



TO: Distribution
 FROM: M. Quinn
 SUBJECT: Radiation Safety Subcommittee Meeting of November 4, 2020

MEMBERS (P=Present, A=Absent):

S. Borton	A	D. Hahn	P	M. Quinn, Chair	P	P. Sedory	A
N. Chelidze	P	D. Hockin	A	D. Reitzner	P	K. Vaziri	A
J. Compton	P	R. Madiar	P	W. Schmitt	P	M. Zientarski	P
K. Gollwitzer	P	S. McGimpsey	A	M. Schoell, Deputy Chair	P		
K. Graden	P	D. Newhart	P	J. Scott	A		

Others Present: Lisa Reger

New Business

1. **Lisa Reger** – Started in HCTT in March, joining for Dave this meeting.
2. **DOE O 435 Added to Prime Contract** – L. Reger discussed changes:
 - requires that we absorb water before sending for disposal. Would be a lot, so working on an exemption for this requirement.
 - Legacy waste that's not able to be classified as stored for decay. Would cost ~\$1.9M to dispose of. Looking for an exemption to this requirement, or an extension and looking into target project/funding to dispose of this waste.
 - Having to dispose of waste that's not being stored for decay within 1 year. Have to dispose within 1 year of being received (date of waste pickup), with 90 additional days to allow for staging waste for disposal. Should be able to incorporate.

HCTT is working on implementation plan, will meet with FSO.

3. **Eating/Drinking Near Source Boxes** – D. Hahn asking for clarification on what's needed as far as eating/drinking near source boxes, from several recent emails, wondering if it depends on the size of the room, etc. What's required and what's needed for posting. Discussion:
 - FRCM requires no eating/drinking in radiological areas
 - FRCM disallows storage of radioactive material in cafeterias/etc.
 - Nothing explicit in FRCM about this situation. So if we come up with new rule/guidance, need to be consistent.
 - Do we want to say “no eating/drinking in any area where there is radioactive material”?
 - Do we issue guidance to radiological workers/source users?
 - In one of the emailed instances, the individual wasn't a source user, so there may be people in the areas that would be left off of these lists.
 - Also, this area hasn't been used as a work space until COVID and people started looking for areas where they can work alone.
 - How “far away” is good enough?
 - Do we even need a new policy? What's the perceived hazard/risk is for someone eating/drinking in a Radioactive Material Area. Don't see a risk in RMAs. Do see a risk for

radiological areas, so the requirements there are appropriate. If high enough Class/dose rates exist, would be posted as a radiological area. Don't see a risk for RMAs.

- Potential risks would be possible inhalation/ingestion of low-level radioactive material.
- But just because there's a presence of radioactive material, that doesn't necessarily mean the risk for ingestion exists.
- Sources in source boxes are well shielded and remain at RMA levels.
- Selaed sources are checked monthly for contamination, so don't see a risk for ingestion.
- Imposing additional restrictions would be a challenge to implements. Writing it in FRCM would be easy enough, but policing to ensure a water bottle isn't in an RMA would be difficult. And with no risk, don't see the need for additional layer of control.
- Concerns that an individual is using a source while eating/drinking, and the source box were to start leaking, then the risk is present.
 - If there's no risk, why does FRCM disallow source boxes in established eating/drinking areas. Seems like policies contradict themselves. Why do we disallow sources in established eating/drinking areas, but allow eating/drinking in RMAs?
- Haven't seen anyone eating/drinking while actually using radioactive sources.
- Also don't believe it's a realistic scenario for the sources to suddenly start leaking.
- Sources shouldn't be treated any differently than other radioactive material. If we impose restrictions on any area containing radioactive material/sources, should be consistently applied for all such areas.
- Should we be telling people to eat/drink in only designated eating/drinking areas?
 - Not possible with new COVID restrictions. Only one person can eat there, so many people are eating in their offices/desks.
- Additional complication, do we look at other ingestion pathways (i.e., applying cosmetics/chapsticks)? Do we disallow that in RMAs too?
 - Concerns that anywhere where radioactive material are stored/used, there is a risk for ingestion and practices shouldn't be allowed.
 - 10 CFR 835 doesn't specify, so it's not a regulatory requirement. But still have concerns.
- Keep thinking about possible solutions. We want to take our time and get things right before changing policy.

Old Business Carried Forward

4. **Accelerator Startup** – Linac, Booster, FAST & MTA signed off/authorized to run beam. Plan to sign off for NIF tomorrow (11/5).
5. **Dose to Public FSO Concerns** – Post-start recommendation from FSO with approval of ASE Rev 12 (MTA revision) highlighted FSO concerns about FNAL use of occupancy factors when calculating potential dose to the public. Recommended controls be put in place for any areas of concern when removing occupancy factor. Recommendation also mentions external DOE review. This stemmed from the DOE looking at Fermilab's site accessibility.

As the Fermilab site is closed to the general public, the otherwise publicly accessible areas of the site that could exceed public dose restrictions (if not for occupancy adjustment) do not represent a public risk. Prior to Fermilab allowing public access to

the site, the areas that would then be publicly accessible, that could exceed public dose restrictions (if not for occupancy adjustment), must be posted as restricted to Fermilab workers unless a subsequent DOE external review proposes alternative expectations that are subsequently accepted by the FSO Manager.

