

August 27, 2021

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Corrective Action Plan (CAP) for the 2021 Fermi Research Alliance (FRA) Radiological Protection Program (RPP) Review and the Internal 2021 Crosswalk Review of DOE O 458.1 *Radiological Protection of the Public and the Environment*.

Dear Mr. Verhaagen,

The Fermi Research Alliance (FRA) Radiological Protection Program (RPP) Review was conducted April 5-9, 2021 and resulted in two Level 1 Findings, thirteen Level 3 Findings, and one Noteworthy Practice. A Causal Analysis & Extent of Condition Review of the two Level 1 Findings was submitted to the Fermilab Site Office in June 2021.

At the conclusion of the FRA RPP Review, Fermilab initiated a detailed Crosswalk Review of DOE O 458.1 *Radiological Protection of the Public and the Environment*, broken up into four Parts:

1. Crosswalk of DOE O 458.1 CRD Subpart 2.k *Release and Clearance of Property*
2. Crosswalk of DOE O 458.1 CRD Subpart 2.a *Environmental Radiological Protection Plan (ERPP)*
3. Crosswalk of DOE O 458.1 CRD Subparts 2.b-e Addressing Dose to the Public
4. Crosswalk of DOE O 458.1 CRD Subparts 2.f-j and l Addressing the Elements of the Environmental Radiological Protection Program (ERPP)

This Crosswalk took place April 15, 2021 through August 9, 2021 and included a detailed look at every line item of the DOE O 458.1 Contractor Requirements Document (CRD) to determine applicability and necessary elements (i.e., technical basis, methodologies, procedures, documentation, monitoring, etc.) required to be in place to demonstrate compliance with DOE O 458.1. This Crosswalk identified 134 unique Action Items, 54 of which directly respond to RPP findings. The remainder were additional Action Items which will further help reorganize our program to more clearly define each programmatic element and clearly demonstrate compliance.

The attached Table includes all 149 identified Findings and Action Items and incorporates them into one collective Corrective Action Plan (CAP). Several Findings and/or Action Items were further divided into multiple actions in the following categories:

- Annual Site Environmental Report
- Assessments & Metrics
- ERPP Document

- ERPP Related Procedures
- FESHM/FRCM Document
- General
- Materials (Storage, Survey & Release)
- Maximally Exposed Individual (MEI) & Public Dose
- Radiological Training
- Routine Monitoring
- RPP Document
- RWPs/Initial Entry Surveys

If you have any questions about the Corrective Action Plan, please contact Matt Quinn (mquinn@fnal.gov) or Maddie Schoell (maddiew@fnal.gov).

Sincerely,

**Amber
Kenney**

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Amber M. Kenney
Chief Safety Officer

cc: W. Bengert, DOE FSO, w/o encl.
K. Gregory, w/o encl.
N. Lockyer, w/o encl.
R. Madiar, DOE FSO, w/o encl.
E. McHugh, w/o encl.
M. Michels, w/o encl.
M. Quinn, w/o encl.
M. Schoell, w/o encl.
J. Scott, DOE FSO, w/o encl.

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Review	Finding/Action Item	Finding	Corrective Action	Anticipated	Assignment/Lead
			New	End	
April 2021 DOE RPP Review	RPP #L3-1	The RPP was not consistent in describing the compliance status of each 10 CFR 835 requirement in the Implementation section.	Fermilab will discuss with FSO on how to describe compliance status in the Fermilab RPP.	6/1/2022	Matt Quinn & Maddie Schoell
April 2021 DOE RPP Review	RPP #L3-2	The RPP contained references to policies, ICRP reports, DOE/EP schedules, and other documents that may not be applicable to the site's current program.	RPP will be reviewed to ensure all referenced policies, reports, etc. are applicable to the site's current program.	6/1/2022	Matt Quinn & Maddie Schoell
April 2021 DOE RPP Review	RPP #L3-3	Internal assessments did not utilize lines of inquiry or interviews with health physics or radiological protection subject matter experts (SME).	Formal LODs will be used for future 10 CFR 835 triennials. Suggest utilizing external consultants/reviewers.	3/1/2022	Matt Quinn & Maddie Schoell
April 2021 DOE RPP Review	RPP #L3-4	The 2017-2019 assessment lacked documented evidence to support the conclusion that all elements of the RPP were implemented.	Formal LODs will be used for future 10 CFR 835 triennials. Suggest utilizing external consultants/reviewers.	3/1/2022	Matt Quinn & Maddie Schoell
April 2021 DOE RPP Review	RPP #L3-5	The internal assessment team membership was not comprised of health physics or radiological protection SMEs.	Formal LODs will be used for future 10 CFR 835 triennials. Suggest utilizing external consultants/reviewers.	3/1/2022	Matt Quinn & Maddie Schoell
April 2021 DOE RPP Review	RPP #L1-1	The Fermilab ERPP as currently established does not address the requirements of Attachment 1 to DOE O 458.1, Chg 4, Radiation Protection of the Public and the Environment.	Will be addressed via action item 458.1 - 2.a #1	1/1/2022	Matt Quinn
April 2021 DOE RPP Review	RPP #L1-1_1	Use of the ERPP and RPP to satisfy the ERPP requirement fails to recognize that the RPP only addresses radiological concerns within Controlled Areas whereas the ERPP is supposed to address the radiological concerns in uncontrolled areas.	Will be addressed via action item 458.1 - 2.a #1	1/1/2022	Matt Quinn
April 2021 DOE RPP Review	RPP #L1-1_2	Procedures and practices to address elements related to the public dose limits are not evident (DOE O 458.1, Attachment 1, paragraph 2.b).	Will be addressed via action item 458.1 - 2.b-e #1-3	9/1/2022	Matt Quinn (various, see action items)
April 2021 DOE RPP Review	RPP #L1-1_3	An ALARA process specific to protection of the public and environment that is coordinated with the 10 CFR 835 ALARA process appears to be missing (DOE O 458.1, Attachment 1, paragraph 2.d).	Will be addressed via action item 458.1 - 2.b-e #5-8	9/1/2022	Matt Quinn (various, see action items)
April 2021 DOE RPP Review	RPP #L1-1_4	Analytical methods and associated technical bases used to evaluate dose to the public are not addressed (DOE O 458.1, Attachment 1, paragraph 2.e).	SOP for dose calculation to MEI will be created/updated. SOP should be sure to include how to perform calculation, where to gather information used in the calculation, location of MEI, dose pathways considered, etc. SOP should have supporting technical basis (either incorporated into SOP or as reference. (Specifics will be addressed via action items 458.1 - 2.b-e #9-29)	9/1/2022	Matt Quinn (various, see action items)
April 2021 DOE RPP Review	RPP #L1-2	The FINAL process to determine that material may be released to the public for unrestricted use does not comply with DOE O 458.1 Attachment 1, paragraph 2.k Release and Clearance of Property.	Create Technical Basis for surveying property for clearance & release.	3/1/2022	Wayne Schmitt
			Create Release & Clearance Program	5/1/2022	Maddie Schoell & Matt Quinn
			Create Release & Clearance Standard Operating Procedures (SOPs) for survey/release of real property and survey/release of personal property. Review and update additional related documentation as necessary. See CAPs for RPP #L1-2_1 through RPP #L1-2_8 for additional details.	9/1/2022	Matt Quinn (various, see action items)
April 2021 DOE RPP Review	RPP #L1-2_1	There is no evidence that the process is implemented in accordance with dose limits specified in paragraph 2.b of the CRD.	Will be addressed via action items 458.1 - 2.k #9 and #10	5/1/2022	Matt Quinn (various, see action items)
April 2021 DOE RPP Review	RPP #L1-2_2	There is no evidence that the dose constraint of 1 mrem TED is considered when releasing property for unrestricted use by the public.	Will be addressed via action items 458.1 - 2.k #9 and #10.	5/1/2022	Matt Quinn (various, see action items)
April 2021 DOE RPP Review	RPP #L1-2_3	Property is not appropriately monitored for residual radioactivity as required by paragraphs 2.k.(3) and 2.k.(5) of the CRD.	Will be addressed via action items 458.1 - 2.k #11-19 and #29-39	5/1/2022 (various, see action items)	Matt Quinn (various, see action items)
April 2021 DOE RPP Review	RPP #L1-2_4	A documented evaluation process for determination of process and historical knowledge used in decisions to release property for unrestricted use has not been implemented as required by paragraph 2.k.(5) of the CRD.	Will be addressed via action items 458.1 - 2.k #21-26	3/1/2022	Matt Quinn (various, see action items)

