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Space Administration

John C. Stennis Space Center
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SPR 8500.1 Rev. E
September 2018

COMPLIANCE IS MANDATORY

John C. Stennis Space Center Environmental Management System Procedural Requirements

Stennis Procedural Requirements	SPR 8500.1	E
	<i>Number</i>	<i>Rev.</i>
	Effective Date: September 4, 2018	
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Responsible Office: Center Ops Directorate		
SUBJECT: Environmental Management System Procedural Requirements		

Document History Log

Revision	Change Date	Originator/ Phone	Description
Note: The original history of the prior Directive has been retained here to provide clarity and for tracking and reference purposes.			
Basic SPG 8500.1	03/22/01	RA02/R. Magee Ext.7384	Initial Release.
SPG 8500.1 A	07/19/02	RA02/ J.Gordon Ext. 8-1416	<p>General writing, grammatical and format corrections throughout. Added SSC/NASA organizations and offices, ODIN and SS contracts to applicable support contractors participating in the EMS. Removed from references: SSLP-1440-0001, SSLP 8730-0004, SSLP-1280-0004, modified SSLP document numbers to remove the SLP number. Added to references: SPLN-8500-0001, SSC Environmental Functional Review Checklist.</p> <p>Updated doc number for the Integrated Contingency Plan. In section 1.2 added responsibilities to the SSC Environmental Officer (added c, d, e, f). In section 1.3 removed responsibilities from SSC EMS core team (e and f). In section 2.2, (i) was rewritten, and (j) was added. In section 2.3 responsibility for documenting EMPP objectives and targets was changed from the core team to the EO. Paragraph was removed which had said that objectives and targets could be established only to maintain compliance and record rationale for objectives and targets. In section 2.6, responsibility was changed for updating and reviewing operational controls to the Environmental Officer. Also corrected documentation reference. Section 2.10, Corrective/ Preventive Action and Improvement completely rewritten. Sections 2.13, 2.14, 2.15 and 2.16 were extensively revised. Sections 2.15.1, 2.15.2, 2.15.3 and 3.0 were deleted. Sections 4.0 and 5.0 were changed to Appendices H and I respectively. In Appendix</p>

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			B, the column containing the identification number was removed. In Appendix G, divided general Lead Auditor term into Team Lead Auditor and EMS Lead Auditor, and requirements and responsibilities were added and revised. Info. falling under Other Criteria was also heavily revised.
SPR 8500.1 Basic	10/22/04	Renay Nelson X8-1585	Revalidated and correct per NASA Rules Review
A	12/30/2004	C. Kennedy x8-1445	Formatting and grammatical changes made throughout the document. Sections 1.2, 2.6, 2.7, 2.14 and 2.15 have been modified. These modifications reflect changes in audit and senior management review schedules. TTSC was changed to ITS and TOC. Changes were made to sections 2.10 and 2.14 to clearly describe CAR, PCAR and compliance assessments.
B	01/31/2006	C. Kennedy X8-1445	This document has been modified to align with the newly released headquarters' document NPR 8553.1 and the new ISO standard 14001-2004. The environmental policy has been modified to include statements on sustainability. Analytical Measurement and Test Equipment for calibration was reinserted into Section 2.7. Reworded and added the electronic record for external communications with regulators and other interested parties. Added information on the new Training and Legal section of the Risk Matrix database. Updated references for Internal Audits from SCWI-8500-0021-ENV to SCWI-1280-0001; and Corrective Action, Preventive Action and Improvement from SCWI-8500-0022-ENV to SCWI-8730-0002.
C	09/10/2007	C. Kennedy X8-1445	Revised Section 2.17 on reporting to senior management. Added responsibilities for NASA employees and NASA contractor employees. Updated

