	DOCUMENT	PAGE	Section	Comment/Issue	FERMI Comment/Issue Response	DOE Disposition
1	ASE Apendix A	Document	N/A	In accordance with DOE-HDBK-1163-2020, Standard Industrial Hazards(SIH) are hazards that are generally well understood and coverered by codes, standards, or other consensus standards. I am not sure if FERMI considers ODH as a SIH but since it is not covered by any codes, standards, or other consensus standard then this ASE must develop CC that will address the ODH concerns assocaietd with applicable accelerator facilities.		
2	ASE Apendix A	Document	N/A	Radiation detectors linked to the RSIS are required in the Shielding Assessment. These are not discussed in the ASE. Are the radiation area detectors/monitors (i.e Chipmunks, Fox, TLMs, etc) a credited control? They are not listed anywhere in the ASE. Further, how do other engineered controls that are required in the SA fit into the ASE as credited controls?		
3	ASE Appendix A	Throughout	Throughout	The ASE discusses controls and requirements that are to be implmeneted and followed to ensure the level of risk to all workers, the public and the environment is maintained at acceptable levels. However, there is no risk analysis or risk matrix included in the ASE to justify this statement.		
4	ASE Appendix A	Throughout	Throughout	There is no mention of the Configuration Management Program. Does this fall under administrative credited control process?		
5	ASE Apendix A	Throughout	Throughout	In various areas throughout the ASE, it was observed that the use of other words to describe Credited Controls (CC's) are documented (e.g., Condition, Control, Surveillance, etc.).For consistancy, please update the entire document and only use "Credited Contol".		
6	ASE Apendix A	Throughout	Throughout	Consider changing the format of the ASE to a simple easy to use format. E.g., Section 1 Introduction to define the CC for the accelerator, unplanned lose of CC/ASE violations, planned and discovered USIs, USI high level process, Section 2 ALL CC (i.e, engineered, administrative, configuration management for CC, Required calibration, maintenance, and inspection schedules for CCs. I would also suggest that each of these areas allow for a brief write up documenting the Basis/Context.		
7	ASE Appendix A	7 of 15	Accel Safety Envelope	The statement "Variations beyond these limits are a violation of the ASE." is in contradiction to current practice. For example, overburden sink holes are a variation beyond the defined limit of credited passive controls defined in the current ASE (page 8 of 15). Any variation is a violation.		
8	ASE Appendix A	7 of 15	Credited Controls	Where is the risk analysis/matrix to justify this statement and what is an acceptable level of risk? "Credited controls identified in the ASE are the primary controls that assure that the level of risk to all workers, the public, and the environment is maintained at acceptable levels."		
9	ASE Appendix A	7 of 15	Credited Controls	The following statement needs clarification. "The assigned Radiation Safety Officer (RSO) may specify equivalent controls in accordance with the FRCM that do not reduce the level of safety to allow for maintenance or repairs." The use of any equivalent controls during beam operations needs to be added to the ASE and must approved by FSO prior to implementation.		
10	ASE Apendix A	7	Creditted Contorls	The last sentence of the first paragraph states in part that the RSO may specify equivalent controls that do not reduce the level of safety to allow for maintanance or repairs. Is the intent to allow for use of equivalent cotrols during beam operations?		
11	ASE Apendix A	7	Accelerator safety Envelope	This section contains background information, some questionable, that is better captured in the SAD. Please see comment 6 and an example in comment # 10.		
12	ASE Apendix A	7	Creditted Contorls	This section contains background information, some questionable, that is better captured in the SAD. Please see comment 6 and an example in comment # 10.		
13	ASE Appendix A	7 of 15	Credited Controls	Where is the risk assessment to justify this statement and what is an acceptable level of risk? "Compliance with the requirements of the Beam Permit and Running Condition ensures that the level of risk to all workers, the public, and the environment is maintained at an acceptable level."		
14	ASE Apendix A	8	Credited Passive Controls	Permanent Shielding including labyrinths Controls :The is a vague CC that could be interpreted differently. The CC states in part that the shielding encompases the strucural elements. What is meant by structural elements? Additionally it states that it includes built in design features such as. Use of "such as" could lead personnel to believe that these are simply examples. Lastly, listing the earthen berms and overburden indicates to DOE that if there is ANY change to the lanscape (e.g., sinkhole, runoff, etc.) would be an ASE violation.		
15	ASE Apendix A	8	Credited Passive Controls	Permanent Shielding including labyrinths Surveillance: This CC should not refer personnel back to a procedure. This should simply state the requirement from the procedure (e.g., Inspect the integrety of the shielding prior to initial start up of the accelerator facility and every 12 months).		
16	ASE Apendix A	8	Credited Passive Controls	Movable Shielding Control: The CC states in part that movable shielding is any shielding that can be moved. Does this include moved by hand and an euqipment (e.g., crane, for lift, etc.)?		
17	ASE Apendix A	8	Credited Passive Controls	Movable Shielding Control: The CC states in part that movable shileding shall be used as necessary in accordance with the Fermillab shielding policies specified in the FESHM and FRCM. The CC should document something that shielding must be installed in its proper configuration and list the type of shielding(e.g., steel, concrete blocks, etc.) This followed up with the addition of a configuration management CC would ensure consistancy.		
18	ASE Apendix A	8	Credited Passive Controls	Movable Shielding Control: The CC states in part that movable shielding shall be locked in place or equivalent controls placed to assure correct placement. How is shielding locked and what would be an example of equivalency?		
19	ASE Apendix A	8	Credited Passive Controls	Movable Shielding Surveillance: This CC should not refer personnel back to a procedure. This should simply state the requirement from the procedure (e.g., Inspect the integrety of the shielding prior to initial start up of the accelerator facility and every 12 months).		