April 2021 DOE RPP Review	PPP #1-2_5	Authorized Limits used by FNAL to release property have not been submitted to DOE for approval, nor has FNAL obtained approval from DOE to use DOE pre-approved Authorized limits as required by paragraph 2.x.(6) of the CRD.	Will be addressed via action item 458.1 - 2.x #28	1/1/2022	Matt Quinn
April 2021 DOE RPP Review	PPP #1-2_6	Information provided in the annual site environmental report does not include information on Authorized Limits, results of radiological monitoring and surveys of cleared property with type and quantity of property cleared and independent verification results as required by paragraph 2.x.(10) of the CRD.	Will be addressed via action items 458.1 - 2.x #45-48	11/1/2022	Matt Quinn (various, see action items)
April 2021 DOE RPP Review	PPP #1-2_7	Final clearance documentation for property released from the Railroad Storage Area does not contain all the information required by paragraph 2.x.(11) of the CRD.	Will be addressed via action item 458.1 - 2.x #49	9/1/2022	Matt Quinn (various, see action items)
April 2021 DOE RPP Review	PPP #1-2_8	The example of release and clearance of real property provided to the Review Team was documented in the memo, "Request for Release Certification of NME, NMF, NMG Enclosures from the List of Facilities Containing Radioactive Material (R.P. Form #85)" and utilized the procedures outlined in Chapters 4 and 2 of the FRCM. The language of the memo indicated that the intent was to release the enclosures for unrestricted use. However, discussions with the CSO clarified that utilities still in use by the laboratory traverse the enclosures which contradicts the intent of release for unrestricted use. The Review Team concluded that the surveys documented in the release package are sufficient for removing 10 CFR 835 related radiological controls, but do not meet requirements for surveys used to support unrestricted release found in Attachment 1, paragraph 2x of DOE O 458.1, specifically subparagraphs (4) and (8).	Will be addressed via action items 458.1 - 2.x #19 and #28-38. determine what SOP is the best place to include procedure for downposting/surveying for downposting. (Real Property Survey or Posting Procedure)	5/1/2022	Matt Quinn (various, see action items)
April 2021 DOE RPP Review	PPP #1-3	The use of "should" is scattered throughout the RADCON Manual. The use of "should" regarding the implementation of contamination control requirements appears to diminish the requirements specified in 10 CFR 835.	FRCM will be reviewed to ensure "should" and "shall" is used appropriately and aligns with 10 CFR 835.	9/1/2022	Matt Quinn & Maddie Schoell
April 2021 DOE RPP Review	PPP #1-3-7	Sections used for contamination control purposes are scattered throughout the RCM making navigating the manual cumbersome, thereby jeopardizing the assurance that all the requirements are implemented.	FRCM will be reviewed to consolidate requirements for contamination control.	4/1/2022	Kathy Graden
April 2021 DOE RPP Review	PPP #1-3-8	Fermilab's approach of ensuring that its RPP meets the requirements of 10 CFR 835 does not appear to be consistent with the following standard flow-down approach, i.e., 10 CFR 835 → RPP → RCM → Implementing Procedures.	ESH RP Departments will review FRCM to determine what should be a procedure rather than in FRCM, and will work with appropriate Lab organization(s) to generate such procedures.	9/1/2022	Matt Quinn & Maddie Schoell
April 2021 DOE RPP Review	PPP #1-3-10	The RADCON Manual should be evaluated by Fermilab to ensure the consistent and defensible implementation of the requirements in the Manual.	FRCM, SOPs and training will be reviewed to clarify Roles & Responsibilities.	9/1/2022	Matt Quinn & Maddie Schoell & Kathy Graden
April 2021 DOE RPP Review	PPP #1-3-11	Some sections in the RADCON Manual have been written such that they represent the minimum level of compliance with 10 CFR 835, which if deviated from, is likely to result in one or more violations of the 10 CFR 835 requirements. Specific sections of the RADCON Manual where this was observed are as follows:	FRCM will be reviewed for potential room for improving or suggesting additional actions beyond minimum required for compliance to add depth in controls.	9/1/2022	Matt Quinn & Maddie Schoell
April 2021 DOE RPP Review	PPP #1-3-11_1	Section 421.2 indicates that a frisker can be used to release radioactive items from a contamination area provided that the frisker survey can demonstrate that the removable contamination levels are less than Table 2-2.	FRCM will be reviewed for potential room for improving or suggesting additional actions beyond minimum required for compliance to add depth in controls.	9/1/2022	Matt Quinn & Maddie Schoell
April 2021 DOE RPP Review	PPP #1-3-11_2	Section 421.3 indicates that material not immediately removed from contamination areas shall be controlled to prevent contamination while waiting release. Items surveyed for release from a contamination should be removed immediately.	FRCM will be reviewed for potential room for improving or suggesting additional actions beyond minimum required for compliance to add depth in controls.	9/1/2022	Matt Quinn & Maddie Schoell
April 2021 DOE RPP Review	PPP #1-3-11_3	Section 336 from the RADCON indicates that personnel can perform a hand and foot frisk when exiting a contamination area.	FRCM will be reviewed for potential room for improving or suggesting additional actions beyond minimum required for compliance to add depth in controls.	9/1/2022	Matt Quinn & Maddie Schoell
April 2021 DOE RPP Review	PPP #1-3-12	Discrepancies were observed between the training module and the RADCON Manual regarding radiological/non-radiological hazards and the use of supplemental dosimeters.	FRCM, Radiological Worker - Classroom (Virtual) and Radiological Worker - Practical Factors will be reviewed for consistency in use of supplemental dosimeters.	4/1/2022	Kathy Graden
April 2021 DOE RPP Review	PPP #1-3-13	Many of the surveys were not completed in their entirety.	Review and update RPO Initial Entry Survey procedure, ensuring RCT survey and RSO review responsibilities are specified. OIT refresher for all personnel. Suggest investigating potential use of electronic survey software.	3/1/2022	Joel Fulgham & Maddie Schoell
April 2021 DOE RPP Review	PPP #R1	Fermilab operations have changed significantly since 1989 with the addition of new beamlines and experiments as well as the cessation of operations connected with the Tevatron. The change in operational posture coupled with near term plans to greatly increase the output and intensity of the LINAC may warrant an examination of the need for biological surveillance to show that biota is protected.	Review and update surveillance used to support the statement in Fermilab Environmental Monitoring Program, "Biological surveillance was carried out on various samples of vegetation and fish from 1981 to 1989."	6/1/2023	Eric Mieland (and future ERPP Manager)
