March 2, 2022

Fermilab

TO: Distribution

FROM: M. Quinn

SUBJECT: Radiation Safety Subcommittee Meeting of March 2, 2022

MEMBERS (P=Present, A=Absent):

S. Borton	A	K. Graden	A	D. Newhart	A	J. Scott	A
J. Compton	A	D. Hahn	P	M. Quinn, Chair	P	M. Vincent	P
C. DuVall	P	H. Hall	P	B. Russell	P	M. Zientarski	P
J. Fulgham	P	D. Hockin	A	M. Schoell, Deputy Chair	P		
K. Gollwitzer	P	R. Madiar	P				

New Buisiness

1. **Q309** – M. Schoell reported that there have been multiple rad jobs for replacing/repairing failed quad from the MI 309 region. Two failures resulted in water leaks inside the Contamination Area. RPO is still collating all documents and results for all three instances.

a. Jan Q415 Q309 – Ground faults, required magnet change outs. Used NTSB for "upstairs" work on Q309 for increased contamination control.
   i. Lessons Learned: When setting up herculite for contamination control, be sure to evaluate work area for other ESH hazards (slips, trips, falls). If workers doing work in the area are unfamiliar with work location, would be beneficial to have them involved in the work area evaluation.
   ii. Lessons Learned: Wearing existing shoecovers when working/walking on herculite increases potential for slips/falls due to increased slipperiness. Rubber boots suggested to be worn instead during the course of the job.

b. Feb Q309 – Manifold failure causing water leak, required magnet change out. Used NTSB for "upstairs" work on Q309 for increased contamination control.
   i. Rigging/transport issue occurred when magnet slipped off of cribbing during transport. Contamination control (herculite) was not compromised, contamination wipes were taken and confirmed no spread of contamination onto truck.

c. March Q309 – Manifold failure causing water leak. There were concerns about the reliability of the spare magnet, so repaired the manifold in place by removing ceramic and replacing with flexible hose. Later found that the magnet coils had increased movement which caused the manifold to move, which raised concerns that the other manifolds would break. Installed shims into the magnet to increase stability. Began running MI beam Wednesday 3/9.

2. **RPP Review** – R. Madiar discussed the scope of this 2nd part: field visits to review implementation of ERPP and 458.1 and implementation of 835.

Old Business Carried Forward

3. **MI-8 7Be** – M. Schoell reported that fans servicing the 8 GeV enclosure were found to be tripped off in November, direct cause of Be-7 in enclosure. Fans fixed, modified to ensure exhaust fans continue to operate even if intake fans trip off. Extent of condition surveys performed in MI-8 Service Building, 8 GeV enclosure and MI-10 enclosures. Results received, still need time to review.

Matt/Maddie will work on tripartite/assessment of these kinds of systems so that we can avoid this in the future.

4. **Shielding Assessmend Addendum** – W. Schmitt stated that Fermilab may benefit from additional guidance to be incoroporated into the FRCM when shielding assessment addendum is required or when a revised shielding assessment is required. For example, increase in intensity for the muon campus. W. Schmitt will begin looking into revision.

5. **PIP-II** – W. Schmitt reported that PIPII wants to test cryomodules at PIPII IT. Would this be exempt from FESHM 2010 or the Accelerator Safety Order? The RF generating testing is the question of whether or not these activities would be exempt. M. Quinn said there are other areas that could be similar, so we should look at those and ensure the decision and shielding analysis are documented. Further discussion will take place.

6. **FRCM Revisions** –

- Chapter 3 and 4 updated to introduce explicit policies regarding prohibition of eating/drinking in areas where sealed radioactive sources are used. Revisions will be posted for lab-wide review soon.
- FRCM Chapter 5 is under revision. Looking in particular on how the manual is laid out and where "should" and "shall" are used, and possible removal of procedures from the manual, etc.

7. **Release & Clearance** – Clearance policy and procedure being finalized by RPS/RPO. Should be ready for broader review soon. Hope to have the changes starting to be implemented in a month or two. Some continuing analysis for universal waste is being done.

Carmen – finalizing technical basis. Working on procedure for "restricted release" and "clearance" surveys, including forms. Should be finalized soon.

Matt – reminded group that the plan for our updated survey process would maintain Rad Workers performing restricted release surveys (coming out of enclosures, keeping material in posted area), with RCTs performing the clearance surveys.

8. **NW Blocks Excavation for LBNF** – Rachel was wondering if the blocks being excavated from the NW beamline are planned to go through release & clearance process and have that information documented. J. Fulgham commented that blocks and soil are surveyed as they're excavated**.** Will use MMR in the future when blocks are moved to final location.

