



photo credit: BNL

IU CRP Factory Schedule Update

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Why go through the Exercise

- Identify bottlenecks contributing to delays
 - ★ Focus on actionable areas within our control
 - ★ Address challenges well ahead of the PRR to maintain progress
 - ★ Adding more realism to the schedule

- Disclaimer:
 - ★ The schedule is not exhaustive but serves as a working baseline
 - ★ Feedback welcome to improve realism and address overlooked areas
 - ★ Also, key focus is on factory-related tasks – excludes:
 - ▶ Impact of a few project-side delays **but does include the impact of the lack of an SOW, which is slowing down the engineering hire at IU**

Why go through the Exercise

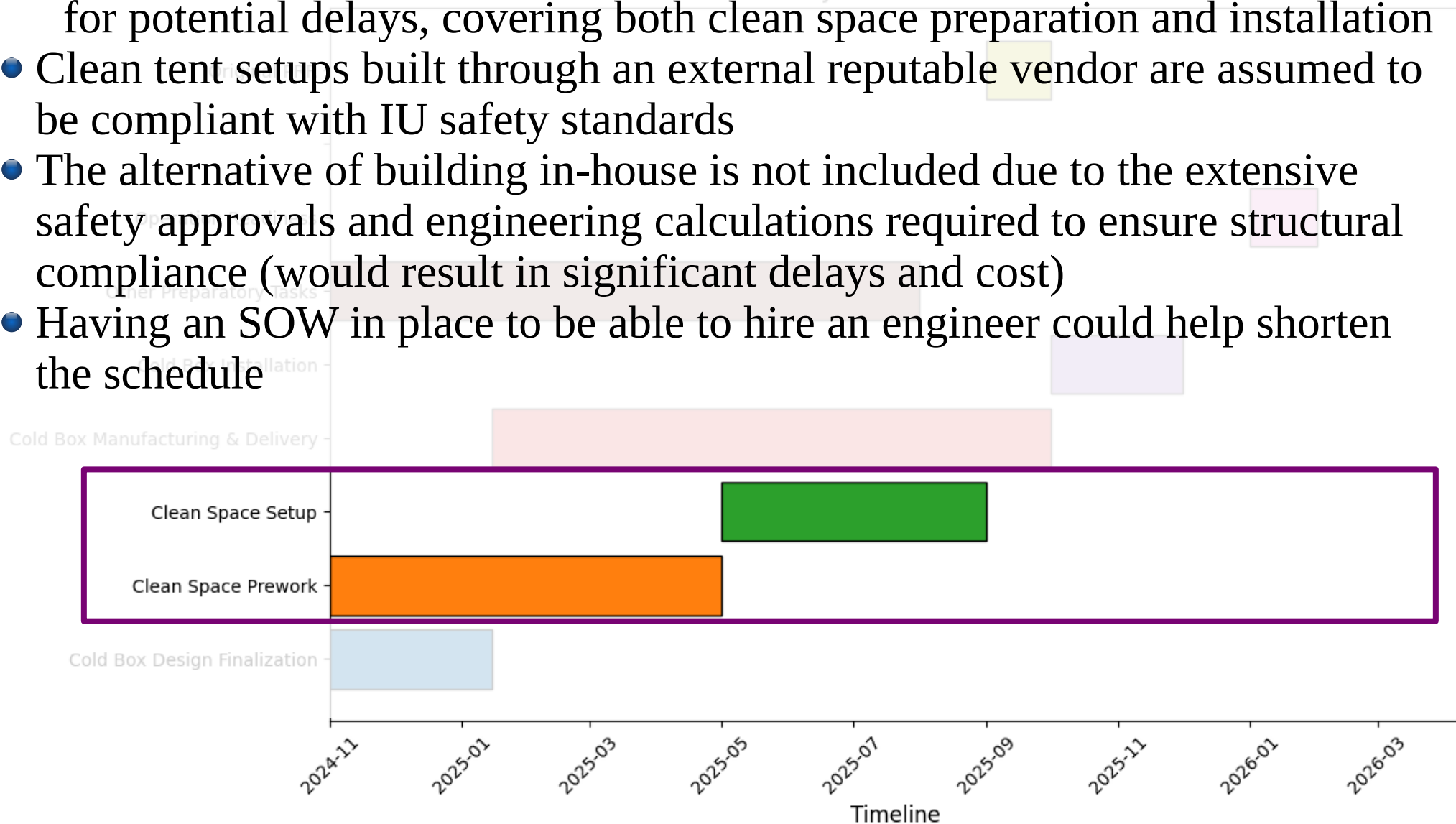
- Identify bottlenecks contributing to delays
 - ★ Focus on actionable areas within our control
 - ★ Address challenges well ahead of the PRR to maintain progress
 - ★ Overall, the intent is to focus on what we can control, provide clarity on IU-specific progress, and address actionable areas while acknowledging broader project-level uncertainties
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- there are definitely assumptions and dependencies in place...

