



To: Neil Angus  
Devens Enterprise Commission

Date: December 5, 2025

Memorandum

Project #: 14867.07

From: Curtis Quitzau

Re: CFS-4 Thermal FLiBe Loop Facility Responses to Questions

On behalf of the Project Team, we are submitting the attached responses to the remaining issues to be addressed for CFS-4 Level 2 permit application, as received on Wednesday, November 26, 2025.

## 1. Clarification of construction phasing approach for CFS-3 and CFS-4

CFS-4 is scheduled to start construction in spring 2026, coinciding with the expected substantial completion of CFS-2.

CFS-3 is scheduled to start in spring 2027, coinciding with the substantial completion of CFS-4, subject to normal construction contingencies.

Additional detail explaining how and why this phased approach will be implemented and how parking will be adequately managed will be forthcoming with responses to CFS-3 comments.

## 2. Design Review Letter from MassDevelopment

We have been assured that a design review letter from MassDevelopment is in progress and will be submitted to the DEC upon completion.

## 3. Details for fencing, railings, gates, ramps, and safety measures around FLiBe. Note that the overhead door will require bollard to prevent vehicles from entering building, or will require a floor drain and sewer connection if vehicles will be entering/exiting.

1. The CFS-4 site area is located within the non-public portion of the CFS campus. Access to the general site area will be limited to authorized vehicles and personnel permitted inside the CFS Campus.
2. Security fencing will be provided around the North and South Equipment pads to prevent pedestrians and vehicles already within the CFS campus from accessing the exterior equipment spaces. The security fence will be chain link or wire mesh and will be 8'-0" tall. The fencing and guard rails where required will also provide protection between elevation changes between the pads and surrounding grade.
3. Secured sliding vehicular gates and swing pedestrian gates will be provided to limit access only to personnel and vehicles authorized to access the main FLiBe building and outdoor equipment areas.
4. All exterior personnel doors into the main FLiBe building will be secured by controlled access hardware allowing access only to authorized personnel. The main FLiBe space will typically be accessed through a PPE donning area and airlock and exited through an airlock and PPE doffing area. Doors will also be provided from the main FLiBe space directly to the exterior for emergency egress only. These doors will not permit entry directly from the exterior during normal operations.

5. Secured Overhead doors will be provided to facilitate installation, servicing, and replacement of FLiBe process equipment when required. These doors will remain closed and always secured during normal operations.

**4. Vegetated roof information should be included as well (final details can be conditioned but please provide calculations for required area and type of green roof structure. It should be 30% of the total usable roof space for CFS-4 – that includes the Annex building)**

See attached roof plan analysis showing total “usable” roof areas for vegetated roof for CFS-4 as well as how the 30% required vegetated area can be provided on the Annex Building Roof. The type of green roof system will be a modular system like that provided by Live Roof.

**5. Opportunities to further reduce lighting levels below 2.0 footcandles**

We have shown that the facility will not be visible from the nearest existing or planned residential properties, and we have provided a lighting strategy and revised photometric plan that significantly reduce light levels. Because the CFS-4 facility is currently designed only to a permitting level of detail, equipment types and their exact locations on the pads may change during the detailed design phase, which could affect lighting. The design team understands your preference for reduced lighting and will further lower light levels where appropriate as the design is refined.

A few notes about the previous Photometrics plan provided:

- The Photometrics are showing footcandle levels for fixtures at full output, this does not include the controls strategy to further reduce footcandle levels when non-occupied or after hours.
- Current layout meets the requirements for .5 footcandles minimum for all access road/parking.
- Perimeter pole fixtures include internal louver to control backlight spill and minimize direct view from abutters.
- Higher light levels where type L7 fixtures are shown are technically “under canopy” so will not contribute to light trespass/pollution.

