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NASA Procedural Requirements

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Subject: Environmental Compliance and Restoration Program (Revalidated on April 5, 2016 with Change 1)

Responsible Office: Environmental Management Division[| TOC](#) | [ChangeHistory](#) | [Preface](#) | [Chapter1](#) | [Chapter2](#) | [Chapter3](#) | [Chapter4](#) | [Chapter5](#) | [AppendixA](#) | [AppendixB](#) | [ALL](#) |

Appendix A. Definitions

Activity--An operation that sustains NASA as an organization. Unlike projects, which are temporary and unique, activities are ongoing and repetitive (e.g., Environmental Functional Reviews (EFR), day-to-day management, and other program support tasks).

Analysis of Alternatives--A formal analysis method that compares alternatives by estimating their ability to satisfy mission requirements through an effectiveness analysis and by estimating their life-cycle costs through a cost analysis. The results of these two analyses are used together to produce a cost-effectiveness comparison that allows decision makers to assess cost and effectiveness simultaneously. An analysis of alternatives broadly examines multiple elements of program/project alternatives (including technical performance, risk, life-cycle costs, and programmatic aspects) and is typically an important part of formulation studies. The terms, trade studies, trades, and tradeoff analyses are often used in lieu of analysis of alternatives, when the scope of the analysis is more limited.

Approval--An acknowledgement by the responsible official that the program/project, or a phase of a project, has met expectations and formulation requirements; and that proposed personnel assignments, cost estimates, transfers of funds are acceptable, or other actions are acceptable.

Capital Compliance Projects--An ECFL project that is Center-initiated to support the Agency's sustainability efforts or for necessary facility improvements in response to new or changing environmental regulatory requirements (e.g., boiler retrofits, generators, diesel equipment, or wastewater treatment systems required to meet revised regulatory standards).

CERCLA Cleanups--An ECR Restoration Project related to corrective actions in response to releases or threatened releases of hazardous substances, pollutants, or contaminants regulated under CERCLA.

Closure--A Restoration Project life-cycle phase. During this phase, the operations have ceased and post-closure surveillance, long-term monitoring, or maintenance of a shutdown facility ends. Additionally, decommissioning of infrastructure occurs, along with restoration of property.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)--Commonly known as Superfund, the Act was enacted by Congress on December 11, 1980 (42 U.S.C., Sections 9601-9675). This law provides Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.

Compliance Agreements--A category of legal decrees that include, but are not limited to, Federal Facility Agreements, Interagency Agreements, settlement agreements, consent orders, and compliance orders and changes to these orders such as a Record of Decision or a Statement of Basis. They do not include Federal and state environmental requirements not implemented by compliance agreements, such as cleanup work required under certain RCRA permits that authorize waste treatment operations.

Compliance--Conforming to a legal, policy, or procedural requirement.

Component Facilities--Complexes that are geographically separated from the NASA Center or institution to which they are assigned.

Concurrence--The process of reviewing and providing agreement to a document, product, or service within an individual's span of responsibility.

Consent Order (Administrative Order On Consent)--A legal agreement signed by a regulating agency and an individual, business, or other entity through which the violator agrees to pay for correction of violations, take the required corrective or cleanup actions, or refrain from an activity. It describes the actions to be taken, may be subject to a comment period, applies to civil actions, and can be enforced in court.

Contract--A mutually binding legal relationship obligating the seller to furnish the supplies or services (including construction) and the buyer to pay for them. In addition to bilateral instruments, contracts include, but are not limited to: awards and notices of awards; job orders or task letters initiated under basic ordering agreements; letter contracts; orders, such as purchase orders under which the contract becomes effective by written acceptance or performance; and bilateral contract modifications.

Decision Authority--The individual responsible for evaluating program or project recommendations, assessing program and project deliverables, and making the decision that authorizes a program or project to transition to the next life-cycle phase.

Design--A Restoration Project life-cycle phase. During this phase, remedial design plans and specifications, and an engineering cost analysis are completed.

ECR Project--Represents a specific investment with defined requirements, a beginning, life-cycle phases and costs, and an end. The phased approach to defining and implementing projects allows the EMD and Project Managers to better plan projects prior to making funding requests and to assess progress during project execution. An ECR project has a defined management structure, as described in Chapters 4 and 5. ECR projects interface with other projects and agencies as established in its project plan.