R. Madiar wondering how it's documented on what is determined for survey needs through this process.

M. Quinn commented that documentation of information for the full process (i.e., material was here for this purpose for this time, excavated with these surveys, and moved here for this purpose, etc.) would be beneficial for future release & clearance of the material.

RPO will look into best options for archiving this information.

November – Not a lot of new information this month.
-Feb: New release and clearance process may incorporate this.

9. **DOE O 420.2c Rewrite** – M. Quinn and R. Madiar commented that updates to the Order continue. Will send out to RSSC to take a look at when it's in Rev Comm.

10. Unauthorized work in High Radiation Area within MI-30 -

M. Schoell reported that the recommendations have been received from the Task Force.

1. Briefing
    a. RPO working with AD/Ops on implementing this recommendation.
    b. RPO goal is to have every entrant going into an enclosure
2. Electronic Dosimeters
    a. Instrumentation Team looking into what it would take to replace pocket dosimeters with electronic dosimeters.
    b. Biggest concern is quantity. Will need several hundred to replace all pocket dosimeters.
        i. When looking at potential cost, ballpark 1,000 electronic dosimeters, to not have a mix of electronic and pocket dosimeters. This would cost $500,000.
    c. Other concern would be with issuing and tracking. How would this be done?
        i. Matt asked IH Group how Personal Oxygen Monitors are handled to see if electronic dosimeters could follow the same model.
    d. Would need to consider "alarm setting" configurations.
        i. Have "default" configurations for RCTs and Fire Department.
        ii. Would whoever issues them deal with enabling/disabling alarms, setting limits, etc.?
            1. Good thing to consider, will need to work out this level of detail.
            2. Initial impression is that it should not be RPCF.
3. Lights/Alarms
4. Modifying General RWP to include some amount of work

Mark – will RPCF processes for HRA work need to be updated? Matt/Maddie – previously approved resuming work at RPCF based on procedures in place, but would be beneficial to take another look following results of the task force/HPI.

11. **NM2 Enclosure Door Found Unlocked** – The HPI has concluded and can be found here: https://www-esh.fnal.gov/pls/cert//hpi_rpt.html?hid=291. Recommendations for RP include**:**

- OFI – Interlocked gates – open position notification
    - Interlocks determined that this would take significant resources to accomplish for amont of monitoring points, and recommended that implementing the other OFI would be more cost effective.

12. **Multiple Sump Issues Lately** – See previous RSSC minutes for full discussion on sump issues. Remaining questions/follow-up:

- What caused the alarm if the pump was working properly
- Where the alarm was issued. Since it wasn't seen in the MCR.
- When dispatch received the alarm. (Appears to be ~9hrs between alarm and calls, unclear why.)
- Re-look at options for barriers between Absorber area and the rest of the lower level to ensure water doesn't flow into/out of posted Absorber Area.

M. Quinn suggestd bring this up as a possible tripartite. If that doesn't happen, RSSC should look into this in more detail.

September: this topic was not selected as a tripartite. This issue should remain as a focus topic for RSSC. M. Quinn will discuss this with A. Kenney about who best to ask to lead this effort.

13. **Unauthorized Movement of Radiological Postings** – HR still working on email functionality.

14. **Be-7 –**M. Quinn reported that he is working on a proposed technical basis for exemption from 10CFR835 Appendix D value, to go from 1,000 to 30,000 dpm for the limit. RPO and RPS reviewing now. Once final, will be sent to FSO/DOE HQ. Matt/Rachel will need to determine how this is formally submitted. Rachel suggested memo from Matt/Amber to Site Office Manager.

15. **DOE Revised DCS Effluent Values** – W. Schmitt commented that the DCS numbers (from the 7/7/2021 revised STD-1196-2021) have been updated in the spreadsheets. This item can be considered closed.

16. **Nevis Blocks** – M. Quinn stated that there is a statement of work that is being drafted. One step in being able to send this out for bid.

17. **DOE RPP Part 1 Review (April 2021)** – RPO and RPS continuing to work on Corrective Actions.

- ERPP sent to FSO, sent back comments. FSO comments have been addressed, ready to send back version with signature page.
- Many items in the CAP relate to the Clearance & Release Technical Basis and procedures, so should be very nearly done.
- Holly is shifting focus to the MEI calculation justification.

18. **MTA** –Feb: working on streamlining material shipment process.

19. **Outdoor Hazard Assessment** – M. Schoell reported that this assessment is finished and the final report from this assessment has been posted on ESH DocDB 6861. There were no identified findings releated to radiological hazards. This item can be considered closed. Thank you to RSSC members, and others in RCO, for contributing to this assessment.

