

Checklist for Alternative Storage Applications

December 2019

Companies may submit alternative storage applications. We have suggested below information to include in the following applications:

- a general application for alternative storage (see Part B),
- an application for an aboveground synthetically-lined wall storage system (AWSS) on an alternative AER-licensed site to what is set out in *Directive 055–Addendum* (see Part C), and
- an application for an aboveground reusable bladder within a structural frame (see Part D). Acceptable alternatives to *D055–Addendum* requirements for a bladder are also provided in Part D.

Part A contains information that must be included in any of the above applications.

Because applications for alternative storage differ in complexity depending on how much they deviate from requirements, this document provides general guidance only; licensees must include sufficient information for the AER to render a decision.

Licensees must obtain approval **before** any construction or associated operations begin. For clarification, contact Directive055@aer.ca.

Part A Licensee Information (Required)

- Company name and BA code
- Contact name
- Contact information (email and phone number)

Application for:

- General alternative storage
- AWSS on an alternative site
- Aboveground reusable bladder with structural frame system

Part B Applying for Alternative Storage

- Facility id or well licence number of the proposed location for the alternative storage.
- Legal land description for the site of the proposed alternative storage.
- Description of the alternative storage system.
- Identification of the deviations from *Directive 055* requirements.

- Justification for the request for any deviation from the requirements.
- Description of the measures that will be in place to ensure that the deviations will achieve the same outcomes as the requirements (i.e., design, operational, or monitoring—or a combination of these—that provide the equivalent level of environmental protection and safety as in the directive).
- Requested expiry date of alternative storage approval.

If applicable, provide the following:

- Tank farm diagram (i.e., engineering diagram with appropriate cross-sections).

This diagram should illustrate the primary and secondary containment, the slope of the tank farm, the leak detection area (e.g., low point and permeable layers), and the spacing between tanks and dike wall. Refer to section 5.3.2.1 of *Directive 055* for secondary containment details that should be illustrated in the diagram.

- Diagram of other containment device (e.g. bulk pad, underground storage tank, or alternative containment device).

Depending on the containment device, the diagram should illustrate the primary and secondary containment, slope of the working surface, leachate collection system, and leak detection system (including interstitial space and leak detection ports).

Part C Applying for an AWSS on an Alternative Site

- The well licence number for the hydraulic fracturing operations.
- The legal land description and AER licence number where the AWSS would be situated.
- If applying for more than one AWSS at the location, the number and capacity of each AWSS.
- Area diagram (plot plan, site sketch, etc.) clearly identifying the location of the AWSS and how it will be isolated from all existing equipment, buildings, roads, and other infrastructure.
- Length of time the AWSS will be used. If it is to exceed three months, describe how requirement 22 in *Directive 055–Addendum*, section 2.2, will be met.
- Confirmation that requirements 1 through 24 in section 2.2 of the addendum will be met.
- Discussion of how the site conditions will be assessed before and after use of the AWSS and how any impacts from its use will be identified (e.g., pre- and post-sampling).
- Confirmation of land owner consent.
- Requested expiry date of alternative storage approval.

Part D Applying for an Aboveground Reusable Bladder Within a Structural Frame (Bladder/Frame System)

- Trademark name of bladder/frame system and supplier.
- Facility id or well licence number, including legal land description.
- A map of the area of use, including proposed boundaries.
- Requested expiry date of alternative storage approval.

Deviations

For a bladder/frame system, certain requirements in *Directive 055–Addendum* typically would not apply. The following are acceptable alternatives:

- The wall system may be constructed of a composite; alternative to section 2.2(3).
- The bladder covers the ground floor of the wall system, extends up the wall, and is secured onto the inside of the wall while not damaging the bladder; alternative to section 2.2(7).
- The wall and bladder are penetrated with header assembly; alternative to section 2.2(11).
- A minimum freeboard is not required; alternative to section 2.2(21).
- The bladder is reusable; alternative to section 2.2(24).

If there are any additional deviations from the requirements:

- Identification of the deviations from *Directive 055*.
- Justification for the request to deviate from the requirements.
- Description of the measures that will be in place to ensure that the deviations will achieve the same outcomes as the requirements (i.e., design, operational, or monitoring measures—or a combination of these—that provide the equivalent level of environmental protection and safety).

Note: The notification process will also differ. If your application is successful, we will set out in the approval the alternative notification process to section 2.2(25) in the addendum.

Things to Consider

The following are a list of things to consider when determining what to include in your application for a bladder/frame system. The questions are derived from requirements in *Directive 055–Addendum*.

If the answer is “no” to any of the questions, additional information should be included in your application.

If the answer is “yes,” we may request supporting documentation during our review of your application.

Volume (*Directive 055–Addendum*, section 2.2(2))

- Will the volume of each bladder/frame system be less than 3000 m³?
- Will the total volume of all the bladder/frame systems at the site be less than 6000 m³?

Certification (*Directive 055–Addendum*, section 2.2(3))

- Is there a documented QA/QC program for the structural frame?
- Has the design of the structural frame been certified by a professional engineer?
- Has the design of the bladder/frame system been certified by a professional engineer?

Reusable Bladder (*Directive 055–Addendum*, section 2.2(4))

- Provide a description of the bladder material.
- What are the proposed fluids to be stored?
- Is the bladder material chemically and environmentally compatible for storing fluids?
- What is the anticipated service life for this type of bladder?
- Will the types of fluids stored and associated durations be documented?

QA/QC (*Directive 055–Addendum*, section 2.2(5))

- Is there a documented manufacturer’s QA/QC program for the bladder material?
- Is there a documented QA/QC program for fabrication of the bladder?

Site preparation (*Directive 055–Addendum*, section 2.2(6))

- Will the supplier of the bladder/frame system sign off on the subgrade preparation?

Installation (*Directive 055–Addendum*, section 2.2(8))

- Is there a documented installation QA/QC program?
- Are the installers certified?
- Will the supplier of the bladder/frame system sign off on its installation?
- Will the operator be trained to use the system?

Integrity (*Directive 055–Addendum*, section 2.2(9))

- Are there protocols to verify bladder integrity for repeated use?

Duration of Use (*Directive 055–Addendum*, section 2.2(22))

- Will the system be on site for less than 3 months?
- Will the system be on site for less than one year?

Operational Considerations (*Directive 055–Addendum*, section 2.2(23))

- Will there be inspection protocols?
- Will there be lockouts on the inlet and outlet?
- Will there be controls in place to prevent overfilling?
- Will there be controls in place to ensure proper venting?