ECR Program--A strategic investment by the Office of Strategic Infrastructure that has a defined technical approach, requirements, funding level, and a management structure that initiates and directs one or more projects. The ECR Program defines a strategic direction that NASA has identified as being needed to implement Agency goals and objectives for environmental compliance, restoration, and management.

ECFL Study--An ECR project initiated at a Center/Component Facility that has a potential benefit of addressing Agency risks, realizing opportunities (e.g., identifying environmental or energy performance improvements), leveraging external resources, or establishing external partnerships. ECFL studies include review of changes in applicable legal and other requirements and regulations to determine applicability to Centers and Component Facilities; development of strategies for implementing new regulatory requirements; and analysis of specific problems to determine a course of action.

End of Design Life--Refers to the time period that would allow a reasonable economic return on investment, after which, the unit would be expected to meet performance specifications of the day or be shut down.

Engineering Evaluation Cost Analysis--Analysis of the factors contributing to the costs of operating a remediation system and of the costs which will result from alternative procedures.

Environmental Functional Review--Analysis of a Center's compliance with environmental laws, regulations, policies, including management structures and systems in place, to ensure that environmental risks are identified and mitigated.

Environmental Management Panel--A panel that advises the Environmental Management Division on the research and implementation of ECR-funded environmental programs, issues, and initiatives.

External Agreement--An agreement with a party outside of NASA that results in the obligation of ECR funds (e.g., Consent Orders, Compliance Agreements, PRP Agreements).

Headquarters Initiative--Agency-wide ECR projects and activities initiated and managed by EMD.

Implementation--The execution of approved plans for the development and operation of programs and projects and the establishment of control systems to ensure performance to plan and align with current Agency strategies.

Interim Action--An action to quickly address a threat associated with a site. The action is generally not the final remedy for the site and may occur at any time throughout the life cycle of the project.

Investigation, Studies, and Analysis of Alternatives--A Restoration Project life-cycle phase. During this phase, investigation activities are completed to determine the nature and extent of contamination. Additionally, feasibility studies are completed for remedial actions including applicable risk assessments; assessing the treatability of the contamination; and evaluating the performance and cost of potential treatment technologies, e.g., CERCLA Remedial Investigation/Feasibility Study (RI/FS) or RCRA Facility Investigation/Corrective Measures Study

(RFI/CMS), resulting in an analysis of alternatives for remedial actions.

Investment--Resources, usually funding, along with a decision on how to apply those resources that result in a capability, product, or service that helps NASA achieve its mission. Generally, the benefits of an investment exceed the cost.

Lessons Learned--The significant knowledge or understanding gained through past or current programs and projects that is documented and collected to benefit current and future programs and projects.

Life-Cycle Cost--The total of the direct, indirect, recurring, nonrecurring, and other related expenses incurred, or estimated to be incurred, in the design, development, verification, production, operation, maintenance, support, and decommissioning of a project. Life-cycle cost of a project or system can also be defined as the total cost of ownership over the project's or system's life cycle from formulation through implementation. It includes all design, development, deployment, operation and maintenance, and disposal costs.

Metric--A measurement taken over a period of time that communicates vital information about a process or activity. A metric should drive appropriate action.

NASA Environmental Tracking System (NETS)--An automated system that Centers, Component Facilities, and EMD use to facilitate the planning, budgeting, spending, and approval of ECR projects.

Non-Time-Critical Removal Actions--An interim action under CERCLA that has a planning period of at least six months before on-site activities must be initiated.

NRC Decommissioning--An ECR Restoration Project related to the decontamination and decommissioning of nuclear facilities, with the ultimate goal of license termination.

Operations, Maintenance, and Monitoring--A Restoration Project life-cycle phase. During this phase, operations, maintenance, and monitoring activities for the selected remedial action are completed. This phase ends when clean-up goals are met.

