

Memorandum

Date: June 8, 2023

To: Sasha Valishev, AD ALD
Mary Convery, AD Beams Division Head
Kevin Burkett, PPD ALD
Brenna Flaughner, Deputy PPD ALD
Sam Posen, APS-TD ALD
Sergey Belomestnykh, APS-TD SRF Division Director
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Anna Grassellino, SQMS Center Director
Rich Stanek, PIP-II Project Director
Giorgio Apollinari, HL-LHC AUP Project Director
Steve Nahn, HL-LHC CMS Project Manager
Steve Brice, DUNE Coordination Office Head
Chris Mossey, LBNF/DUNE-US Project Director
Julie Whitmore, Mu2e Project Director
Mike Zuckerbrot, Cryogenic Safety Subcommittee
Adam Olson, ESH RPE Department Head

From: Amber Kenney, Chief Safety Officer

Re: Fermilab Accelerator Safety Updates

Amber Kenney
Chief Safety Officer

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Message:

Dear colleagues,

There has been tremendous effort across the lab to update our accelerator safety approaches to align with the updated Accelerator Safety Order (DOE Order 420.2D) that was incorporated into the FRA contract in September 2022. These efforts have been invaluable and are much appreciated and will help our current and future accelerator operations comply and run safely.

The lab has received improved understanding of the requirements of the updated order and specific feedback regarding our implementation of it. This improved understanding has caused a need to adjust our approach to coming into compliance with the new order that is also directly related to an FY2023 PEMP Notable Outcome.

As a result, the working groups that were formed in January 2023 will be sun-setted. Again, the effort of those working groups has been tremendous and appreciated. However, the deadline for implementation

cannot be extended and a new dedicated group, managed by the ESH Accelerator Safety Department, will continue to ensure necessary and timely updates are made. This group will be in contact with accelerator, machine and/or area owners to discuss specific impacts and updates needed for their areas within the next week.

Key changes to note include:

- Some Radiation Generating Devices (RGDs) will now be managed as Accelerators under the updated Order and require SAD Chapters and Accelerator Safety Envelopes. A template will be provided, and ESH will work with the Line Organization to develop the necessary documents.
 - Known affected machines: Vertical Test Stand (VTS), CMTS-1, and PIP-II IT.
 - All other RGDs are being evaluated to determine if they now fall within the Order or may continue to be managed as RGDs.
- Detailed risk analyses and risk matrices, including discussion of unmitigated risk, for all hazards must be included in the SAD Chapter. A template will be provided.
- Oxygen Deficiency Hazard (ODH) system controls/mitigations within an Exclusion Area must be defined as Credited Controls. This is a new approach for Fermilab and will require integration with the Accelerator Safety Envelope.
- Specifically listing requirements for each Credited Control for each mode of operation (i.e., shielding requirements, interlocked detectors) must be included within the ASE.

Additionally, Fermilab Senior Leadership expects all necessary updates to be completed in time to have the SAD and ASE updated, and externally validated, and submitted to FSO by August 25th to meet the PEMP deliverable.

Thank you for your understanding as the plan for achieving the PEMP Notable and compliance with DOE O 420.2D adjusts.

Please contact Maddie Schoell, ESH Accelerator Safety Department Head, if you have any questions.

Cc:

Charles England
Bonnie Flemming
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Jeremy Sawyer
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