RP Departments looking into this. Planning for increasing area monitors (dosimetry badges) throughout the site as well as potential beam-on surveys. Increasing area monitor locations throughout the Lab to ~300 locations, including more publically accessible areas/site boundaries.

Current Controlled Area postings are based on 2000 hours per year. Not adjusting for occupancy factors, 8760 hours per year, is not something we've considered. We have designed facilities and our postings are also based on the 10 CFR 835 limits, which are based on 2000 hours in a year, which is considered to be extremely conservative for members of the public to be on site. Will have to see results from area monitors to understand this better.

Will also wait to see new Site Security Plan to understand any changes to public access to the site to see if there is a potential for some occupancy factors.

R. Madiar reported that there will be an 10 CFR 835 reiveu on the November/December timrframe. The plan for this assessment has been in the works since pre-COVID. However additional lines of inquiry from a security standpoing.

M. Quinn stated that review may be focused on our set of criteria (our occupancy assumptions) and if that's still appropriate.

6. **Locked Buildings** – M. Quinn reported that buildings will be locked going forward to improve on site security. AD Footprint will be cored to AC0 key/core set. Should have the same level of access for cardreaders. J. Compton reported that the majority of people are applying for keys. AD still has to let some individuals in, especially Contractors since they're not allowed to have Fermilab keys. Security plans to install card readers hopefully next month, Ops working with Security to have card readers set to same level as the card readers for MCR.

Security is also proposing new Welcome & Access Center, that will go on Pine St., outside of Guard Area, and would function much like ANL welcome building. The idea is that visitors/contractors would complete their badging/training/etc. there before accessing site. In the ~2-3 year timeframe, if moving forward.

7. **IARC Proposes New RGD** – A new electron accelerator is being planned for use in the HAB pit. It will need to be added to the list of RGDs (RP Form 108). The SRSO is in the process of determining DOE O 420.2c applicability. No update.
8. **RPCF** – M. Zientarski reported that RPCF was evaluated for card reader access, for the front door and also inside for Cave 1 due to the neutron source. No timeline estimate yet.
9. **COVID-Safe Mode** – Updates:
 - Accelerators are turning on following standard Start Up process.
 - RGDs starting back up as Divisions/Sections deem necessary, after RSO confirms interlock test and interlocked detector calibrations still valid.

- Practical Factors training online requalification change made within TRAIN. Continuing to encourage people who can requalify online to do so to ensure space available for individuals who need to take the training in person.
 - Received a waiver to current MC&A plan for forgoing quarterly report (required internally, regulations require annually) and postponing annual physical inventory until MBA custodians are back on site (required annually internally, regulations require every 2 years). K. Graden also working on updating MC&A plan to make these changes permanent.
 - Secretary of Energy did issue a memo allowing for some relief of some safety & health regulations. MC&A plan waiver appears to be the only relief needed/asked for by RP.
10. **NEXUS DD Neutron Generator** – D. Hahn reported that it's been removed from the Mu2e pit. The generator is moved to Lab G and the deuterium bottle is at Site 40. D. Hahn also reported that this is good because Mu2e DT Neutron Generator may be delivered soon.
11. **LBNF Site Prep** – M. Schoell reported site prep work complete at MI/BNB within the 30 ft. line (steel shielding, culvert work). Some excavation work happening at 2 manholes in the area, but outside of the 30 ft line, not impacting shielding. They're also starting the exploratory excavation for the NCenter absorber steel. M. Quinn asked about lessons learned, will need to think about and report back.
12. **Safety Assessment Document review** – The MINOS chapter has been approved by Nigel, DocDBs 1066 and 1067 have been updated.
13. **Accelerator Readiness** – M. Schoell reported that the MTA ARR pre-start recommendations were all closed, they are approved to run beam and are working on commissioning now.
14. **Contamination in Enclosures** – M. Schoell reported that the MI-30 "clean slate" survey for resuming build-up studies is planned for end of this week/early next week after work is complete and right before beam resumes.
15. **SARP** – K. Gollwitzer reported no new assessments for SARP.

ALARA Topics

16. N. Chelidze reported the the MI-30 collimator work is complete and they're verifying motion controls. There is slight issue with controls for 301 that MI is trying to determine if it's ok or if further investigation is needed. NuMI alignment work ongoing in preparation for target scans when beam resumes. Would be beneficial to hear more about this job's planning and execution.
17. M. Schoell reported 2020 Shutdown dose through Week 19 (ending Sunday October 25th, which includes MI-30 collimator work) is 4,256 person-mrem, which is well below the pre-shutdown estimate of 6,759 person-mrem.

Operations

J. Compton reported that beam is running to the Booster absorber, working on tuning beam. MTA is running into issues, being investigated.

PLACE AND DATE FOR THE NEXT MEETING: THE NEXT MEETING WILL BE ON DECEMBER 2, 2020 AT 2:00 PM CENTRAL VIA ZOOM (MEETING INFORMATION WITHIN OUTLOOK CALENDAR EVENT).

FY2021 Minutes: ESH DocDB 6112

Distribution via E-Mail-

Amber Kenney – Chief Safety Officer	Subcommittee Members
Eric McHugh	Bridget Iverson
Raymond Lewis	Nicole Gee
Others Present	