Building the Schedule: Assumptions & Dependencies

- Clean space pre-work and installations:
 - ★ The primary area of progress to date
 - ★ Critical for preparing the space for operational readiness
 - ★ High level of certainty with minimal assumptions compared to other tasks
- Cold box design and cascading impacts:
 - ★ Included are design development, manufacturing, delivery, and installation
 - ★ **Assumptions:** each factory responsible for its own cold box design
 - ★ **Rationale:** adopting this assumption reduces a lot of the uncertainty & allows us to develop an actionable schedule for IU
 - ★ **Key dependency:** reliance on an SOW and an engineering hire is critical to support this – soln: active consultation with cryogenics experts at other institutions (adds to the schedule)
- IU capital planning dependencies:
 - ★ Effective engagement overall, particularly in addressing engineering resource limitations from the delayed SOW
 - ★ **Challenges:** cold box design uncertainties impacting momentum & limited availability due to competing priorities from other projects

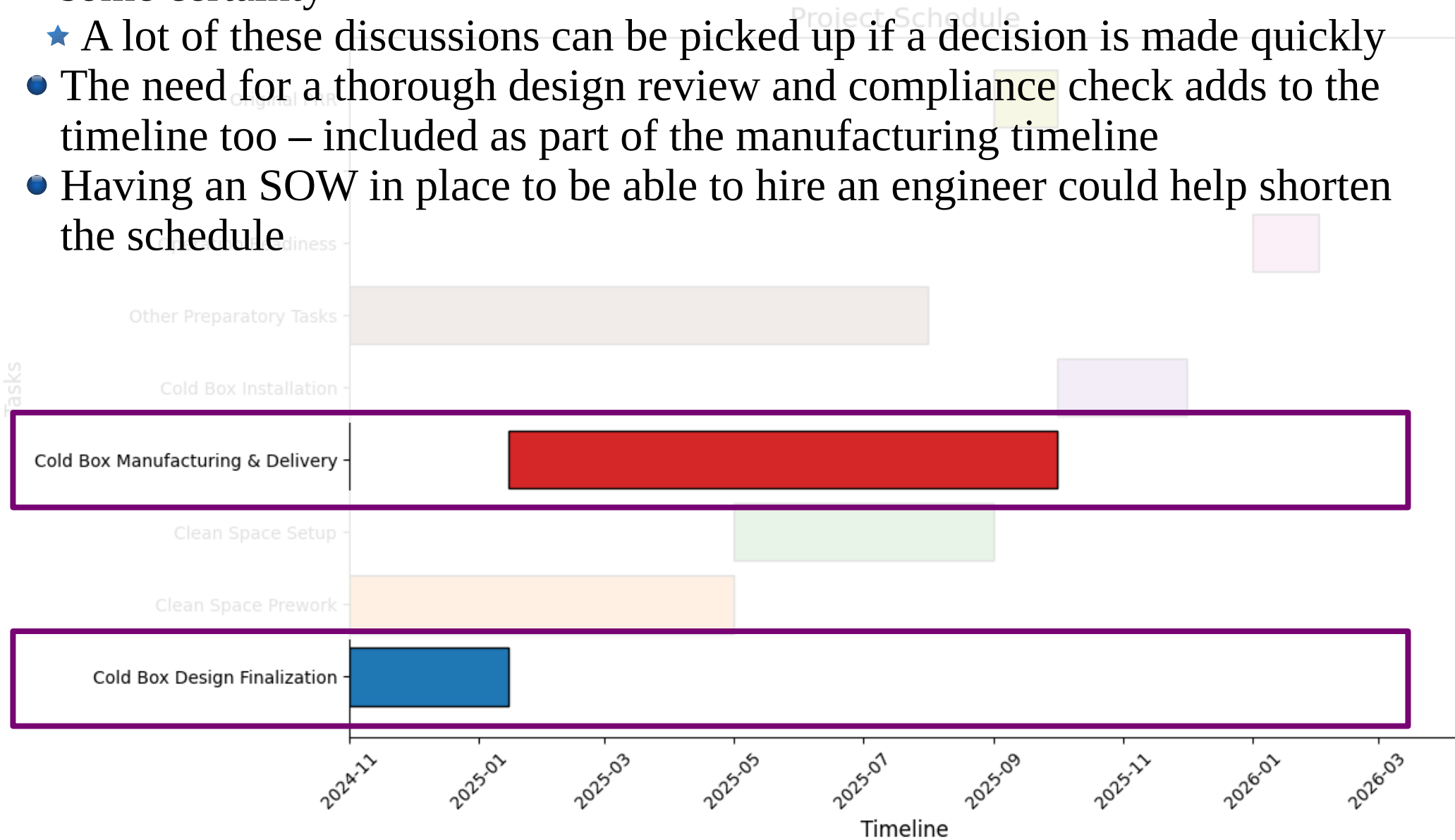
Tasks - Clean Space Prep Work

- Discussions with IU Capital Planning well underway
- Communicated a deadline of May 1st for the clean space to be ready
 - ★ An additional ~3 months of buffer is included in the schedule to account for potential delays, covering both clean space preparation and installation
- Clean tent setups built through an external reputable vendor are assumed to be compliant with IU safety standards
- The alternative of building in-house is not included due to the extensive safety approvals and engineering calculations required to ensure structural compliance (would result in significant delays and cost)
- Having an SOW in place to be able to hire an engineer could help shorten the schedule



