD and wall thickness.
- Attach a product specification sheet for the grade of liner material being installed.
- Strength and leak testing required in accordance with CSA Z662, Section 12.
- While tight liners are not pressure-containing devices and therefore do not have a maximum restriction on MOP relative to their normal maximum rated pressure, the outer casing pipe and its components must be suitable for the licensed MOP.
- While tight liners do not have a maximum restriction on H₂S content, the outer casing pipe and its components must be suitable for service for the licensed H₂S content.
- When installing a tight liner in an abandoned pipeline, the ability to demonstrate the integrity of the abandoned or discontinued carrier pipe is required (see Section 1).

5.2.2 Downstream effects: The pipeline MOP and H₂S level will be compatible with those of connecting pipelines.

Yes means the proposed pipeline H₂S content is the same as that of other connecting pipelines or that a flow-stopping device is in place to protect the pipeline from higher H₂S content. It also means the proposed pipeline MOP is the same as that of other connecting pipelines or that pressure control devices are in place to protect the pipeline from overpressuring.

No means the proposed pipeline H₂S content is not the same as that of other connecting pipelines and that a flow-stopping device is not in place to protect the pipeline from higher H₂S content. It also means the proposed pipeline MOP is not the same as that of other connecting pipelines or that pressure control devices are not in place to protect the pipeline from overpressuring. Attach an engineering assessment outlining the details for addressing the dissimilar H₂S content and/or MOP.

NA means there are no connecting pipelines.

6 STANDALONE COMPOSITE PIPELINE INSTALLATION

6.1 Pipeline liner material rated MOP is greater than licensed MOP.

- Include a product specification sheet for the grade of liner material being installed.
- The rated working pressure must be greater than or equal to the licensed MOP.
- Barlow's formula cannot be used to calculate the stress level of composite, fibreglass, or polyvinyl chloride pipe material. Leave the stress field blank for these materials.

- Thermoset composite materials are not considered experimental, and the EUB may issue a licence with conditions depending on the established performance of the material..
- Thermoplastic composite materials are and will remain experimental, and the EUB will issue a licence with conditions.

6.2 Natural gas service restrictions are satisfied.

Yes means all three of the following conditions are satisfied:

- 1) Pipeline is installed in Class 1 locations only.
- 2) H₂S content is not greater than 10 mol/kmol.
- 3) The MOP is 4960 kPa (PN50), regardless of composite pipe pressure rating.

No means any or all of the natural gas service restrictions listed above are not satisfied. Attach an engineering assessment outlining proposed mitigation plan.

NA means the pipeline does not transport natural gas.

6.3 Downstream effects: The pipeline MOP and H₂S level will be compatible with those of connecting pipelines.

Yes means the proposed pipeline H₂S content is the same as that of other connecting pipelines or that a flow-stopping device is in place to protect the pipeline from higher H₂S content. It also means the proposed pipeline MOP is the same as that of other connecting pipelines or that pressure control devices are in place to protect the pipeline from overpressuring.

No means the proposed pipeline H₂S content is not the same as that of other connecting pipelines and that a flow-stopping device is not in place to protect the pipeline from higher H₂S content. It also means the proposed pipeline MOP is not the same as that of other connecting pipelines or that pressure control devices are not in place to protect the pipeline from overpressuring. Attach an engineering assessment outlining the details for addressing the dissimilar H₂S content and/or MOP.

NA means there are no connecting pipelines.