The definitions shown below (Table 10 from the CDAT manual) describe the criteria used in Table 9 (in the manual),

2023 EM CDAT - Environmental Restoration Projects –						
A. COST - Criteria for Cost Estimate Ratings						
A1	Cost Estimate	A fully mature cost estimate must have been developed by the project and formally approved by the Federal Project For				
		Project Phase (DOE O 413.3B)	Level of Project Definition	Estimate Class	End Usage and CERCLA/RCRA Phase	CDAT Maturity Value
		CD-0/Approve Mission Need	0% to 2%	Class 5	Early investigations and preliminary planning; preliminary	1
		CD-1/Approve Alternative Selection & Cost Range	1% to 15%	Class 4	In depth investigations, evaluation of remedial alternatives and remedy selection; remedial investigation/feasibility study	2 or 3
		CD-2/Approve Preliminary Design	10% to 40%	Class 3	Preliminary planning and design of selected remedy; record of decision; preliminary remedial design. (Phase 2 and/or 3).	3 or 4
		CD-2/3 Approve design/Start of Construction	30% to 75%	Class 2	Intermediate Remedial Design Refined estimates for O&M and LTM. Final remedial action/remedial action implementation	4 or 5
		CD-3/Approve Start of Construction	65% to 100%	Class 1	Pre-Final/Final Remedial Design Detailed/remedial action, operations and maintenance and long-term monitoring plans	5
A2	Cost Risk/Contingency Analysis	The cost estimate includes contingency allowances developed in accordance with DOE guidance. In addition to any				
A3	Funding Requirements/Profile	Funding requirements have been defined and the project timeline is in compliance with the DOE budget				
A4	Independent Cost/Schedule Review	In addition to any internal cost and schedule estimate reviews, the cost estimate and schedule have been subjected to an independent review by an organization not directly involved with the project (Independent Cost Estimate, when				
A5	Life Cycle Cost	The project Life Cycle Costs (LCC) includes relevant assumptions, bases of estimate, qualifications, and exclusions.				
A6	Forecast of Cost at Completion	The cost baseline is approved, and the measurement of actual performance is begun, forecasts of costs at completion				
A7	Cost Estimate for Next Phase of Work	A detailed cost estimate is prepared and approved for the work scope to be accomplished during the next phase of the project (i.e., the efforts needed to successfully complete the prerequisites for the next Critical Decision). Cost				
B. SCHEDULE – Criteria for Maximum Rating						
B1	Project Schedule	A schedule has been developed, documented and approved by DOE, is identified in regulatory milestones, and is the				
B2	Major Milestones	Milestones are included at each level of the project schedule to establish a baseline and indicate significant progress				
B3	Resource Loading	The schedule is resource loaded, considers critical resources, and is consistent with the funding profile. The				
B4	Critical Path Management	A Critical Path is defined. Near-Critical Path activities are identified, and sensitivity analyses have been conducted.				
B5	Schedule Risk/Contingency Analysis	A probabilistic risk assessment has been conducted on the baseline schedule, and appropriate contingency added, as required. Assumptions, rationale, and methodology, used in the analysis are documented. Schedule risks are fully				
B6	Forecast of Schedule at Completion	The schedule baseline is approved, and the measurement of actual performance has begun, forecasts of completion dates are developed and issued at regular intervals in addition to presentations of schedule progress. Schedule				
B7	Schedule for Next Phase of Work	A detailed schedule is approved for activities to be accomplished during the next phase of the project (i.e., the efforts needed to successfully complete the prerequisites for the next phase of remediation, D&D or the next Critical				
C. SCOPE/TECHNICAL - Criteria for Maximum Rating						
C1	Preliminary Assessment/Site Investigation	The Preliminary Assessment/Site Investigation is complete and approved.				
C2	Remedial Investigation/RCRA Facility Investigation (includes Baseline Risk Assessment)	The Site PA is completed, reviewed by an independent team, and approved.				
C3	Feasibility Study (FS)/Corrective Measures Study (CMS)	The FS (or Corrective Measures Study) is complete and has been approved by all applicable parties.				
C4	Engineering Evaluation/Cost Analysis of Removal Actions/Early Actions	For CERCLA removal (early) actions, the Engineering Evaluation/Cost Analysis (EE/CA) is complete, the public comment period is complete, and DOE has approved the document.				
C5	Performance Assessment (PA)	The Site PA is completed, reviewed by an independent team, and approved				
C6	Technology Needs Identified and Available	Technology to be used has been identified and is currently available. If new technology is required, a technology development schedule supports the project schedule.				
C7	Technology Needs Demonstrated	New technology has been evaluated and determined to meet project objectives (technical, cost and schedule). Maturity of new technology to be used has been evaluated and factored into risk analysis by means of a Technology				
C8	Performance Requirements	Functional and performance requirements for the project are documented (approved by users and key stakeholders),				
C9	Waste Acceptance Criteria (WAC)	The on-site or off-site Waste Acceptance Criteria is documented, approved, and the requirements included into the design requirements for the project.				