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			references. Changed document for training requirements from EMPP to Risk Matrix and operational desk guides. Removed EMS from many section headings. Changed Section 2.3 from setting O & T for other goals to other aspects deemed to contribute significantly. Moved Policy Statement to Section 1 and moved risk matrix development guidance from Section 2 to Appendix D.
D	12/30/2009	C. Kennedy X8-1445	This revision was undertaken to align with the new NPR 8553.1 with effective date of September 22, 2009 (references to certain sections changed in Chapter 2 of this SPR). Changed Center Director's name. Changed training reference. Changed calibration control reference. Removed reference to National Environmental Performance Track Program. Deleted Appendix B, C, and D.
D-1	07/27/2012	C. Kennedy X8-1445	Revised Section 2.10 Training to satisfy an internal audit preventative corrective action.
D-2	3/26/2015	C. Kennedy	Replaced two cancelled documents with a new document SCWI 8710-0004.
D-3	3/1/2016	C. Kennedy	Administrative. Changed the document name for SCWI-8710-0004 and replaced SCWI- 8730-0002 with SCWI-1280-0002.
E	8/23/2018	B. Moody X8-1426	Revised to remove references to ISO 14001 and to align with the requirements of NPR 8553.1. In addition: Changed Center Director's name. Additional clarification, formatting, and grammatical changes made throughout the document. Changed NASA Environmental Management to NASA Environmental and Health Services Office and included document titles, where appropriate. Section 1.2.3: Included responsibility for designation of EMS Core Team and deleted responsibility for appointing EMS Audit Manager. Corrected

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			reference from SCWI-1280-0004 to SCWI-8710-0004. Section 1.2.4: Changed NASA Engineering and Science Directorate to NASA Engineering and Test Directorate. Deleted statement limiting Core Team membership. Section 2.4: Changed Facility Operations Service contractor to Stennis Operating Contractor. Appendix A: List of acronyms updated as applicable.
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1.0 PREFACE

P.1 PURPOSE

This Stennis Procedural Requirement (SPR) establishes specific requirements for implementing and maintaining the Environmental Management System (EMS) for the National Aeronautics and Space Administration's (NASA) John C. Stennis Space Center (SSC) in accordance with NASA Policy Directive (NPD) 8500.1, *NASA Environmental Management*; and NASA Procedural Requirements (NPR) 8553.1, *NASA Environmental Management System*.

P.2 APPLICABILITY

- a. This SPR is applicable to NASA SSC personnel and activities.
- b. This SPR is applicable to NASA SSC contractors to the extent specified in their respective contractual documents.
- c. The scope of the EMS includes all activities, products and services that fall under the control or influence of NASA/SSC management including, but not limited to, construction of facilities, facility maintenance and operations, procurement, research and development, testing, assembly, equipment maintenance, programs, mission deployment, and waste disposal.
- d. The scope of the EMS does not include programmatic activity by other government agencies and commercial operations that are located at SSC.

P.3 AUTHORITY

NPD 8500.1, *NASA Environmental Management*.

P.4 REFERENCES

Referenced documents are assumed to be the latest revision unless otherwise specified.

NPR 1441.1, *NASA Records Management Program Requirements*
 NPD 8500.1, *NASA Environmental Management*
 NPR 8553.1, *NASA Environmental Management System*
 SPR 1400.1, *SSC Document Preparation, Numbering, and Management*
 SPR 1440.1, *SSC Records Management Program Requirements*
 SPR 8730.4, *SSC Metrology and Calibration Control Program*
 SPLN-1040-0006, *SSC Emergency Management Plan*

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SCWI-8710-0004, *SSC Internal and External Audit Process*
 SCWI-8500-0020-ENV, *SSC Environmental Integrated Contingency Plan with Spill Prevention Control and Countermeasure (SPCC) Plan*
 SCWI-1280-0002, *SSC Corrective Action Request Process*

P.5 MEASUREMENT/VERIFICATION

Compliance with the requirements contained in this document will be verified through audits, observations, and self-assessments.

P.6 CANCELLATION

SPR 8500.1, Rev D-3.