20. **Review "JULIE Excavation Waiver Prohibited Zone" Map in GIS** – The sawcutting HPI has concluded and can be found heres: https://www-esh.fnal.gov/pls/cert//hpi_rpt.html?hid=289. Recommendations for RP include**:**

- OFI – Define and align excavation for FESHM, FRCM and Associated Training
- OFI – Demarcation of no-dig zones
- OFI – GIS implementation of "no exclusion zone"
    - Layer for "prohibited excavation waiver area" already existed, confirmed by SRSO in GIS and with FESS-GIS staff. Item closed.

21. **Target Service Integration Building** – M. Shoell reported that a briefing was given to FSO discussing ESH integration into Project plan. RPO continues working on documents (internal dosimetry, procedures, etc.). There were questions raised during the briefing about the need for an ARR for this facility, Matt/Maddie/Rachel will continue discussing. Looking at 420.2d proposed changes, should not affect operation/management of TSIB under 420.

22. DUNE – No update for March. Continuing to work on updating program documents for accreditation to include LBNF-FS, which will include a change in the neutron category used in accreditation. Background monitoring at SURF ongoing.

23. 2021 10 CFR 835 Triennial – M. Quinn reported that ESH is working on hiring contractor to come and perform this assessment. RFP out now, waiting to receive proposals (due to the Lab March 9, 2022).

24. Eating/Drinking Near Source Boxes – J. Fulgham reported that the downposting plan is being finalized, determining need for surveys and contamination wipes. Will downpost areas from RMA/CA to CA. Areas being addressed initially: NWA portakamps, Transfer Gallery, Meson Assembly Building, IB2, A0. Some areas will now have RMA boundaries painted on the floor.

25. Dose to Public FSO Concerns – M. Quinn reported that OCSO and FSO met to discuss the report. R. Verhaagen requested a field walkthrough of "Authorized Personnel" signage and the areas around AP0/Main Injector where dose rates may be > 100 mrem in a year for 24/7/365 occupancy. M. Quinn will schedule this walkthrough in the next few weeks.

December – M. Quinn stated that FSO Site Office manager would like to tour some areas where area monitors are located.
March – no update.

26. Neutron Generators –

- DT for Mu2e: D. Hahn reported that she spoke with Frank Porter, they are still working on gathering documentation. Continuing to work through RP Form 113.
- DD for NEXUS: Continuing to work on gathering documentation and working through RP Form 113.

27. Safety Assessment Document review – M. Schoell reported that the SBN, Proton and TeV Chapters have finished their review and still need to be submitted to the D/S, CSO and Director approval as SAD Rev 22 soon. No ASE revisions required.

Upcoming:

- SY120 and NM for SpinQuest updates.
- Potential proposed changes for MTA will require SAD changes (working on Shielding Assessment now), and unknown if this will need ASE change (only needed if ASE limit needs to be updated).
- FAST Proton injection will also require SAD update, which will require ASE update as well.

28. Accelerator Readiness – M. Schoell continues to work on ARR determination process.

29. Contamination in Enclosures – RPO continues to work on compiling results from 2021 build-up and decontamination surveys, and is performing an ALARA evaluation on frequency of routine decons. A summary of the surveys and the outcome of the ALARA evaluation will be shared with the committee as soon as possible.

30. **SARP** – K. Gollwitzer reported that much feed back was given to PIP II for the first draft of a Preliminary Shielding Assessment (PSA). Waiting for PIP II team to provide next version of PSA.

31. **RPCF** – M. Zientarski reportred on multiple RPCF activities:

- Working on electronic dosimeters: calibration tests, acceptance tests, etc.
- OWL is progressing. Matt suggested Mark give RSSC a presentation about the OWL, since there are a lot of new members

32. **Dosimetry** – M. Vincent reported on multiple Dosimetry program activities:

- Reviewing 21Q4 reports, should get that to RPO today/tomorrow.
- Updaing manuals (proeceudres, tech basis, and QA).
- Getting ready to resubmit application to DOELAP to include LBNF Far Site information as well as recommended updates from previous assessment.
- Annual DOE report due at the end of the month.
- Testing some updates to dosimetry APEX databases, working on pulling in the badge rack and EI databases to APEX (currently in FMP). Will be able to also track InLight area monitors.

ALARA Topics

33. RPO doing ALARA evaluation of routine MI-30 decon, as it does give RCTs quite a bit of dose.

Operations

Continuing to work through quad failures and repairs. Beam when able.

PLACE AND DATE FOR THE NEXT MEETING: THE NEXT MEETING WILL BE ON APRIL 6, 2022 AT 2:00 PM CENTRAL VIA ZOOM (MEETING INFORMATION WITHIN OUTLOOK CALENDAR EVENT).

FY22 Minutes: ESH DocDB 6738

Distribution via E-Mail–

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