April 2021 DOE RPP Review	PPP #R2	In the experience of Review Team members, potentially radioactive personal property destined for unrestricted use are subjected to rigorous, time-consuming radiological surveys that include measurement of both direct and removable contamination. Such "free release" surveys are normally performed by qualified RCTs or by individuals trained to the same level as qualified RCTs. Process knowledge alone is generally not sufficient as a basis for unrestricted release, and in most cases potentially radioactive items with inaccessible surfaces are generally not eligible for release to the public. FNAL should develop detailed and rigorous procedures for surveying property released from Controlled to uncontrolled areas, developing performance-based training modules, and providing this training to individuals authorized to move property from 10 CFR 835 regulated areas to uncontrolled areas.	Determine appropriate qualified surveyors for clearance of property as part of creating/implementing Release & Clearance program.	5/1/2022	Maddie Schoell & Matt Quinn
April 2021 DOE RPP Review	PPP #R3	Based on the significance of the Level 1 finding related to releasing personal property to the public, the Review Team recommends that the release of scrap material from the Railroad facility ceases immediately until such time as compensatory measures are put in place to bring the release and clearance process into compliance with DOE O 458.1.	4/9/2021 - Material release from the railroad was paused as interim measure. TB and SOPs established and implemented prior to resuming release. Technical Basis in place before resuming material release Release & Clearance Program implemented before resuming material release Railroad specific SOPs for Release & Survey Program implemented before resuming material release.	can close - 4/9/2021 3/1/2022 5/1/2022 6/1/2022	Amber Kenney Wayne Schmitt Maddie Schoell & Matt Quinn Ben Russell & Scott Borton
April 2021 DOE RPP Review	PPP #R4	In the experience of the Review Team members, it is an accepted best practice across the DOE complex to prohibit eating, drinking, smoking and the application of cosmetics within Controlled Areas. Further, these restrictions are accepted best practices for wet chemistry labs, machine shops, biological labs and other research and industrial applications where co-located hazards would provide a possible mechanism for uptake or exposure to hazardous material. FNAL should benchmark their current policy on eating, drinking, smoking and the application of cosmetics against other DOE national laboratories and make appropriate changes to its policy.	Investigate potential of reconfiguring or re-posting facilities to ensure that offices and eating/drinking areas (e.g., break rooms, kitchenettes, water fountains, fridges, vending machines, etc.) are not within posted Radioactive Material Areas, so that storage of radioactive material is clearly separated from locations where personnel may eat/drink or store food. (Resolution of this action item should be a report describing what would be needed to make the changes for various areas).	1/1/2022	Kathy Graden
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.x	458.1 - 2.x #1	Need to answer if there's a difference between clearing property but keeping it on site vs clearing property and it going off site, and define the hours needed/used for this "in a year".	Create a procedure for clearance of real property to ensure dose constraint of 25 mrem in a calendar year (assuming 8760 hours in a year). This procedure would cover clearance surveys for building infrastructure/materials, and would not cover soil/land. (Separate/additional procedures would be needed to cover soil/land clearance, which would only occur at the conclusion of Fermilab.) By surveying real property to ensure < 25 mrem/8760 hours, there will no longer be a need to implement additional area monitor dosimetry. Update FRCM 241 accordingly.	1/1/2023	Maddie Schoell
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.x	458.1 - 2.x #2	Ensure all non-Controlled Area buildings have area dosimeter.	duplicate - see action item 458.1 - 2.x #1	9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.x	458.1 - 2.x #3	Need to determine occupancy time used. Update Area Monitoring program to highlight areas possibly > limit, given determined occupancy time.	duplicate - see action item 458.1 - 2.x #1	9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.x	458.1 - 2.x #4	Determine appropriate surveys (instrument, wipes, soil samples, etc.).	Determine appropriate types of surveys (instrument, wipes, etc.) for clearance surveys in Technical Basis	3/1/2022	Wayne Schmitt
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.x	458.1 - 2.x #5	Update Area Monitoring procedure to highlight dose limit, and flagging if > limit given determined occupancy time.	Update ESH RPO area monitoring procedure to include dose limits, flag if > limit	3/1/2022	Joel Fulgham & Maddie Schoell
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.x	458.1 - 2.x #6	Update FRCM to include area monitoring program policy/information. Both routine/ongoing (Fermilab site) and as needed (selling).	Update FRCM Ch 11 to include area monitoring program policy/information.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.x	458.1 - 2.x #7	Update RP Notes 87, 108 & 109.	Update RP Notes 87, 108 & 109. These may also be retired when a new clearance and release technical basis document is created.	3/1/2023	Maddie Schoell & Wayne Schmitt
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.x	458.1 - 2.x #8	Review process for release surveys (Article 241) to ensure compliant. Create TBD.	duplicate - see action item RPP #1-2	5/1/2022	Maddie Schoell & Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.x	458.1 - 2.x #9	Ensure dose constraints for release of personal property are specified in FRCM.	Update FRCM Chapters 2, 4 & 11 specify the dose constraints from 458.1 Part 2.x(2)(b) for personal property.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.x	458.1 - 2.x #10	Ensure all SOPs related to release of personal property specify dose constraint, and describe process for ensuring nothing above constraint is released.	Ensure Release & Clearance Program specify dose constraints from 458.1 Part 2.x(2)(b) for personal property and include a survey process that ensures material above such constraints isn't released.	5/1/2022	Maddie Schoell & Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.x	458.1 - 2.x #11	TBD for dose rate threshold for when taking contamination wipes is needed.	Update ESH RPO routine monitoring procedure for performing Initial Entry surveys to discuss when contamination wipes are needed based on dose rates.	3/1/2022	Joel Fulgham & Maddie Schoell

Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #12	TBD for beamline interfaces when contamination may be possible, and when not.	Update ESH-RPO routine monitoring procedure for performing Initial Entry surveys to discuss when contamination wipes are needed based on material type/location (i.e., beam intercepting device).	3/1/2022	Joel Fulgham & Maddie Schoell
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #13	Update snop survey routine monitoring program documentation to describe: (1) How frequencies are determined, (2) How area activities are reviewed to update frequencies, (3) How frequently (locations) of contamination wipes are performed	Update ESH-RPO routine monitoring procedure for performing Snop Surveys to describe: (1) How frequencies are determined, (2) How area activities are reviewed to update frequencies, (3) How frequently (locations) of contamination wipes are performed	3/1/2022	Joel Fulgham & Maddie Schoell
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #14	Conduct study of Class 1 & 2 items found in CA/RMA that were not subject to destructive processes (i.e., machining, drilling, grinding, etc.) to demonstrate that they do not have surface contamination. (Ensure noting beam intensities, and when study should be performed if/when intensity increases)	Conduct "Impacted Material Study" (aka "Dose Rate to Contamination Study") to demonstrate potential contamination in RMAs due to activated components and help define Impacted Material.	3/1/2022	Kathy Graden & Wayne Schmitt
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #15	Technical basis document for performing surveys (which instruments can be used) to meet IFB. (Update FRCM, rad worker, other documents (?)	Create Technical basis for surveying to meet IFB	3/1/2022	Wayne Schmitt
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #16	Update definition for lower level of Class 1 (IFB). Update FRCM, Rad Worker, other documents	Investigate possible updates to material Class system during creation of Release & Clearance Program.	5/1/2022	Maddie Schoell & Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #17	Update MMR requirements to require MMR (with survey) and transportation in Lab vehicle any time moving potentially impacted material from Controlled Area to non-posted area.	Investigate possible changes to MMR program.	5/1/2022	Ben Russell & Maddie Schoell
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #18	Update MMR process to ensure surveys are done for potentially impacted material (don't have option to select "no" for rad survey).	Investigate possible changes to MMR program.	5/1/2022	Ben Russell & Maddie Schoell
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #19	Update requirements that movement of potentially impacted material from one Controlled Area to another Controlled Area (regardless of O/S ownership) to require being done using lab vehicle. Investigate if this also needs MMR. (Would help show the "cradle to grave" movement of material. But since we don't have QR/barcode numbers on all material, wouldn't be able to connect MMR done in June to move from building A to building B to MMR done in October to move from building B to building C.)	Investigate possible changes to MMR program.	5/1/2022	Ben Russell & Maddie Schoell
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #20	Add statement into FNAL's release programs/procedures/documents (Article 241, etc.) stating that we won't release real property without considering applicable statutes, regulations or DOE directives for the entity we're releasing the real property to (in addition to FNAL clearance limits/requirements). If/when FNAL releases land, should have additional detail/program documentation specific to ensure meeting other limits/thresholds after FNAL clearance.	Add a statement into FRCM Article 241 stating that real property will not be released without considering applicable statutes, regulations or DOE directives for the entity the real property is being released to (in addition to FNAL clearance limits/requirements).	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #21	Create/finalize document describing Process Knowledge process	Incorporate "Process Knowledge" statement/discussion as Appendix to the Release & Clearance Program Document. Process Knowledge Document should contain information specified in Action Items 458.1 - 2.k. #22, 458.1 - 2.k. #23, 458.1 - 2.k. #24, 458.1 - 2.k. #25, and 458.1 - 2.k. #26.	3/1/2022	Kathy Graden
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #22	Ensure step of the Process Knowledge process is looking at historical records of operation and use of radioactive material/RGDs in that space	rolled into action item 458.1 - 2.k. #21	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #23	Add statement to Process Knowledge process document stating that real property must be reviewed individually, but can combine real property if used for common historical uses. (i.e., can clear all of Village together, but can't also add MI-65, etc.	rolled into action item 458.1 - 2.k. #21	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #24	Add statement to Process Knowledge process that if process knowledge/historical knowledge not available, must rely on surveys (that meet 2.k.(3) and 2.k.(8)) to clear	rolled into action item 458.1 - 2.k. #21	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #25	Add statement to Process Knowledge process document about what to do if adequate documentation isn't found (i.e., perform surveys & ensure subsequent monitoring for status changes)	rolled into action item 458.1 - 2.k. #21	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #26	include "anticipated radionuclide" table in Process Knowledge process document (use 6004 appendix d and TM-1834 for reference)	rolled into action item 458.1 - 2.k. #21	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #27	Ensure survey methods chosen to do clearance surveys (2.k.(3)) can detect these radionuclide	Ensure TB for clearance surveys uses survey methods capable of detecting all anticipated radionuclides.	3/1/2022	Wayne Schmitt
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #28	Ensure chosen Authorized Limits are clearly stated by the Lab (i.e. in ERPP) and approved by FSO. Ensure limits are stated in all relevant document	Clarify in ERPP that Fermilab does not presently use Authorized Limits. Update FRCM Ch 11 to specify following process outlined in 458.1 2.k.(6) to obtain FSO approval to obtain and use Authorized Limits.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #29	Review MARSSIM/MARSAME and determine which parts are applicable for which types of surveys at Fermilab. (a) Include in ERPP/Implementation Document. (b) Determine which aspects of current program/practice need to update to explicitly implement applicable parts.	Review MARSAME as part of creating the Release & Clearance Program. Suggest adding similar steps/process to follow MARSAME process.	5/1/2022	Maddie Schoell & Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #30	Determine what level, if any, approval from DOE is needed for implementing applicable parts of MARSSIM/MARSAME. Determine if FSO approval of ERPP with this description is sufficient, or if additional/other approvals also needed	Review drafted Technical Basis and Release & Clearance Program with FSO, and incorporate any additional suggestions	5/1/2022	Maddie Schoell & Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #31	Develop Critical Levels for anticipated radionuclides for applicable survey instruments	Develop Critical Levels for anticipated radionuclides and applicable survey instruments, incorporate into Technical Basis	3/1/2022	Wayne Schmitt