Signature on file

Richard J. Gilbrech, Ph.D.
 Director

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CHAPTER 1. ENVIRONMENTAL POLICY AND EMS RESPONSIBILITIES

1.1 Environmental Policy

- a. It is the policy of SSC to conduct its mission, services, and activities in a manner that maintains environmental stewardship of assets and fully discharges its environmental responsibilities. Consistent with NPD 8500.1, *NASA Environmental Management*, SSC has implemented this policy through an EMS based on four foundational principles:
1. ***Regulatory Compliance*** with all applicable federal, state, and local environmental laws and regulations and other requirements;
 2. ***Conservation*** of our resources so that we meet our current and future mission in a sustainable manner;
 3. ***Pollution Prevention*** to cost-effectively avoid the creation of pollution; and
 4. ***Continual Improvement*** of processes to enhance environmental protection.
- b. This policy serves as the framework for setting and reviewing environmental objectives and targets.
- c. The SSC EMS is focused on significant environmental parameters including but not limited to:
1. ***Conservation and Sustainability:*** We will diminish our consumption of natural resources through cost-effective use of recycled and reused materials, affirmative procurement, and conservation of energy and water. We manage our natural resources in a sustainable manner for current and future generations.
 2. ***Restoration:*** We will strive to protect and restore the natural and cultural resources located on SSC property including habitats, wetlands, and other sensitive ecological resources in accordance with applicable regulations and local ordinances.
 3. ***Emissions, Effluents, and Waste:*** We will work to diminish our emissions, effluents, and waste throughout the lifecycle of our projects and operations by employing cost-effective operational controls, by selecting appropriate materials and by implementing corrective and preventative actions for legal issues whenever necessary.
 4. ***Technology Transfer:*** We will promote the development and transfer of environmentally related technology that may have broad applicability for environmental protection and restoration throughout society.
- d. We will communicate this policy to all employees, make it available to the public upon request, and maintain procedures to receive and respond to inquiries from interested parties. We will also alert potentially affected individuals and authorities of any environmental incidents in a timely and effective manner.

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- e. Senior Management at SSC believes that how we care for the environment today affects both current and future generations. We accept responsibility for doing our best to maintain awareness and to minimize adverse environmental impacts from our operations.

1.2 Responsibilities

The responsibilities for the implementation and maintenance of the EMS are addressed below.

1.2.1 Center Director

The Center Director is responsible for:

- a. Directing and supporting persons to contribute to the effectiveness of the EMS;
- b. Supporting other relevant management roles to demonstrate their leadership as it applies to EMS within their areas of responsibility;
- c. Appointing an EMS Representative with appropriate authority, background, and training; and
- d. Assessing the Center's conformance to the applicable requirements of NPR 8553.1, *NASA Environmental Management System*, and issuing a document declaring conformance. The Declaration of Conformance shall be renewed every three years following NASA Headquarters' Environmental and Energy Functional Review.

1.2.2 Senior Management

Senior Management shall provide evidence of their commitment to the development, implementation, and improvement of the EMS by:

- a. Allocating resources for the effective operation and maintenance of the EMS;
- b. Reviewing the EMS to ensure its continuing suitability, adequacy and effectiveness; and
- c. Assessing opportunities for improvement and the need for changes to the EMS, including the environmental policy and environmental objectives and targets.

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1.2.3 Environmental Officer

The Environmental Officer (EO) is responsible for:

- a. Serving as the Management Representative responsible for overseeing the continual operation of the EMS;
- b. Establishing an EMS Core Team, comprised of personnel representing a cross section of the organizations that affect environmental aspects. The team may consist of procurement, legal, budget, facility, energy management, vehicle fleet management, environmental management, technical support, and other personnel, as appropriate;
- c. Identifying the need for and documenting procedures for operational controls that limit adverse impacts associated with environmental aspects and which are needed to manage NASA's environmental policy or compliance activities;
- d. Reporting to Senior Management on the performance of the EMS, at least once each calendar year;
- e. Overseeing communications with interested parties;
- f. Providing support to NASA Headquarters Environmental Management Division during Environmental and Energy Functional Reviews;
- g. Identifying requirements for, and participating in the SSC Corrective Action, Preventive Action and Improvement process, in accordance with SCWI-1280-0002, *SSC Corrective Action Request Process*;
- h. Identifying EMS internal audit requirements to the SSC Audit Manager in accordance with SCWI-8710-0004, *SSC Internal and External Audit Process*; and
- i. Tracking to closure the investigation and correction (as needed) for all reported hazards/emergencies and nonconformances.