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20	ASE Apendix A	8	Credited Passive Controls	Penetrating Shielding Control: This CC is vague, can be interperted differently and needs clarity such as listing the penetrations that can be tracked in configuration management process and also labled as cc.		
21	ASE Apendix A	8 of 15	Credited Passive Controls: Permanent shielding & labyrinths	Control section: Only list the minimum required shielding for the specific facility here. Any deviation from the ASE (sink hole of earthen berm or overburden) will be considered an ASE violation.		
22	ASE Appendix A	8 of 15	Credited Passive Controls: Movable shielding	Control section: Only list the minimum required shielding for the specific facility here, in this case Spinquest.		
23	ASE Appendix A	8 of 15	Credited Passive Controls: Penetration shielding	Control section: Only list the minimum required shielding for the specific facility here, in this case Spinquest.		
24	ASE Appendix A	8 of 15	Credited Passive Controls: Penetration shielding	Surveillance Section: The penetration surviellance requirements need to be defined in this section. Do not point the reader to another document.		
25	ASE Apendix A	9	Credited Passive Controls	Radiation Fencing: This CC is ONLY applicable to radiation areas. What controls are in place for controlled areas? Since FERMI is open to the public, this CC needs to be more broad and include controls that ensure minors/members of the public and untrained employess do not receive 100mrem in a year.		
26	ASE Apendix A	9	Credited Passive Controls	Radiation fencing Surveillance: This CC should not refer personnel back to a procedure. This should simply state the requirement from the procedure (e.g., Inspect the integrety of the shielding prior to initial start up of the accelerator facility and every 12 months).		
27	ASE Apendix A	9	Credited Active Engineered Controls	Radiation Safety Interlock ControlSafety Envelope- Surveillance:This CC is vague and needs clarity. Additionally, the control needs to specify where interlocks are located to prevent beam during inadvertant accesses; ie are they located at all gates/doors/windows/emergency exit hatches/etc. An example could be the following - Access controls- During beam opertions, where beam is present to..... the access controls system must prevent enrty to the		
28	ASE Appendix A	9 of 15	Credited Active Engineered Controls: RSIS	Control Section: The statement " All circuits are designed in such a way that if a circuit fails, the failure would most likely initiate a system shutdown resulting in a safe condition." needs to be clarified. The wording "would most likely initiate" implies there is a chance the circuits are not fail safe.		
29	ASE Appendix A	10 of 15	Credited Administrative Controls: Accelerator Operational Approvals	Control: List the specific elements that are captured in the Beam Permit and Running Condition for clarification. Each element and associated admin control needs to be clearly stated in the ASE. Ie. List the beam power & operating parameters for Spinquest and required admin control. List theree are CDCs for Spinquest and associated administrative credited control in ASE. Do not point reader to an internal procedure. Summarize/define these in the ASE.		
30	ASE Appendix A	10 of 15	Credited Administrative Controls: Accelerator Operations Staffing	Safety Envelope: List the number of required Operators for Spinquest and their required location in ASE, in the remote control room or MCR?		
31	ASE Apendix A	11	Credited Administrative Controls	Accelerator Beam Intensity Limits - Safety Envelope: The CC states in part that beam intensities are monitored. Who monitors the beam intensities? If monitoring is being performed then it appears as though an added CC should be for personel oversight where you list the # of operators required in the control room during operations.		
32	ASE Appendix A	11 of 15	Credited Administrative Controls: Accelerator Beam Intensity Limits	Why are all limits listed in this ASE for Spinquest? Only list the intensity limits for the Spinquest beamline that is being reviewed.		
33	ASE Appendix A	12 of 15	ASE Violation Determination and Actions	This section is confusing. The statement "Determining whether a condition is a violation of the ASE may be subjective." contradicts the statement on Page 7 that states "Variations beyond these limits are a violation of the ASE." This section needs to be clarified to state that any variations from the bounds defined in this ASE is an ASE violation. This section needs to list the actions that will be taken if an ASE violation is identified (e.g., stop the activity causing the violation, work with DOE, etc). Do not point readers to an internal procedure, list the steps in the ASE specific to Spinquest.		
34	ASE Appendix A	12 of 15	ASE Violation Determination and Actions	Clarification is needed. This statement, "Any deficiencies found in a credited control that are not an ASE violation are handled in accordance with FESHM and FRCM requirements." contradicts the statement on Page 7 "Variations beyond these limits are a violation of the ASE."		
35	SAD Submittals	Throughout	Throughout	While DOE does not approve SADs, it should be understood that DOE needs to support the SAD otherwise there will be issues identified in the ASE. The contractor should benchmark how other laboratiories document there SADs, consider having seperate SADs and ASEs for each accelerator operations.		
36	SAD Submittals	Throughout	Throughout	Having one SAD and one ASE is problematic. It causes the reader confusion and also leads to the development of CC's that are generic and vague. As noted in comments 1-34 there are issues with the major portions of the ASE, including each of the listed CC's.		
37	SAD Submittals	Throughout	Throughout	The content in each of the SADs that were reviewed was broad. It lacked specific details explaining the facility, operational aspects, and function. They frequently referenced back to procedures/policies that may provide some or all of the details.		
38	SAD Submittals	Throughout	Throughout	There was no reference to configuration management in the ASE and/or SAD's. This practice would prove useful (e.g., shielding set up, etc.).		

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39	ASE and SAD Submittals	Throughout	Throughout	Please clarify how the USI process is implemented when only an internal procedure is referenced in the SAD and/or ASE as the method to control a hazard and no specific details are documented.		

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