C10	Proposed Plan (PP)	For CERCLA remedial actions, the PP is complete, and the public comment period is complete.				
C11	CERCLA Record of Decision (ROD)/Action Memorandum (AM)	The ROD is complete and has been signed by DOE, the state, and EPA. For CERCLA removal actions, the AM is complete. The public comment period is complete, and DOE has approved the document.				
C12	Natural Phenomena	Seismic, tornadoes, hurricanes, tropical storms, and other natural phenomena are considered in the remedy selection,				
C13	Remedial Design/D&D Plans	The Remedial Design (or RCRA Corrective Measures Design) is complete and approved.				

C14	Equipment Needs	Equipment needs have been identified and procurement schedules established. All engineered equipment and/or
C15	Remedial/D&D Design/Plans, Technical, and Safety-related Reviews for this phase	Remedial/D&D design, plans, technical and safety-related reviews of applicable planning documents have been conducted at each appropriate project phase. They have been performed by a multi-functional team representing appropriate disciplines and, if appropriate, external experts have been utilized. Review results, comments and
C16	Waste Storage, Packaging and Transportation	Storage, packaging and transportation requirements for nuclear and hazardous materials and wastes are identified and documented, including both off-site and in-plant transportation, as well as methods and equipment (casks,
C17	Training Requirements	Training requirements defined, planned and scheduled. Design considerations have been incorporated as
C18	Waste Characterization and Disposition	Waste streams generated (gaseous, solid, and liquid, both hazardous and non-hazardous) through construction, demolition, or environmental cleanup are sufficiently characterized to identify appropriate disposition alternatives
C19	Pollution Prevention and Waste Minimization	A detailed waste minimization/pollution prevention plan for the project, including any operational phases is • Support the waste management cost estimate for the cleanup and any processes. • Identify project options for waste treatment, storage, and disposal, including availability of future disposal • Integrate waste management plans with waste minimization/pollution prevention plans. • Characterize regulatory benefits and concerns associated with types and quantities of wastes expected.
C20	Environmental Monitoring Plan	The plan for monitoring the actual performance of the release site or disposal facility during construction is
C21	NEPA Documentation (Not Applicable to projects conducted under CERCLA Regulations)	All NEPA activities, including NEPA strategy and requirements, are complete and compliant with DOE Orders, as necessary. (Not Applicable to projects conducted under CERCLA Regulations)
C22	End Point Criteria and Closure Plan/Permit Modification	End Point Criteria have been defined, documented, and approved for soils, groundwater, facilities, spaces, systems, materials and wastes, consistent with meeting the established end state for the project. The Closure Plan for the
C23	Long Term Surveillance and Monitoring Plan/Post Disposition Monitoring Plan	The draft Long Term Surveillance and Monitoring Plan is complete. This plan will be finalized and approved at the conclusion of remediation/construction. For D&D, the Post Disposition Monitoring Plan is prepared, approved, and ready for implementation by the performing organization.
C24	Permits, Licenses, and Regulatory Approvals	Environmental regulations are identified. Potential environmental permitting issues have been identified. Strategy for addressing environmental permitting issues is defined and documented. Environmental permitting authorities
C25	Plot Plan	Plot plan is complete and shows location of the project in relation to adjoining facilities. It should include items such • Plant grid system with coordinate • Green space coordinates • Buildings • Project boundaries • Major pipe racks • Temporary staging areas • Gates and fences • Laydown areas • Off-site facilities • Construction/fabrication • Rail facilities • Tank farms areas • Major utilities • Roads and access ways • Nearby residences • Surface water • Decontamination areas
C26	Site/Facility Characterization (Including Surveys and Soil Tests) and radioactive inventory	Assessment of site-specific requirements completed. Survey and soil test evaluations of proposed facilities/release sites have been completed. Investigation and development of facility/site-specific characteristics sufficient to support final remedial/D&D planning/design and key assumptions are clearly documented. As applicable,
D. MANAGEMENT PLANNING AND CONTROL - Criteria for Maximum Rating		
D1	Mission Need Statement (MNS)	An approved Mission Need Statement exists. The project MNS demonstrates that the project relates to and supports
D2	Acquisition Strategy/Plan	An Acquisition Strategy/Plan has been developed and approved in accordance with DOE requirements and orders.