1.2.4 EMS Core Team

The EMS Core Team assists in managing the EMS. The Core Team membership includes representatives from NASA Environmental and Health Services Office, NASA Engineering and Test Directorate, and the NASA contractors responsible for operational activities. Other NASA Directorates or NASA contractors may be consulted on an as-needed basis.

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The EMS Core Team is responsible for:

- a. Identifying high-priority environmental impacts;
- b. Establishing environmental objectives and targets for SSC high-priority impacts that are consistent with the NASA environmental policy;
- c. Assisting the Environmental Management Program Plan (EMPP) Managers to develop performance indicators for environmental objectives and targets; and
- d. Reviewing and updating operational controls associated with high-priority environmental impacts on an as-needed basis.

1.2.5 Environmental Management Program Plan Manager(s)

The EMPP Manager(s) is responsible for:

- a. Establishing performance baselines for environmental objectives and targets with the assistance of appropriate SSC environmental program personnel;
- b. Tracking, monitoring, and measuring the key characteristics of operations associated with the environmental objectives and targets and reporting this information to the EO as requested; and
- c. Reviewing and maintaining the EMPP document to ensure it remains current and in conformance with the requirements of SPR 1400.1, *SSC Document Preparation, Numbering, and Management*.

1.2.6 Audit Manager

The Audit Manager is responsible for organizing EMS audits according to SCWI-8710-0004, *SSC Internal and External Audit Process*.

1.2.7 NASA and NASA Contractor Supervisors

NASA and NASA contractor supervisors are responsible for determining employee training and competency requirements necessary for the execution of the EMS. Supervisors shall ensure that employees engaged in activities associated with EMS environmental aspects or compliance activities receive appropriate training and are competent to perform their tasks.

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1.2.8 NASA Employees and NASA Contractor Employees

NASA employees and NASA contractor employees are responsible for being knowledgeable of the NASA environmental policy, the environmental aspects related to their jobs, and how their work can impact the effectiveness of the EMS and the ability to meet compliance obligations.

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CHAPTER 2. PROCEDURES

2.1 High-Priority Environmental Aspect Identification

- a. The EMS Core Team shall document information to verify and validate the assignment of high-priority environmental aspects in accordance with Section 3.1 of NPR 8553.1, *NASA Environmental Management System*. The environmental aspects shall be managed using a risk matrix formatted in a manner similar to that provided in Table D-1 of NPR 8553.1, *NASA Environmental Management System*.
- b. The EO and the EMS Core Team shall meet on an annual basis to review the risk matrix and recommend additions or alterations based on changes in mission, activities, products, processes, or services.

2.2 Environmental Objectives and Targets

- a. The EMS Core Team, with the guidance of the EO, shall establish environmental objectives and targets that are technically feasible and economically reasonable for each high-priority environmental aspect and for any other aspect deemed to contribute significantly to environmental performance. The requirements for establishing objectives and targets are provided in Section 3.3 of NPR 8553.1, *NASA Environmental Management System*.
- b. The EO shall document in an EMPP the objectives and targets for the high-priority aspects and communicate the information to all affected parties.
- c. Any updates or changes to the objectives and targets resulting from the annual management review and internal EMS audits shall be incorporated into the EMPP and communicated by the EO to all affected parties.

2.3 Environmental Management Program Plan

An EMPP shall be prepared that specifies the basic requirements for designating responsibilities and establishing means and timeframes for achieving objectives and targets. Requirements for environmental management programs are provided in Section 3.3 of NPR 8553.1, *NASA Environmental Management System*.

2.4 Legal and Other Requirements

- a. The Stennis Operating Contractor shall be contractually tasked to review federal and state regulations through appropriate web sites and subscription e-mail services to ensure that representatives of NASA Environmental Management are aware of new or modified requirements.

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- b. Any rules or regulations that are identified as potentially relevant to SSC operations shall be brought to the attention of the EO and communicated to those individuals who are primarily responsible for meeting the requirements in the affected area.
- c. Legal and other requirements shall be documented for all aspects in the Risk Matrix, as applicable.