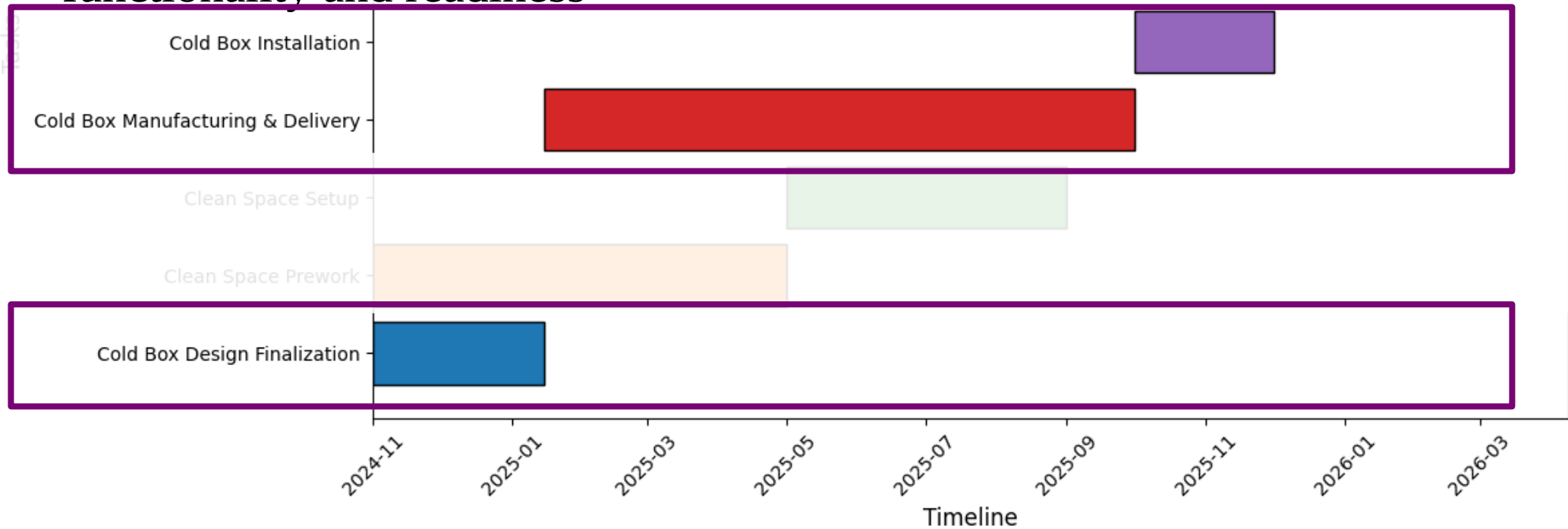
Tasks - Coldbox

- An assumption was made that each factory would finalize its own cold box design; this shift does add additional time at the factory level but also adds some certainty
- ★ A lot of these discussions can be picked up if a decision is made quickly
- The need for a thorough design review and compliance check adds to the timeline too – included as part of the manufacturing timeline
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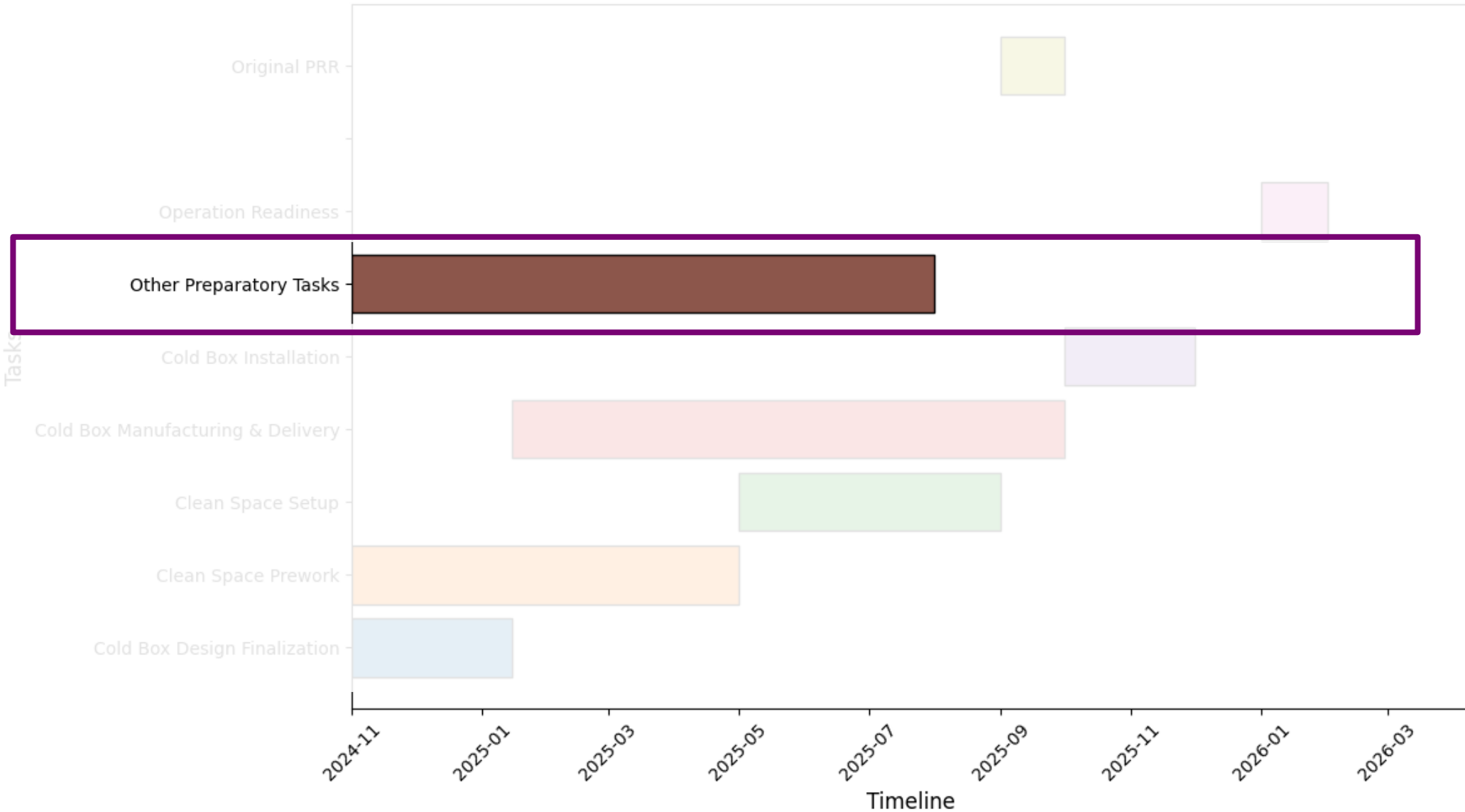
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- The need for a thorough design review and compliance check adds to the timeline too – included as part of the manufacturing timeline
- Having an SOW in place to be able to hire an engineer could help shorten the schedule
- Cold box installation includes system checks and validation to ensure proper functionality and readiness



Tasks - Other Space Preparations

- Other IU space preparatory tasks—such as routing transfer lines (e.g., drilling holes in walls) and installing protective barriers around the main power supply unit—are planned to proceed in parallel

Project Schedule



Timeline Tasks - ALL Tasks & PRR Impact

- Operation readiness includes final system testing, issue mitigation, and buffer time to address any challenges prior to the PRR

Project Schedule

