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Standard Classification for Life-Cycle Environmental Work Elements—Environmental Cost Element Structure¹

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1. Scope

1.1 This standard establishes a classification of the comprehensive hierarchical list of elements for life-cycle environmental work. The classification is based on the Interagency Environmental Cost Element Structure (ECES)². Elements, as defined here, are major components common to environmental projects. The elements represent the life-cycle activities for environmental projects regardless of the project design specification, construction method, technology type, or materials used. The classification serves as a consistent reference for cost estimating, analysis, and monitoring during the various phases of the project life cycle. Using ECES ensures consistency, over time and from project to project, in the cost management and performance measurement of environmental projects. It also enhances reporting at all phases of a project, from assessment and studies through design, construction, operations and maintenance (O&M), and surveillance and long-term monitoring (SLTM).

1.2 This classification applies to all environmental work, including environmental restoration, waste management, decontamination and decommissioning (D&D), surveillance and long-term monitoring, and technology development.

1.3 The use of this classification increases the level of standardization, uniformity, and consistency of collected environmental project costs. Such uniformity and standardization allows for ease of understanding project costs, provides a common “cost language” for sharing and comparing cost information, and allows for easier analysis and calibration of cost data. This standard classification can be used as a checklist of activities to be completed in environmental projects.

2. Terminology

2.1 *Definitions*—For definition of terms used in this classification, refer to Terminology E 833.

2.1.1 *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*—Also known as “Super-

fund,” CERCLA prescribes actions, and regulatory requirements for reducing risks to human health and the environment resulting from releases or threatened releases of hazardous substances into the environment.

2.1.2 *Resource Conservation and Recovery Act (RCRA)*—A congressional mandate that requires the management of regulated hazardous waste and requires that permits be obtained for facilities (both private and public) that treat, store, or dispose of hazardous waste.

2.1.2.1 *Discussion*—RCRA also establishes standards for these facilities and requires corrective actions (e.g., remediation) of past releases of hazardous waste from regulated waste management units.

2.2 *Acronyms:*

2.2.1 *AST*—Aboveground Storage Tank

2.2.2 *CERCLA*—Comprehensive Environmental Response, Compensation, and Liability Act

2.2.3 *CLP*—Certified Laboratory Procedure

2.2.4 *CMS*—Corrective Measure Study

2.2.5 *COA*—Code of Accounts

2.2.6 *CWM*—Chemical Warfare Materials

2.2.7 *D&D*—Decontamination and Decommissioning

2.2.8 *DOE*—Department of Energy

2.2.9 *(EC)*²—Environmental Cost Engineering Committee

2.2.10 *ECAS*—Environmental Cost Analysis System

2.2.11 *ECES*—Environmental Cost Element Structure

2.2.12 *EM*—Environmental Management

2.2.13 *EPA*—Environmental Protection Agency

2.2.14 *ER*—Environmental Restoration

2.2.15 *FRTR*—Federal Remediation Technologies Roundtable

2.2.16 *FS*—Feasibility Study

2.2.17 *HRS*—Hazard Ranking System

2.2.18 *HTRW*—Hazardous, Toxic, and Radioactive Waste

2.2.19 *LTSM*—Long-Term Surveillance and Maintenance

2.2.20 *O&M*—Operations and Maintenance

2.2.21 *OECD*—Organization of Economic Cooperation and Development

2.2.22 *PA/SI*—Preliminary Assessment/Site Investigation

2.2.23 *RA*—Remedial Action

2.2.24 *RACER*—Remedial Action Cost Estimating Requirement (System)

2.2.25 *RCRA*—Resource Conservation and Recovery Act

¹ This classification is under the jurisdiction of ASTM Committee E06 on Performance of Buildings and is the direct responsibility of Subcommittee E06.81 on Building Economics.

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² ECES was developed by the Interagency Environmental Cost Engineering Committee to increase effectiveness of cost management for federal environmental projects. The complete ECES is available at <http://www.em.doe.gov/aceteam>.