2.5 Operational Controls

- a. The EO shall ensure that operational controls are available for each high-priority environmental aspect and for aspects that need controls to prevent them from becoming high priority.
- b. Operational controls may be technological, operational or procedural and shall be documented and made available to employees via the SSC Technical Documentation System.
- c. The procedures shall be reviewed and updated as necessary by NASA Environmental Management.
- d. Procedures shall be prepared and kept current per SPR 1400.1, *SSC Document Preparation, Numbering, and Management*.

2.6 Calibration, Monitoring and Measuring Equipment

Equipment used for sample analysis or performance monitoring shall be calibrated in accordance with one of the following:

- a. Inspection, measurement and test equipment is calibrated in accordance with SPR 8730.4, *SSC Metrology and Calibration Control Program*.
- b. Analytical measurement and test equipment (AM&TE) is calibrated using certified reference materials or consensus standards supported by a test procedure. Traceability to the certified reference material or consensus standard shall be documented by the analytical laboratory for each analysis or performance monitoring process. AM&TE is not included in the Stennis metrology management system.

2.7 Document Control

All EMS documents shall be created, revised, and cancelled according to SPR 1400.1, *SSC Document Preparation, Numbering, and Management*.

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2.8 Records

- a. EMS records shall be managed in accordance with relevant federal and state regulations; NPR 1441.1, *NASA Records Management Program Requirements*; and SPR 1440.1, *SSC Records Management Program Requirements*.
- b. Logs shall be controlled in accordance with specific work instructions or the appropriate regulatory requirement.

2.9 Corrective/Preventative Action and Improvement

- a. Corrective action is used to effectively resolve non-compliance and non-conformance issues by addressing and identifying the root cause of the discrepancy. The primary objective of preventive action is to minimize impending, emerging, or potential problems or issues that may increase program or management risk. While corrective action starts with a known fault that must be fixed, preventive action resolves a potential problem or concern that must be eliminated to avoid or prevent a fault.
- b. Corrective/preventative actions and improvements that are identified during internal or external audits shall be managed according to SCWI-1280-0002, *SSC Corrective Action Request Process*.
- c. Some corrective/preventative actions and improvements are also identified by regular SSC communication processes, NASA Headquarters' Environmental and Energy Functional Reviews, state and federal environmental inspections and other similar means. In these situations, the need for formal corrective or preventative action shall be based on the magnitude of the issue as determined by NASA Environmental Management, in accordance with SCWI-1280-0002, *SSC Corrective Action Request Process*.

2.10 Training

- a. Training requirements to provide the needed competencies to execute the requirements of the EMS shall be determined by NASA and NASA contractor employee supervisors. Supervisors shall ensure that employees engaged in activities associated with EMS environmental aspects or compliance activities receive appropriate training and are competent to perform their tasks.
- b. Employee awareness of EMS requirements shall be ensured by new employee EMS awareness training and EMS refresher training. NASA EMS refresher training is required for NASA civil servants every three years and is available through SATERN.

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- c. Competency training requirements shall include professional certification necessary to be in compliance with the law.

2.11 Emergency Preparedness

Emergency procedures at SSC shall be governed by SPLN-1040-0006, *SSC Emergency Management Plan*; and SCWI-8500-0020-ENV, *SSC Environmental Integrated Contingency Plan with SPCC Plan*.

2.12 Tracking Environmental Performance

- a. As part of establishing EMPP documents for environmental impacts, the EMS Core Team shall assist the EMPP Manager in determining performance indicators to show progress toward meeting EMPP objectives and targets.
- b. Units of measure and types of measurement found in environmental regulations for a particular high-priority environmental aspect shall be used in establishing these indicators and in determining their baselines.
- c. The EMPP Manager shall record progress toward meeting objectives and targets using graphs, charts, or reports.
- d. The EO shall establish data requirements for submittal of records that track, monitor and measure key environmental parameters associated with SSC operations.

2.13 Compliance Assessments

- a. NASA SSC Environmental Management and NASA Headquarters Environmental Management Division shall conduct assessments on all NASA and NASA contractor operations to assure that SSC activities comply with federal and state regulations.
- b. The EO has the authority to initiate corrective action and issue a cease and desist order on any non-compliant activities, as deemed necessary.