D3	Key Project Assumptions	A complete list of critical facts and circumstances that would affect project outcome if changed is available. These
D4	Project Execution Plan (PEP)	The PEP has been developed and approved in accordance with DOE requirements/orders. The PEP is the primary • Performance Baseline (Scope, Cost and Schedule), including a Resource Loaded Schedule for the duration of • Identification of any long-lead equipment and materials (including the technical basis for equipment sizing as • Project organization and roles and responsibilities. • Process for baseline change control and configuration management. • Discussion of planned design reviews and how they are to be conducted. • Project quality assurance organization and implementation approach. The PEP has been updated to reflect current project status, plans and performance baseline. Note: The Preliminary Project Execution plan (PPEP) which is required at CD-1, should be based on a defined
D5	Integrated Project Team (IPT) and Charter	The project organization and IPT charter are in place and functioning. The Integrated Project Team (IPT) has been in place since early project phases. The IPT participants' roles and responsibilities are clearly articulated. The
D6	Integrated Regulatory Oversight Program	Applicable Federal, state, and local government permits, licenses, and regulatory approvals, including strategies and requirements are identified and obtained in a timely manner or milestone dates established. Schedule for receipt of
D7	Baseline Change Control	There is a DOE approved process to review and approve proposed changes to cost, schedule, and technical baselines
D8	Project Control	A project control system is being used to manage the project baseline applying earned value techniques, variance
D9	Project Work Breakdown Structure (WBS)	Project Work Breakdown Structure is established and reflects the project through completion. WBS dictionary is complete, including a detailed Statements of Work (SOWs). Project schedule and costs directly aligned with WBS

D10	Resources Required (People/Material) for Next Phase	The resources required for next phase are identified and available. These resources are reflected in the resource-loaded schedule.
D11	Configuration Management	A configuration management program is functioning to ensure consistency among requirements, criteria, design,
D12	Project Risk Management Plan/Assessment	A risk management plan is developed and is included in the Acquisition Strategy/Plan and/or PEP, as appropriate. A risk mitigation strategy is in place. Project risk (technical and programmatic) is an accurate and complete estimate
D13	Project Risk Management Plan/Assessment Quality Assurance Program	A quality management system is defined and integrated into the processes governing activities that implement the project mission in compliance with requirements of 10CFR 830 Subpart A, Quality Assurance Requirements, DOE O 414.1 (series), Quality Assurance, and other applicable project specific quality requirements. A Quality Assurance (QA) program/plan is established. QA factors, including standards, specifications, and limitations are
D14	Value Engineering, Trade-Off, and Optimization Studies	Where appropriate, a value engineering program complying with DOE Orders is in place and qualified personnel have analyzed appropriate project functions using accepted industry techniques with the aim of improving
D15	Procurement Packages	Procurement packages are being developed in accordance with the Acquisition Plan and will have added details for
D16	Project Acquisition Process	The project is being accomplished in accordance with the established DOE Project Acquisition Process and in
D17	Funds Management	A funds management system is in place to ensure funds are allocated to support the project baseline elements for the
D18	Reviews/Assessments	Reviews (including External Independent Reviews (EIRs), Independent Project Reviews (IPRs) and Technical-IPRs)
D19	Stakeholder Program	A stakeholder program was established early in the planning phase of the project to take into account the concerns
D20	Inter-Site and On-Site Coordination	Key inter-site and on-site coordination issues are identified, addressed and resolved or plans are in place to accomplish their resolution.
E. SAFETY AND SECURITY - Criteria for Maximum Rating		
E1	Hazard Analysis/Safety Documentation	Addressing hazards early ensures that safety is "designed in" early instead of "added on" later with increased cost Requirements on the Integrated Safety Management System (ISMS) to be followed are described in DOE P 450.4, The ISMS process is applied to all Critical Decisions (CDs) and the Office of Health, Safety and Security (HSS) **Prior to CD-2/3:** • Inventory of available documents based on existing facilities/sites identified in the scope of the project to • Identify the potential hazards and their safety and risk implications in the mission need statement or RI/FS. • Include in the mission need DOE expectations for safety in design; identification of Safety in Design Tailoring **CD-0 to CD-1 (Alternative Selection and Cost Range:** • Hazardous conditions and associated likelihoods and consequences, both mitigated and unmitigated for each • Development of a Safety Design Strategy, • SSCs that prevent or mitigate the frequency and/or consequences of DBAs associated with project hazards and • Requirements for worker safety, radiation safety, criticality safety, fire safety, industrial safety, and life safety • Determine the qualified safety and health professionals in the Integrated Project Team necessary to support the **CD-2 to CD-3 (Performance Baseline):** Safety analysis activities that may be required should be integrated and performed concurrently and iteratively with • Updated Safety Plan - that demonstrates how an adequate safety plan is maintained on a step by step basis as the • Requirement for worker safety, radiation safety (including ALARA), criticality safety, industrial safety, fire • Hazard Analysis Report has been updated, reviewed and approved if required. For CD-2 to CD-3. The Integrated Safety Management Process has been validated for D&D/remediation activities.
E2	Integrated Safeguards & Security Planning	The security approach and potential requirements for the project are documented to aid in the development of the integrated safeguard and security plan. Safeguard and security requirements are identified and documented and
E3	ES&H Management Planning	Environmental, safety and health requirements, as delineated in Federal, DOE, state, site and local laws and
E4	Emergency Preparedness	Emergency management considerations are adequately reflected in the project planning and design and meet