**6. Hazardous material handling and storage protocols**

A campus-wide Hazardous Waste Contingency Plan has been developed internally by CFS in partnership with Triumvirate Environmental for CFS-1 that is extending inclusion to CFS-2, and ultimately CFS-3 and CFS-4. The Hazardous Waste Contingency Plan is appended to this memo.

**7. Re: Air permit: explore all options to further reduce emissions and reuse for waste heat, including the feasibility of carbon capture and any other options that would reduce the level of emissions from these processes.**

**Waste heat reuse** - The proposed burner system that CFS has specified is designed for a heat recovery via two in-line air preheater blocks that significantly reduces the heat load required. Further heat recovery is not practical or cost effective as the CFS-4 facility waste heat will be inconsistently generated due to the R&D nature of the operation and most uses of waste heat require a steady heat source.

**Emissions** - The burner system utilizes Best Available Control Technology (BACT) to control NO<sub>x</sub> emissions and CO emissions, which are the two primary pollutants from natural gas burner. There are no commercially available systems to further reduce these emissions. Due to the “clean” nature of natural gas and the burners’ efficiency, emissions from other critical pollutants (particulate matter, lead, SO<sub>2</sub>, and ozone) are low.

CFS’s approach to limiting emissions is actually limiting facility use to only what is absolutely necessary to meet our R&D mission. They are also incentivized to take this approach due to the significant operational expense associated with their significant natural gas consumption. Therefore, their general approach to reduce facility emissions is not through some active means to utilize or scrub output but instead to minimize production to only what is necessary to meet their goals.

**Carbon capture** - Carbon capture and storage (CCS) is a chemical process that requires a complex recovery system. Due to this large capital cost, CCS is only being commercially considered at large scale, long term, continuous operations (much larger CO<sub>2</sub> emissions than the proposed burners). The overall emissions from CCS (due to the electricity required for the process) would likely exceed the carbon captured. Finally, to the best of their knowledge there is no nearby use for the carbon captured and no nearby location for carbon storage.

**8. Please confirm that there will be no visible emissions from the stack or other equipment year-round. If there is the potential for visible plumes during certain atmospheric conditions, are there steps that can be taken to reduce/eliminate?**

The only visible steam plume could be from the stack exhaust, as any moisture in the hot exhaust mixes with the cooler ambient air condensing the vapor. This natural phenomenon is most noticeable in colder weather when the vapor condenses more quickly. Please note the lesser steam plume from the exhaust stack should not be confused with a typically large steam vapor plume from a cooling tower. CFS is not using a cooling tower – they are using air cooled condensers which do not have any plume since it is a closed process.

**9. Campus-wide Sound study**

A campus-wide Sound Study is in progress by Cavanaugh Tocci and will be submitted to the DEC upon completion.

**10. Details for proposed limits of work and site plan details for work on Oak parcel (grading, stormwater, surface treatments, stabilization, utilities/lighting?)**

Oak Street will be used as swing space throughout the duration of all construction activities, and it is CFS’s intent to utilize this space for temporary employee parking, contractor parking, soils borrow and stockpiling of excess soils, and general laydown space as may be needed by the contractors.

- All trees and vegetation will be cleared and grubbed inside the limits of disturbance (LOD) shown on the accompanying plan exhibit.
- Topsoil will be stripped and stockpiled.
- Subsoils will be leveled and compacted.
- Abandoned water, electric and gas utilities within the LOD will be removed.

- Drainage infrastructure will remain unless needed to be removed for stockpiling.
- Parking spaces will be delineated with paint markings similar to other temporary lots on the campus. CFS will discontinue employee parking along the entry drive during soils hauling operations.
- Lighting will be maintained along the entry drive and added as needed for the parking area(s).

When Oak St is no longer needed at the end of all construction, CFS will dress the disturbed areas with topsoil and seed it with a wild meadow conservation seed mix if there are no immediate plans for another development phase on the campus. CFS intends to begin preparing the space as soon as weather permits during Q1 of 2026 given the importance of Oak St for immediate temporary parking.