2.14 Internal EMS Audits

Internal EMS audits of NASA and NASA contractors shall be conducted in accordance with SCWI-8710-0004, *SSC Internal and External Audit Process*.

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2.15 Internal Communications

- a. Internal communications to NASA and NASA contractors with respect to the EMS include the environmental policy, objectives and targets, roles and responsibilities, performance tracking, emergency response, and changes to the EMS, as appropriate.
- b. Mechanisms for internal communication include the Environmental Program website, newsletters and emails, staff meetings, bulletin boards, posters and flyers.
- c. All SSC personnel shall communicate any environmental concerns directly to their manager or their organization's environmental lead; directly to the EO; via a corrective action form; or through the SSC "Close Call" System.
- d. Appropriate responses shall be provided to all environmental concerns expressed by personnel.
- e. All SSC personnel shall report environmental hazards or emergencies, including spills and fires, immediately upon discovery by dialing 911 from a NASA landline or (228) 688-3636 from a cell phone or other landline phone, in accordance with SCWI-8500-0020-ENV, *SSC Environmental Integrated Contingency Plan with SPCC Plan*.

2.16 External Communications

- a. The NASA Senior Management Council has directed the NASA Environmental and Health Services Office to provide the public with information on the EMS significant aspects. These aspects, the EMS objectives and targets, and environmental performance indicators shall be made available to the public, upon request.
- b. NASA and NASA contractor procurement personnel shall ensure that SSC suppliers or other contractors are informed of the EMS and are aware of NASA's desire that they conduct their business in an environmentally sound manner applying applicable procedures and requirements to mitigate, minimize, or otherwise control environmental impacts.
- c. Outreach is also accomplished for National Environmental Policy Act requirements such as environmental assessments and environmental impact statements by posting documents on the Environmental Program website and providing them to local libraries for public review. If necessary, public scoping or comment sessions shall be conducted locally.
- d. The requirements of the Comprehensive Environmental Response, Compensation, and Liability Act shall be fulfilled by providing information to local libraries for public review.

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- e. The NASA Environmental and Health Services Office shall keep records of incoming and outgoing phone communications and emails, regarding environmental compliance issues, with the U.S. Environmental Protection Agency, the U.S. Army Corps of Engineers, the Mississippi Department of Environmental Quality, the Mississippi Department of Health, and other federal and state agencies.
- f. Electronic records of communications shall be maintained on the NASA Center Operations Directorate network drive (\\sscsdc\Center Operations\RAXX) and managed in accordance with NPR 1441.1, *NASA Records Management Program Requirements*.
- g. Public inquiries regarding environmental issues shall be directed to the SSC Public Affairs Officer. This includes emails, faxes and telephone calls.

2.17 Management Review

- a. Senior management shall review the EMS at least once each calendar year to ensure its continuing suitability, adequacy, and effectiveness.
- b. The EMS management review shall include consideration of the following:
 1. Results of internal audits and evaluation of compliance with legal and other requirements;
 2. Communication from external interested parties;
 3. Environmental performance and the extent to which objectives and targets have been met;
 4. Status of corrective and preventative actions;
 5. Follow-up actions from previous management reviews;
 6. Changing circumstances, including developments in legal and other requirements; and
 7. Recommendations for improvement.
- c. Upon review of the information provided by the EO, senior management shall assess opportunities for improvement and provide guidance and direction to the EO on possible changes to the EMS, including the environmental policy and environmental objectives and targets.

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Appendix A – Acronyms

AM&TE	Analytical Measurement and Test Equipment
EMPP	Environmental Management Program Plan
EMS	Environmental Management System
EO	Environmental Officer
NASA	National Aeronautics and Space Administration
NPD	NASA Policy Directive
NPR	NASA Procedural Requirements
SCWI	Stennis Common Work Instruction
SPLN	Stennis Plan
SPR	Stennis Procedural Requirements
SWI	Stennis Work Instruction
SSC	Stennis Space Center

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