

PIP Laser Notcher System Review

November 14-15, 2016

Booster requires a 60 nsec notch in the beam at the extraction time to accommodate the rise time of the extraction kickers. Currently this is accomplished in the Booster ring at injection energy. This accounts for approximately 30% of Booster beam loss. The Proton Improvement Plan is pursuing an alternative design based on laser notching at 750 keV, to move the notch creation system outside the ring.

The purpose of this review is to evaluate the technical design adopted during this R&D task.

We would like the committee to address the following questions:

- 1) Is the design of the laser system likely to meet the neutralization requirements?
- 2) Are our plans for increasing the pulse energy during the shutdown likely to succeed?
- 3) Is our planned instrumentation sufficient to allow reliable remote operation?
- 4) Does any part of the system raise reliability concerns – include spare/requirements/concerns?

The final report is expected to be submitted to the chair 2-3 weeks after the completion of the review.

LN Task Manager	David Johnson	dej@fnal.gov
LN Team member	Todd Johnson	tjohnson@fnal.gov
PIP Project Manager	William Pellico	pellico@fnal.gov
Chairperson	Fernanda G. Garcia	fgarcia@fnal.gov
Reviewer	Yun Liu	liuy2@ornl.gov
Reviewer	Russel Wilcox	rbwilcox@lbl.gov

Preliminary agenda:

PIP Laser Notcher External Review - November 14-15, 2016

Start Duration End Speaker Topic
Monday, November 14,
2016

Morning Session - AD/Dungeon

9:00	0:15	9:15	B. Pellico	Welcome / Charge / Motivation
9:15	0:45	10:00	D. Johnson	Overall Design of Laser Notcher System
10:00	0:25	10:25	Todd Johnson	Free space and beam shaping
10:25	0:45	11:10	D. Johnson	Pulse formation and fiber system
11:10	0:15	11:25		<i>Coffee Break</i>
11:25	0:35	12:00	All	<i>Discussion</i>
12:00	1:00	13:00		<i>Lunch</i>

Afternoon Session - AD/Huddle

13:00	0:30	13:30	D. Johnson	July Commissioning
13:30	0:25	13:55	All	<i>Discussion</i>
13:55	0:25	14:20	Todd Johnson	<i>Laser Instrumentation</i>
14:20	0:20	14:40	All	<i>Discussion</i>
14:40	0:20	15:00		<i>Coffee Break</i>

Laboratory Session

15:00	1:30	16:30		Lab work
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Executive Session - AD/Huddle

16:30	1:30	18:00		<i>Reviewers Private Meeting - Question to reviewees</i>
18:00	1:30	19:30		<i>Dinner (TBD)</i>

Tuesday, November 15

Executive Session - AD/Huddle

8:30	0:30	9:00		<i>Discussion</i>
9:00	1:00	10:00		LN Team Response to Questions
10:00	1:00	11:00		<i>Executive Session/Closeout Dry Run</i>
11:00	1:00	12:00		<i>Closeout</i>
12:00	0:00	12:00		<i>Adjourn</i>