Planning, Programming, Budgeting and Execution--An Agency-wide methodology for aligning resources in a comprehensive, disciplined, top-down approach that supports the Agency's vision and mission. It is designed to take an analytical approach to decision making and focuses on translating strategy into actionable programs and bringing together Agency priorities and strategic outcomes within the Agency's resource constraints. There are four phases in PPBE. The planning phase includes analyzing internal and external conditions, trends, threats, and technologies; examining alternative strategies; and defining long-term strategic goals, multiyear outcomes, and short-term performance goals. The programming phase encompasses definition and analysis of programs and projects, together with their multiyear resource implications and the evaluation of possible alternatives. The budgeting phase includes formulation and justification of the budget to OMB and Congress. The execution phase is the process by which financial resources are made available to Agency components and managed to achieve the purposes and objectives for which the budget was approved.

Potentially Responsible Party--A private organization, individual, public agency, or other legal entity that may be liable for the costs of investigating and cleaning up contamination under the jurisdiction of CERCLA.

PRP Agreement--An agreement pursuant to CERCLA, signed by NASA and a PRP, whereby the PRP agrees to perform and/or pay for some or all of the response costs involved in a site cleanup.

Project Identification and Preliminary Assessment--A Restoration Project life-cycle phase. During this phase, restoration projects are identified that may require ECR Program funds. Activities of this phase are focused on developing information about the need for remediation, responsible parties, and priority of projects.

Principal Center--Center designated by an MOA to provide support to Headquarters in performing Agency-wide tasks.

Principal Center Initiatives--Ongoing Agency-wide activities and projects that are initiated by EMD and implemented by Centers. Principal Center Initiatives require a formal MOA between the implementing Center and OSI and development of annual task plans.

Project Plan--The document that establishes the baseline for project implementation, signed by the ECR Program Manager, Center Director (if appropriate), and Project Manager.

RCRA Cleanup--An ECR Restoration Project related to investigating and, as necessary, remediating hazardous waste releases at or from facilities in accordance with RCRA, regardless of when the releases occurred.

Remedial Action--A Restoration Project life-cycle phase. During this phase, the designed remedy is implemented.

Resource Conservation and Recovery Act--A commonly used designation for the Solid Waste Disposal provisions found at Title 42 U.S.C. §§ 6901 - 6992k.

Restoration--Measures taken to return a site to pre-existing conditions or to otherwise appropriately address or

respond to environmental contamination, in accordance with applicable legal and other requirements.

Risk--The combination of the likelihood that a program or project will experience an undesired event (some examples include a human health or environmental impact, cost overrun, schedule slippage, malicious activities, or failure to achieve project success criteria) and the consequences, impact, or severity of the undesired event, were it to occur. Both the likelihood and consequences may have associated uncertainties.

Risk Assessment--An evaluation of an event that determines: (1) What can go wrong; (2) The likelihood of occurrence; and (3) The potential consequences. A risk assessment may also evaluate the potential human health and ecological impacts associated with a restoration project.

Risk Management--An organized, systematic decision-making process that identifies, analyzes, plans, tracks, and controls, communicates, and documents risk to increase the likelihood of achieving program/project goals.

Safety--Freedom from those conditions that can cause death, injury, occupational illness, damage to or loss of equipment or property, or damage to the environment.

Stakeholder--An individual or organization having an interest in the conduct, outcome, or deliverable of a program or project.

State-Regulated Cleanups--An ECR Restoration Project related to corrective actions in response to releases or threatened releases of hazardous wastes, hazardous substances, pollutants, or contaminants regulated under state laws.

Third-Party Damages--Monetary compensation that is awarded by a court in a civil action to an individual who has been injured through the conduct of another party. Damages attempt to measure in financial terms the extent of harm a plaintiff has suffered because of a defendant's actions.

Time-Critical Emergency Interim Actions--An interim clean-up action that must be conducted immediately to address an imminent threat.

TSCA Cleanup--An ECR Restoration Project related to corrective actions in response to releases to the environment of polychlorinated biphenyls, asbestos, or lead-based paint not resulting from an ongoing NASA construction project.

Underground Storage Tank (UST) investigation and removal--An ECR Restoration Project related to investigations and corrective actions in response to the release of petroleum substances from a UST system.

Verification--Proof of compliance with specifications-- may be determined by a combination of test, analysis, demonstration, and inspection.

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