



Comments

○ General comments

- Overall, the project seems well thought out and conservative. There's every reason to believe it will succeed.
- The construction and test schedule appear to very optimistic, particularly the two month beam to beam window. More detail and contingency needs to be built in.
- Given the flexibility in the location of the installation window within the long NOvA shutdown, don't rush the start of the installation. Take time to get both the device and the installation/commissioning plan right.
- Formulate a solid plan for both radiation and electrical safety, with specific requirements for obtaining the required sign-offs, as part of the general plan to obtain the necessary approval for running.



Comments (cont'd)

○ RFQ

- Understand the effect of tuner
- Establish tolerances on RF phase and amplitude.
- Consider whether LLRF system is adequate.

○ More test stand measurements

- We recommend using slit emittance probes to measure emittance at end of LEBT
- We strongly recommend that the test stand measurements be expanded to include the MEBT, at least the transverse properties.
- Should seriously consider doing tests with the buncher to get longitudinal parameters.
- Clearly define acceptability requirements, including reliability.
- This could include establishing a procedure to run test stand overnight.
- Develop more detailed test and qualification schedule.

○ Instrumentation

- Fix emittance probe at end of tank 1



Comments (cont'd)

○ Potential Show Stoppers

- Performance of Einzel lens/chopper system
 - Have design reviewed by independent electrical experts.
 - Firmly establish acceptance criteria
 - Formulate fall back plan
 - Investigate effect of backscattered beam on beam neutralization. This might lead to variable beam parameters at beginning of pulse.
 - Possible intermediate interaction with DTI in performance of switches.

○ Other recommendations

- Consider different source designs for the future (eg, RF driven bucket source).