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #32	Create technical basis, use 6004 as example	Use DOE STD 6004 as example/reference in developing Technical Basis	3/1/2022	Wayne Schmitt
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #33	Ensure Clearance program and SOPs clarify need to survey entire items, or grids for larger area/land, to determine any non-uniformity in radioactivity	Use DOE STD 6004 as example/reference in developing Release & Clearance Program	5/1/2022	Maddie Schoell & Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #33	Ensure Release & Clearance program and SOPs clarify need to survey entire items, or grids for larger area/land, to determine any non-uniformity in radioactivity	Ensure Release & Clearance Program clarify need to survey entire items, or grids for larger area/land, to determine any non-uniformity in radioactivity	5/1/2022	Maddie Schoell & Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #34	Ensure Release & Clearance SOPs discuss actions to survey entire items, or grids for larger area/land, to determine any non-uniformity in radioactivity	Ensure Release & Clearance SOPs discuss actions to survey entire items, or grids for larger area/land, to determine any non-uniformity in radioactivity	6/1/2022	Ben Russell
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #34	Technical Basis to justify what instrument is appropriate for what radionuclides. State Limits. (both handheld and RAF instruments)	Include justification for appropriate survey instruments, and their limits, in Technical Basis. Include both handheld and RAF instruments.	3/1/2022	Wayne Schmitt
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #35	In RPO SOP, step to identify what instrument is used. Possibly include table saying "If you're looking for this, use this surveys	In RPO SOP, step to identify what instrument is used. (Possibly include table saying "If you're looking for ____, use this survey instrument")	6/1/2022	Ben Russell
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #36	RPO SOP should note what conditions in which a certain instrument CANNOT be used (i.e., temperature, magnetic fields, etc.)	RPO SOP should note what conditions in which a certain instrument CANNOT be used (i.e., temperature, magnetic fields, etc.)	6/1/2022	Ben Russell
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #37	Create/update documents for how RAF calibrates instrumentation	RAF instrument calibration SOPs already exist	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #38	Ensure (1) ERPP contains "use appropriate and calibrated instruments to perform surveys & analysis" and (2) Clearance Program procedure gives details about calibration process (both RPCF for handheld and RAF for analysis instruments), reference various SOPs & TBs	Ensure ERPP contains "use appropriate and calibrated instruments to perform surveys & analysis"	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #39	Investigate RPCF temperature testing for handheld instruments. If we don't test them for temperature ranges, do we need a TB stating why not? (i.e., manufacturer specs, etc.)	Ensure Release & Clearance Program procedure gives details about calibration process (both RPCF for handheld and RAF for analysis instruments), reference various SOPs & TBs	5/1/2022	Maddie Schoell & Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #39	Investigate RPCF temperature testing for handheld instruments. If we don't test them for temperature ranges, do we need a TB stating why not? (i.e., manufacturer specs, etc.)	Investigate RPCF temperature testing for handheld instruments. If we don't test them for temperature ranges, do we need a TB stating why not? (i.e., manufacturer specs, etc.)	11/1/2021	Mark Zientarski & Wayne Schmitt
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #40	For ensuringsurveys are conducted: (1) Clearance Program says they're required, (2) RPO SOP for how to perform them, and (3) Final/FESS Clearance SOP includes step to attach survey	duplicate - see action item RPP #1-2	5/1/2022	Maddie Schoell & Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #41	Need to clearly state what the final clearance survey is (i.e., when exiting the enclosure to go to RMA, when going somewhere with MMR, when leaving Railhead). (State in ERPP and Clearance Program Document)	duplicate - see action item RPP #1-2	6/1/2022	Ben Russell
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #42	Investigate amount of material that's removed from enclosures that's not activated (Class 0)	Clearly specify what surveys act as final clearance surveys in Release & Clearance Program	5/1/2022	Maddie Schoell & Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #42	Investigate amount of material that's removed from enclosures that's not activated (Class 0)	Investigate amount of material that's removed from enclosures that's not activated (Class 0)	1/1/2022	Joel Fulgham
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #43	Investigate use of "this item has been in radiological area" sticker. If yes: (1) add to ERPP and Clearance Program document, (2) update RP SOP for surveys, (3) update FRCM, and (4) update Rad Worker Classroom & Practical Factors	Investigate potential implementation of Class 0/Impacted Material stickers	5/1/2022	Maddie Schoell & Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #44	Wherever we document final survey, need to restate DOE Authorized Limits (i.e., on the form that you write survey results, write reading from the instrument and if it's at or below Critical Limit (check one or the other). SOPs relate above/below Critical Limit checkbox on form to DOE Authorized Limit)	Ensure release survey form include clear indication if survey results are above or below clearance limits (Critical Level), based on Technical Basis and Release & Clearance Program.	6/1/2022	Ben Russell
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #45	Determine what property from RMAs needs to be included in clearance process and therefore included in ASER. (1) Potentially impacted material - goes through clearance/survey process, tracked and included in ASER. (2) Not-potentially impacted material - technically cleared through Process Knowledge but not subject to the clearance/survey process, not tracked in ASER. (3) Include in ERPP/Clearance Process document.	Define "impacted material" in Technical Basis document.	3/1/2022	Wayne Schmitt
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #45	Determine what property from RMAs needs to be included in clearance process and therefore included in ASER. (1) Potentially impacted material - goes through clearance/survey process, tracked and included in ASER. (2) Not-potentially impacted material - technically cleared through Process Knowledge but not subject to the clearance/survey process, not tracked in ASER. (3) Include in ERPP/Clearance Process document.	Define "impacted material" in Clearance & Release Program.	5/1/2022	Maddie Schoell & Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #46	Update ASER to say "_____ amount of property was surveyed and cleared using IFB" or "_____ amount of property was cleared using Process Knowledge" of "_____ amount of property was deemed (xxx was recycled, etc.)	Update Annual Report to the Director (i.e., ASER) to include all required elements specified in 458.1 2.k.(10)	11/1/2022	Teri Dykhuis

Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #47	Update Clearance Program to describe possible disposition path	Ensure Release & Clearance program describes actions based on disposition path	5/1/2022	Maddie Schoel & Matt Quinn
			Ensure Release & Clearance SOPs discuss actions based on disposition path & forms specify disposition path	6/1/2022	Ben Russell
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #48	Update Clearance Program/ERP/SOPs/FRCM/Training to describe new process for clearing property from RMAs that doesn't go through the Railhead. (Need to look into process for release non-activated material that has been in a radiological area, (i.e., FTBF/ITA/etc.). Benchmark with other Labs. Tighten up)	Ensure Release & Clearance program describes actions for material to be released from RMAs that do not go through the Railhead	5/1/2022	Maddie Schoel & Matt Quinn
			Create Release & Clearance SOP for releasing material from RMAs that do not go through the Railhead	6/1/2022	Ben Russell
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #49	Review/update MMR template and survey templates to include all required information. (Notably: Information for applicable surveys (alpha, etc.), wipes, RAF, etc.)	Ensure Railhead, HCTT and RPO survey templates used for clearance and release of property include all information required in 458.1.2.k(13)	3/1/2022	Ben Russell
			Remove training qualifications for MMR Authorized Surveyor (FN000125) from everyone except Railhead/HCTT/RPO personnel. Ensure MMR authorized surveys are only members of the Railhead, HCTT and RPO, who will follow new TB and Clearance & Release Program and SOPs	4/1/2022	Sue McGimpsey
			Update MMR authorized surveyor training to be about new TB and Clearance & Release Program & SOPs. Only provide to Railhead/HCTT/RPO.	4/1/2022	Sue McGimpsey
			Evaluate ability for MMR system to be updated to ensure Authorized Surveyors (Railhead/HCTT/RPO) review any MMR for potentially impacted material. (Originating from radiological areas, or activated material in CA/RMAs (pending study/process knowledge document updates).	5/1/2022	Ben Russell & Maddie Schoell
			Evaluate the ability for additional information to be contained in the MMR database for the purpose of clearing property for unrestricted public use.	1/1/2023	Ben Russell & Maddie Schoell
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #50	Review 6004 Section 4 for specific information to include in routine or non-routine documentation	duplicate - see action item 2.k #32	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 1 - Subpart 2.k	458.1 - 2.k #51	Look at creating an SOP for release data/information to include in ASER	Investigate creating an SOP for release data/information to be included in ASER	8/1/2022	Kamran Vaziri (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 2 - Subpart 2.a	458.1 - 2.a #1	Write new ERPP to address specific elements of O 458.1	Write ERPP	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 2 - Subpart 2.a	458.1 - 2.a #2	Include graded approach policy statement in new ERPP	Include graded approach policy statement in new ERPP	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 2 - Subpart 2.a	458.1 - 2.a #3	Update/create program documents as specified in the rest of this crosswalk	n/a - see remainder of crosswalk action items	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 2 - Subpart 2.a	458.1 - 2.a #4	review other ERPPs to see how they are addressed by other Labs (i.e., BNL mentions waste disposal cells for long term stewardship)	review other ERPPs to see how they are addressed by other Labs	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #1	Update/create SOP for what goes into Director's Report calculation. (Ensure including all doses that go into calculation (reference/look at 2.1.(2)(f) - documentation demonstrating compliance with public dose limits)	Create SOP for what should be included in the ASER (i.e., MEI dose, collective population dose, number of clearance surveys (both real and personal property), area monitoring program results, etc.) (refer to 458.1.2.1.(2)(f))	8/1/2022	Kamran Vaziri (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #2	Clearly specify dose to public limits in FRCM	Update FRCM Ch 11 to clearly specify dose to public limits. Also include the statement: The public dose limit applies to members of the public located off DOE sites and on DOE sites outside of controlled areas, and to those exposed to residual radioactive material subsequent to any remedial action or clearance of property.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #3	Ensure 2.b.(2) statement/understanding is included in FRCM update (Action Item 2.b-e #2) and new SOP for dose calculations (Action Item 2.b-e #1)	Ensure 2.b.(2) statement/understanding is included in FRCM update.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #4	Update FRCM Ch 11 (and Ch 3, Ch 9) to specify requirement to request and receive FSO Manager approval for temporary public dose limits. (Request memo must include ALARA analysis and justification) (Footnotes in Ch 3 and Ch 9 referencing Ch 11)	Update FRCM Ch 11 to specify requirement to request and receive FSO Manager approval for temporary public dose limits.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #5	Updated current processes (SA reviews, RWP, etc.) to specify 458 requirements/evaluations.	Update current processes to reference SOP for performing ALARA reviews.	2/1/2024	Ben Russell (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #6	Update FRCM Ch 11 with Environmental ALARA Statement. Include 2.d.(2) for what must be included in ALARA review process	Update FRCM Ch 11 to include policy Environmental ALARA statement, reference 458.1.(2)(2).	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #7	Review FRCM Ch 3 and Ch 8 to update and add references to Ch 11 as needed. (More specific reference to article, rather than the entire chapter.)	Update FRCM Ch 3 and Ch 8 to reference Environmental ALARA statement in FRCM Ch 11	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #8	Create SOP for ALARA performing reviews (qualitative, semi-quantitative & quantitative)	Create SOP for performing environmental ALARA reviews.	8/1/2022	Ben Russell (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #9	Check findings from RPP review to ensure everything captured and addressed	n/a - all items from RPP addressed	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #10	Update SOP/outline for Director's report to include required elements. (i.e., references to SOPs/TBs for MEI calculation)	duplicate - see action item 458.1 - 2.b-e #1	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #11	Review MEI determination & update as needed (need to consider on-site outside of posted Controlled Area locations). Specify "it is this" "it's not this", clearly state what was considered and why it's not them/there	duplicate - see action item 458.1 - 2.b-e #18	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #12	Ensure FRCM/SOPs include 2.e.(1)(a)(3) statement to include evaluations to eye/skin/extremities above limit.	In MEI dose calculation SOP, include 2.e.(1)(a)(3) statement to include evaluations to eye/skin/extremities above limit.	8/1/2022	Kamran Vaziri (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #13	Ensure SOP for performing dose calculations include all indicated pathways. Look into RESRAD, etc. (modeling/software packages)	Generate SOP for performing MEI dose calculations, including all 458 indicated pathways. Suggest using RESRAD or other such software.	8/1/2022	Kamran Vaziri (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #14	Include in ERPP - If above 25 mrem in a year to MEI, would need to identify major non-DOE sources of exposure to include in our calculations. Would need to understand/determine how to understand their dose to MEI. Discuss in FRCM/ERPP - don't anticipate dose > 25 mrem in a year, so this doesn't apply. Will periodically review for any new major non-DOE sources built/created nearby. Would need to develop new SOP if ever needed.	Include in ERPP - If above 25 mrem in a year to MEI, would need to identify major non-DOE sources of exposure to include in our calculations. Would need to understand/determine how to understand their dose to MEI. Discuss in FRCM/ERPP - don't anticipate dose > 25 mrem in a year, so this doesn't apply. Will periodically review for any new major non-DOE sources built/created nearby. Would need to develop new SOP if ever needed.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #15	Include discussion of radon in ERPP. (in Batavia and SD)	Include discussion in ERPP section 2.e.1.(d) of radon not being included in dose limit.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #16	Define population bounds (distance, etc.) in SOP for calculating dose	Define population bounds in MEI calculation SOP	8/1/2022	Kamran Vaziri (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #17	Ensure SOP for calculations includes released material as potential pathway	Include released material as potential pathway for MEI calculation in SOP	8/1/2022	Kamran Vaziri (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #18	Determine location of MEI. i. For MEI off-site: FRCM 1.10.4.d.8 & e - i.d. Based on four decades of operational experience at Fermilab, the MEI for each of these individual sources of radiation dose is at a different location along the Fermilab site boundary. Thus, summing the contributions of the individual sources assures a conservative estimate of the maximum dose delivered to a member of the public. ii. e. It is logistically impractical given the size and complexity of the Fermilab site to define the location that would be associated with the RP. 1. Don't consider and MEI on site, don't consider public to be on site for long enough to be MEI 2. For MEI on-site: i. Benchmark with other labs - they allow public within posted Controlled Area fences, do they calculate MEI on site/within the fence? Don't believe they do. ii. Check with Amber/Joel on Security updates/plans to ensure no public 24/7/365 c. Discuss where "possible" and "likely" are different. Even though site is open 8a-6p every day, not likely someone would be here 10hrs a day every day all year. d. Capture in Technical Basis(?)	Determine location of MEI, for use in dose to MEI calculation SOP	8/1/2022	Kamran Vaziri (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #19	Include in SOP for calculating MEI dose to reconfirm MEI location is still valid annually when doing MEI calculation. (Confirm no changes in Security/Public access posture to necessitate MEI on site, and that conservative off-site MEI summation is still appropriate). (Review/update Technical Basis	Include step in MEI dose calculation SOP to re-confirm that chosen MEI location is still appropriate. (i.e., Confirm no changes in Security/Public access posture to necessitate MEI on site, and that conservative off-site MEI summation is still appropriate)	8/1/2022	Kamran Vaziri (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #20	Ensure FRCM, ERPP, SOPs are clear on what is for MEI and what is for population/collective dose	In ASER SOP, include description of what information is used for what purpose (MEI or population/collective dose).	8/1/2022	Kamran Vaziri (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #21	Perform both calculations - MEI and collective dose. Could then describe not using collective dose for trending/analysis for whatever reason. Or would need to say that collective dose would be < 10 micromrem and therefore not needed to be calculated. Need to have this in ERPP and SOPs.	Include section in MEI dose calculation to describe collective dose calculation as well, or create separate collective dose calculation SOP.	8/1/2022	Kamran Vaziri (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #22	SOP for writing Director's report includes section for periodic review of nearby land usage, population, etc. At specified frequency or during major changes. (i.e., building new apartment complex next to MI-30, etc.). Ensure information used in pathway calculations for MEI and population.	In ASER SOP, include section for periodic review of nearby land usage, population, etc. At specified frequency or during major changes. (i.e., building new apartment complex next to MI-30, etc.)	8/1/2022	Kamran Vaziri (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #23	Add item to FRCM Ch 11 to include requirement for DOE approval for alternative dose coefficients.	Add item to FRCM Ch 11 to include requirement for DOE approval for alternative dose coefficients.	1/1/2022	Matt Quinn

Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #24	Verify requirements exist in current SOP(s) or add requirements or create new SOP/TBD.	include discussion of meteorological monitoring (i.e., weather station info) in MEI dose calculation SOP. (reference 2.e.9)(c)	8/1/2022	Kamran Vaziri (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #25	Incorporate these 2.e.(9)(d) requirements in environmental ALARA program.	Incorporate 2.e.(9)(d) requirements in environmental ALARA program.	8/1/2022	Ben Russell (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #26	EMP updated to discuss all monitoring (area dosimeters, etc.)	duplicate - see action item 458.1 - 2.b-e #1	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #27	Review Shielding Assessments/SADs for other radiological detectors used in the accelerator for groundwater/environmental protection. (aka NuMI scarecrow)	Review detectors used for groundwater protection as noted in the Shielding Assessment/SAD for potential duplicate use for environmental monitoring in the ASER.	8/1/2022	Maddie Schoel (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 3 - Subparts 2.b-e	458.1 - 2.b-e #28	SOP(s) to discuss each sampling/monitoring type, how monitoring locations are determined for each type, surveillance frequencies for each type, and who/which group is responsible for which type. Also something to discuss how all groups/monitoring works together to satisfy this requirement. a. ERPP will say that EMP describes the monitoring that's performed. b. But still need SOP(s) to implement & discuss how this is done. c. Update/create/include Form for recording results. Would then be reviewed as required, and sent/collected by individual for including in annual report. Consistent format/layout, helps ensure all info gets to appropriate person, etc. (appropriate person = new ERPP role) d. Ensure SOPs/EMP discusses how monitoring ensures compliance with all parts of CRD (public dose, biota, etc.)	in determining information to include in the ASER SOP (see action item 2.b-e #3), work with EP and RPO to understand current status of monitoring SOPs (i.e., soil sampling, surface water sampling, sump sampling, area monitoring, air emissions, etc.) and update as needed.	8/1/2022	Maddie Schoel (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #1	Update ALARA process, implement environmental ALARA program plan	duplicate - see action item 458.1 - 2.b-e #8	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #2	Ensure SOPs for monitoring reference/use environmental ALARA program plan	Review ESH EP and RPO routine monitoring procedure (i.e., sump, soil, surface water, area monitoring, etc.) to ensure appropriate ALARA review performed based on results.	1/1/2023	Ben Russell & Joel Fulgham
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #3	Ensure ERPP discusses non-applicability of this section (2.f.(2)) because radium-226 not stored/disposed of at Fermilab.	Ensure ERPP discusses non-applicability of this section (2.f.(2)) because radium-226 not stored/disposed of at Fermilab.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #4	Ensure SOP exists for NESHAP calculations and reporting, as part of EMP.	Ensure NESHAP calculation included in MEI (and collective/calculation) dose calculation SOP	8/1/2022	Kamran Vaziri (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #5	Review existing NESHAP documentation, formalize and add information as needed. Detailed look at 40 CFR Part 61 Subpart H to ensure program/calculations/documentation sufficient/compliant.	Review 40 CFR Part 61 Subpart H to ensure NESHAP calculations (included in MEI) dose calculation are sufficient	8/1/2022	Kamran Vaziri (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #6	Update EP Note #9 (ESH DocDB 2165)	Update EP Note #9 (ESH DocDB 2165)	6/1/2023	Ben Russell (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #7	ERPP discusses non applicability of Subparts Q & T	Include discussion in ERPP of non applicability of Subparts Q & T	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #8	ERPP discusses non applicability of 2.f.(4)	Include discussion in ERPP of non applicability of 2.f.(4)	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #9	ERPP discusses non applicability of 2.f.(5)	Include discussion in ERPP of non applicability of 2.f.(5)	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #10	Ensure this requirement (2.g.(1)) discussed in ERPP.	Include statement in ERPP of 2.g.(1) applicability	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #11	Review & update FESHM 8000 series & FRCM 11 to ensure this requirement clearly included and consistent language.	Review & update FESHM 8000 series to ensure 458.1 2.g.(1) requirement is clearly included and consistent language. Review & update FRCM 11 to ensure 458.1 2.g.(1) requirement is clearly included and consistent language.	9/1/2022 9/1/2022	Matt Quinn & Chris Greer & Eric Mieland Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #12	Ensure how this requirement (2.g.(1)) is implemented is already captured through subpart e action items.	duplicate - see action items 458.1 - 2.b-e #9-28	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #13	Review TBDs & SOPs to ensure sufficient details	Specific details needed in Technical Basis and related SOPs addressed in various TB and SOP related action items	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #14	Ensure any action items/updated documentation for ALARA (part 2.d) include reference to liquid releases. (FRCM Ch 11 already has this requirement)	Ensure environmental ALARA program discusses liquid releases	8/1/2022	Ben Russell (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #15	Ensure any action items/updated documentation for ALARA (part 2.d) include reference to groundwater considerations/controls/monitoring.	Ensure environmental ALARA program discusses groundwater controls and monitoring	8/1/2022	Ben Russell (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #16	Ensure FRCM Ch 11 includes statement "managed in a manner that protects ground water resources now and, in the future, based on use and value considerations". a. Review EMP to ensure sampling requirements updated as needed for "future" component.	Ensure FRCM Ch 11 includes statement "managed in a manner that protects ground water resources now and, in the future, based on use and value considerations".	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #17	Ensure SOPs for ERPP actionable items contain way to ensure personnel trained/retrained on SOP.	Ensure OIT/procedure signature sheet (or associated training in TRAIN) for release & clearance surveys Ensure procedure signature sheet (or associated training in TRAIN) for MEI calculations	6/1/2022 8/1/2022	Ben Russell Kamran Vaziri (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #18	Investigate further the applicability of this part (2.g.(4) - analyzing for settleable solids) for either/or alpha or beta/gamma radionuclides. a. Is this (analyzing settleable solids) included in EMP? (from separate requirement for environmental standards/requirements). Info could help make decisions for radionuclide analysis.	Investigate applicability of this part (458.1 Part 2.g.(4)).	1/1/2022	Eric Mieland & Matt Quinn (and future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #19	If 2.g.(4) is determined applicable, FRCM updated to include requirement & SOPs created to perform analysis, set thresholds for action items below limits, etc.	If 458.1 Part 2.g.(4) is determined to be applicable, update FRCM to include requirements, set thresholds, and generate any necessary SOPs.	1/1/2023	Eric Mieland (and future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #20	If 2.g.(4) is determined applicable, ERPP/somewhere should discuss why this was not done previously.	If 458.1 Part 2.g.(4) is determined to be applicable, discuss in EMP (or determine more appropriate document) for why it was not done previously.	3/1/2022	Eric Mieland (and future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #21	Discuss not needing BAT at present and possible revisiting in the future in the ERPP. (reference 2.1(2)(g) for documentation requirements if we ever needed to do BAT selection, if average concentrations go over DCS)	Discuss in ERPP not needing BAT at present and possible revisiting in the future in the ERPP. (reference 2.1(2)(g) for documentation requirements if we ever needed to do BAT selection, if average concentrations go over DCS)	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #22	Update FRCM ch 11 to limit liquid releases to %10 of DCS for annual average concentration	Update FRCM ch 11 to limit liquid releases to %10 of DCS for annual average concentration	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #23	Develop TBD for collective uptake to get an upper limit for concentrations that would require BAT.	Create EP Note discussing use of Best Available Technology (BAT) if total collective dose > 100 person-mrem, or 50% of total collective dose is due to liquid discharges.	1/1/2024	Matt Quinn (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #24	Follow up with ERPP on SOPs to ensure they are compliant with this part.	Review EP SOPs to ensure monitoring is appropriate to ensure compliance with 458.1 Part 2.g.(7) (40 CFR Part 141).	3/1/2022	Matt Quinn & Eric Mieland
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #25	Ensure a. All elements discussed in ERPP/EMP/FRCM/somewhere. b. Required monitoring added to applicable program (EP). c. Annual report includes sanitary sewer discharges d. FRCM requirements to notify FSD for unusual releases e. Specifically: i. 2 - discuss in ALARA statement ii. 3 - ensure monthly and annual concentration compared to DCS to discuss non-applicability of 2.g.(5)(a)(3) and 2.g.(5)(a). iii. 5 - discuss how buildup and potential long-term issues is addressed in ERPP/EMP/FRCM/somewhere	Ensure appropriate liquid effluent monitoring in place, add additional if needed. Include sanitary sewer discharge information in ASER Review FRCM Ch 11 to ensure FSD updated for any unusual liquid effluent release (update if needed) Ensure liquid effluent discharges are reviewed per environmental ALARA review requirements. Review potential long-term build up due to effluent release, and include statement in appropriate document (TBD).	1/1/2022 3/1/2022 8/1/2022 1/1/2024	Matt Quinn Kamran Vaziri (for future ERPP Manager) Matt Quinn Ben Russell (for future ERPP Manager) Matt Quinn (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #26	Review FESHM 8025 and other applicable chapters for consistency	Review FESHM 8025 and other applicable chapters for consistency with 458.1 section 2.g.8(a)	1/1/2023	Chris Greer & Eric Mieland
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #27	Understand what agreements/contracts/etc. Are currently in place with other facilities that would need to be monitored/etc. To ensure no violation (similar to EP monitoring for tritium for IPEA, City of Batavia, etc.)	Understand what agreements/contracts/etc. Are currently in place with other facilities that would need to be monitored/etc. To ensure no violation (similar to EP monitoring for tritium for IPEA, City of Batavia, etc.)	3/1/2022	Eric Mieland
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #28	Discuss non-applicability of 2.g.8.b in FESHM/FRCM/ERPP/EMP/somewhere since we don't discharge to federally owned sanitary sewer systems	Discuss non-applicability of 2.g.8.b in FRCM as Fermilab does not discharge to federally owned sanitary sewer systems	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #29	Look into need for adding statement in annual environmental report to director/ASER. (2.g.(8)(b))	Review ASER SOP to determine if statement addressing 2.g.(8)(b) is needed	8/1/2022	Kamran Vaziri (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #30	Determine if prohibition of soil columns already discussed in FESHM/somewhere. a. If not: Discuss prohibition of soil columns in FESHM/FRCM/ERPP/somewhere.	Update FRCM Ch 11 to prohibit the use of soil columns.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #31	Determine stakeholders related to soil columns, ensure their awareness of prohibition. (FESS, EP, RP, who else?)	Determine stakeholders related to soil columns, ensure their awareness of prohibition. (FESS, EP, RP, who else?)	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #32	Clarify process vs non-process in EMP and FESHM 8025, FRCM Ch11. Determine if terms should be specifically defined somewhere.	Review FRCM Ch 11 to ensure action levels ensure compliance with 458.1 Part 2.g.(10). UPDATE: Ch 11 reviewed and confirmed action levels ensure compliance.	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j(k)	458.1 - 2.f-j(k) #33	Investigate potential for including water monitoring results in MEI calculation.	Investigate potential for including water monitoring results in MEI calculation.	8/1/2022	Kamran Vaziri (for future ERPP Manager)

Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j81	458.1 - 2.f-j81#34	include something in ERPP about EMP covering monitoring of storm water runoff.	Include a statement in ERPP section 2.g.(11) about EMP covering monitoring of storm water runoff.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j82	458.1 - 2.f-j81#35	Discuss in FESHM/FRCM/ERPP/somewhere that FINAL does not have spent nuclear fuel, so any related requirements are not applicable.	Discuss in ERPP that FINAL does not have spent nuclear fuel, so any related requirements are not applicable.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j83	458.1 - 2.f-j81#36	Identify other areas where rad waste is stored/managed.	Identify areas where material that has been declared as radioactive waste is stored and managed.	1/1/2022	Lisa Reger
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j84	458.1 - 2.f-j81#37	Deploy area monitor dosimeters to rad waste storage/management facilities. (Similar to what's recommended to be done for monitoring to ensure below 2.b.1.a limit, implement similar here to track/monitor just from rad waste facilities.)	Ensure facilities identified as locations where material that has been declared as radioactive waste is stored and managed are monitored through the ESH RPO routine area monitoring program, and ensure below dose limit specified in 2.h.(1)	4/1/2022	Joel Fulgham
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j85	458.1 - 2.f-j81#38	Ensure results of area monitors for rad waste storage/management facilities is specifically reviewed against this TED < 25 mrem. a. Routine monitoring program. b. RPO Routine Monitoring program for area monitoring dosimeters updated to ensure results reviewed against this TED < 25 mrem in a year time.	duplicate - see action item 458.1 - 2.f-j81#37	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j86	458.1 - 2.f-j81#39	Not applicable (2.h.(2)) - don't have (1) spent nuclear fuel or (2) high-level & transuranic waste. Discuss in ERPP/somewhere.	Discuss in ERPP the non-applicability of (2.h.(2)) as Fermilab does not have (1) spent nuclear fuel or (2) high-level & transuranic waste.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j87	458.1 - 2.f-j81#40	Not applicable - FINAL doesn't have tailings or waste produced by the extraction or concentration of uranium or thorium, or other wastes containing uranium or thorium. Discuss in ERPP/something.	Discuss in ERPP the non-applicability of (2.h.(4)) as Fermilab does not have tailings or waste produced by the extraction or concentration of uranium or thorium, or other wastes containing uranium or thorium.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j88	458.1 - 2.f-j81#41	Reference low-level waste certification program in ERPP.	Reference low-level waste certification program in ERPP section 2.h.(5).	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j89	458.1 - 2.f-j81#42	Suggest reference in low level waste certification program & procedures to this article (2.h.(5)).	Suggest updating Low Level Waste procedure to specifically reference 458.1 Part 2.h.(5)	1/1/2022	Lisa Reger
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j90	458.1 - 2.f-j81#43	Discuss non-applicability of 2.1.1 in ERPP, use domestic water rather than having own drinking water plant.	Discuss non-applicability of 2.1.1 in ERPP, use domestic water rather than having own drinking water plant.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j91	458.1 - 2.f-j81#44	Suggest point to EMP and Groundwater Management Plan for satisfying this requirement (2.i.(2)(a)) in the ERPP	Point to EMP and Groundwater Management Plan for satisfying the requirement of (2.i.(2)(a)) in the ERPP	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j92	458.1 - 2.f-j81#45	Discuss 2.i.(2)(b) in ERPP, point to NEPA/Shielding Assessments and sampling programs	Discuss 2.i.(2)(b) in ERPP, point to NEPA/Shielding Assessments and sampling programs	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j93	458.1 - 2.f-j81#46	Update sampling procedures to reference this part (2.i.(2)(b)).	Review well monitoring procedures to ensure possible sources of, and potential for, radiological contamination is identified and assessed. Update as needed. (Suggest having formal review of programmatic changes during accelerator shutdowns, typically FYQ4, and implement monitoring changes in FYQ1.)	10/1/2022	Maddie Schoel & Eric Korziniowski
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j94	458.1 - 2.f-j81#47	Update sampling procedures to reference 2.i.(2)(5), and include discussion about how sampling locations are determined, frequencies determined, etc. As part of the methodology.	Review well monitoring procedures to ensure sampling location determination and methodology is discussed.	10/1/2022	Maddie Schoel & Eric Korziniowski
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j95	458.1 - 2.f-j81#48	Repeat biota assessment performed in 1989 to confirm no impact to biota, confirming no need for biota routine monitoring.	duplicate - see action item RPP #R1	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j96	458.1 - 2.f-j81#49	Determine appropriate document (EMP, Env. ALARA statement, etc.) to include requirement to periodically review/update biota assessment to ensure up-to-date with Lab operations. (Reference Note)	Investigate method for implementing review and update of R/EP Notes (Technical Basis documents) at some frequency.	9/1/2022	Maddie Schoel (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j97	458.1 - 2.f-j81#50	Discuss 2.i.(2) in ERPP	Include in ERPP description of compliance with 2.i.(2) through human radiation protection, as in FRCM Ch 11.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j98	458.1 - 2.f-j81#51	Review/update program and procedure documents for material release and routine monitoring/sampling to include record retention requirements, reference this section (2.i.(2)(8)). Should also point to where records are saved.	duplicate - see action item 458.1 - 2.f-j81#59	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j99	458.1 - 2.f-j81#52	Review FRCM Chapter 7 to see if 2.1.2 items can be more explicitly included.	Review FRCM Chapter 7 to see if 2.1.2 items can be more explicitly included.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j100	458.1 - 2.f-j81#53	Update MEI/dose to public SOP to include specific items to be saved as records and include location(s) they are saved.	Ensure MEI dose calculation include records retention information	8/1/2022	Kamran Vaziri (for future ERPP Manager)
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j101	458.1 - 2.f-j81#54	Add item to FRCM Ch 7 to include this requirement (2.i.(2)(c)).	Add item to FRCM Ch 7 to include the requirement of (2.i.(2)(c)) for keeping records of requests for specific authorization for temporary public dose limits, and subsequent approvals and other related actions.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j102	458.1 - 2.f-j81#55	Include environmental ALARA program determinations in list of elements in Article 712	Include environmental ALARA program determinations in list of elements in FRCM Article 712.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j103	458.1 - 2.f-j81#56	Review FRCM Chapter 7 to include more information on electronic records	Review FRCM Chapter 7 to include more information on electronic records	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j104	458.1 - 2.f-j81#57	Review ESH record retention policy to see if any additional updates to FRCM 7 are needed.	Review ESH record retention policy to see if any additional updates to FRCM 7 are needed.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j105	458.1 - 2.f-j81#58	Include item in FRCM Chapter 7 to address this specific requirement.	Include item in FRCM Chapter 7 to address the specific requirement from 2.1.2.(g)	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j106	458.1 - 2.f-j81#59	Review SOPs, program documents to verify that locations for records are documented.	Ensure Release & Clearance Program discusses records retention requirements	5/1/2022	Maddie Schoel & Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j107	458.1 - 2.f-j81#60	Consider a single document or location for saving these records.	Ensure Release & Clearance SOPs discuss where records are saved and associated retention requirements/	6/1/2022	Ben Russell
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j108	458.1 - 2.f-j81#61	Investigate potential single location for release survey records retention	Investigate potential single location for release survey records retention	5/1/2022	Maddie Schoel & Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j109	458.1 - 2.f-j81#62	Update SOPs for "waste" and "waste, hold for decay" (railhead, NTSB, CZero, etc.) to specify what survey/historical information needs to be maintained, and where that record is kept.	Investigate method for gathering and retaining long-term storage & radionuclide information for material that is declared waste but being held for decay. (And determine who is responsible for maintaining those records.)	6/1/2022	Maddie Schoel
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j110	458.1 - 2.f-j81#63	For rad material just in storage a. Need to confirm if an inventory for every item is required - if so, need to implement b. If inventory for every item not required, need to update FRCM/SOPs to specify what surveys records are performed for stored material and where they're kept.	Update ESH RPO routine monitoring program for snop surveys to specify that snop surveys serve as record for material with residual radioactivity, since the Lab does not have an inventory system for all stored radioactive material, to satisfy 458.1 Part 2.i.(2)(8)	3/1/2022	Joel Fulgham & Maddie Schoel
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j111	458.1 - 2.f-j81#64	FRCM and SOPs for clearance of property specifies that records of the final clearance survey are maintained as part of the records retention program	Ensure final clearance SOP and forms clearly state where it's saved and records retention requirement.	6/1/2022	Ben Russell
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j112	458.1 - 2.f-j81#65	ERPP/FRCM describes need for documenting Approved Authorized Limits, any revised Authorized Limits, and scenarios evaluated for selecting the limits, if/when Authorized Limits need to be used. If ever used, Authorized Limits should be specified in survey/clearance SOP.	In ERPP section 2.1.2.(8) and FRCM Ch 7, describe the need for documenting Approved Authorized Limits, any revised Authorized Limits, and scenarios evaluated for selecting the limits, if/when Authorized Limits need to be used. If ever used, Authorized Limits should be specified in survey/clearance SOP.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j113	458.1 - 2.f-j81#66	ERPP states that ASER includes summary of cleared property.	In ERPP section 2.1.2.(j) state that ASER includes summary of cleared property.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j114	458.1 - 2.f-j81#67	ASER "outline" ensures that summary of cleared property is included. Procedure on how to gather that information. (See action items for Subpart 2.k)	duplicate - see action item 458.1 - 2.b-e#1	can close - 9/1/2021	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j115	458.1 - 2.f-j81#68	FRCM statement to transfer any records to DOE after that program/rad activity is done. (General: if all source work is done, if all accelerator work is done, etc.)	Include a statement in FRCM Ch 7 to transfer any records to DOE after that program/rad activity is done. (source, accelerator, etc.)	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j116	458.1 - 2.f-j81#69	FRCM statement that records shall be maintained according to records retention program, or unless disposition is authorized by DOE. (possibly combine with Action Item #67 - maintain according to records retention program or transfer to DOE when rad work at FINAL done)	Include a statement in FRCM Ch 7 that records shall be maintained according to records retention program, or unless disposition is authorized by DOE.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j117	458.1 - 2.f-j81#70	FRCM statement clarifying that incidents related to 458.1 (and 835) are held to ORPS reporting requirements in FESHM 3000 series.	Include a statement in FRCM Ch 7 clarifying that incidents related to 458.1 (and 835) are held to ORPS reporting requirements in FESHM 3000 series.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j118	458.1 - 2.f-j81#71	Confirm DOE O 231.1B requirements for reporting. If not already included in FESHM 3000 statement, include in FRCM statement in Action Item 2.f-j81#69.	Confirm DOE O 231.1B requirements for reporting. If not already included in FESHM 3000 statement, include in FRCM statement in Action Item 2.f-j81#69.	1/1/2022	Matt Quinn
Internal 458.1 Detailed Crosswalk Part 4 - Subparts 2.f-j119	458.1 - 2.f-j81#72	Include statement in FRCM for appropriate units - all units of curie, rad, roentgen, or rem, including multiples and subdivisions of these units, or other conventional units, such as dpm, dpm/100 cm ² , or mass units. The SI units, becquerel (Bq), gray (Gy), and sievert (Sv) may be provided parenthetically for reference with scientific standards.	Include statement in FRCM Ch 7 for appropriate units - all units of curie, rad, roentgen, or rem, including multiples and subdivisions of these units, or other conventional units, such as dpm, dpm/100 cm ² , or mass units. The SI units, becquerel (Bq), gray (Gy), and sievert (Sv) may be provided parenthetically for reference with scientific standards.	1/1/2022	Matt Quinn