



Green Cleaning Plan

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Revision 1

PLN-002



Approval recommended:

Lavone L. Jones
Manager, Custodial Services

Date

Approved:

L. Lynnwood Dukes
Senior Manager, Centralized Team

Date

Chris J. Romero
Operations Team Supervisor
Custodial Services

Date

Charlene B. Argo
Administrative Support, Centralized Team

Date

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Change Log

Rev. No.	Approved	Date	Change Description	Pages Changed
1	CBA/SC	3/8/12	Change signatories and update content.	ii, 2, 3, 4, 8, 11

1.0 Scope

This Green Cleaning Plan addresses specific environmental best practices for cleaning the interior of Sandia National Laboratories (SNL/NM) buildings, as follows:

- Purchasing sustainable cleaning products, including products for hard floors and carpets
- Entryway systems
- Procuring sustainable cleaning equipment
- Standard operating procedures for effective cleaning
- Promoting and improving hand hygiene
- Handling of cleaning chemicals
- Use of chemical concentrates and dilution systems
- Staffing and employee-training requirements
- Collecting and addressing occupant feedback

SNL/NM uses ManageMen's Operational System 1 (OS1)[®] green cleaning system to clean and maintain all SNL/NM buildings, procure products and equipment, train and schedule staff, and evaluate performance. (OS1) is a standardized system that focuses on cleaning for health, protecting the built environment, safe cleaning practices, environmentally responsible chemicals, indoor air-quality improvement, and recycling while improving worker safety and reducing waste.

2.0 Goals

The goal of the plan is to reduce the exposure of building occupants and maintenance personnel to potentially hazardous chemical, biological, and particle contaminants, which adversely impact air quality, health, building finishes, building systems, and the environment.

SNL/NM's goals are as follows:

- Maintain 100 percent implementation of the (OS1) green cleaning system
- Achieve a score of 90 percent or above to achieve the *(OS1) Green Certification Program of Excellence* designation through the application of the (OS1) system to all applicable buildings onsite
- Train 100 percent of custodial staff through the *(OS1) Learn & Earn* program, so each individual achieves certification in each job specialization (Light Duty, Vacuum, Restroom and Utility)

3.0 Responsible Parties

The Custodial Services Department, within the Facilities Management and Operations Center (FMOC), is responsible for implementing the (OS1) system and the referenced procedures. The Custodial Services Department performs cleaning and maintenance for more than 350 buildings, accounting for approximately 3.4 million cleanable square feet, and has a staff of more than 80 people that work in eleven teams across the SNL/NM site in all five Technical Areas.

The Custodial Services Department manager, with support from team leaders, lead custodians, the technical assistant, and other department staff, is responsible for developing and managing the implementation of the plan.

The department manager and staff perform the following major tasks:

- Management and implementation of the (OS1) program
- Hiring, training, and scheduling of staff members
- Procurement of supplies and equipment
- Evaluation of program effectiveness and making changes as necessary
- Management of the annual budget

Personnel involved with various elements of the green cleaning program carry out their tasks according to this plan and report all relevant activities to the aforementioned parties. To ensure an effective and coordinated effort, the building staff responsible for overseeing the plan review all proposed cleaning activities before implementation.

4.0 Quality Assurance Control Process

The responsible parties annually evaluate the success of the implementation of the (OS1) green cleaning system and the plan. The annual review includes the Manager and Team Checklists for all SNL/NM buildings and the results of the third-party *(OS1) Progress Audit*. Whenever possible, the annual review includes an evaluation of the performance, safety, and environmental/public health benefits achieved as a result of the implementation of the green cleaning system and plan.

Other tracking mechanisms used and maintained by the Custodial Services Department to ensure document conformity with the (OS1) system include the Solution Logs, *Material Safety Data Sheets (MSDS) Beyond Compliance Binder*, and the Equipment Checklist.

Prior to implementation, the responsible parties review all proposed cleaning activities, products, or equipment. Upon reviewing proposed activities, products, or equipment, the responsible parties determine whether they meet plan criteria and then approve or deny action.

The responsible parties regularly communicate with all cleaning staff and conduct regular site inspections and evaluations to ensure that the green cleaning system and plan are in place and functioning as intended.

In addition to ongoing quality-control measures, all practices and products in the project building are included in the annual review to identify opportunities for improvement and expansion of environmentally friendly practices.

The Custodial Services Department earned environmental distinction on state and national levels for its systematic model of providing green cleaning. In 2002, the State of New Mexico's Green Zia Environmental Recognition Program recognized the SNL/NM Custodial Services Department. Since 2003, the Custodial Services Department has received national recognition by earning (OS1) Green Certified Program status every year and has consistently earned Progress Audit scores between 85 percent and 97 percent. SNL/NM was the highest-scoring organization within the entire national (OS1) program for four continuous years of audit cycles: 2008, 2009, 2010, and 2011.

Earning scores of 80 percent or above shows that SNL/NM is reducing environmental risks and the probability of unwanted effects. Specifically, SNL/NM, through the *(OS1) Green Certified Program*, demonstrates excellence in the following areas:

- Cleaning for health first and then for appearance
- Disposing of cleaning wastes in an environmentally responsible manner
- Achieving increased worker safety and awareness
- Achieving an increased level of sanitation of building surfaces
- Removing pollutants from the facility, responsibly and properly
- Reducing chemical, particle, and moisture residue
- Minimizing human exposure to pollutants

(OSI) Progress Audit

Annually, ManageMen performs an on-site, third-party evaluation called a Progress Audit. SNL/NM's progress is measured against a Baseline Audit that was performed at the time SNL/NM adopted the (OS1) system, as well as the (OS1) benchmarking standard of 80 percent. ManageMen generates an audit report, and SNL/NM's Custodial Services Department receives a score that is measured against previous scores, as well as the scores of other national organizations.

The content of the Progress Audit and the Baseline Audit is the same. It covers factors that contribute to the effectiveness and productivity of the organization, as well as organizational responsibilities: training, purchasing, workers, supervision, management, and senior management or administration. The Progress Audit uses a "yes" or "no" checklist format that doubles as a "to do" list for the various levels of organizational responsibility, and several job functions are evaluated against the above elements.

The audit is a measurement of the performance and implementation of the green cleaning system at SNL/NM. Sections 1 through 15 of the audit cover different components of the (OS1) program, stating the (OS1) standard criteria and the auditor's numerical assessment of all checklist items relating to that component. Comparing the score of the Baseline Audit to the most recent audit provides SNL/NM's management a numerical measure of improvement and implementation of the green cleaning program.

Manager and Team Checklists

The Manager and Team Checklists are used as part of an internal mini-audit that is performed by Custodial Services Department supervisors and management as a quality-control check to ensure that the (OS1) system and relevant procedures are fully implemented. The Manager and Team Checklists include more than 50 items covering cleaning equipment, the *MSDS Beyond Compliance Binder* materials, and the organizational system.

5.0 High-Performance Cleaning System Procedures

The SNL/NM Custodial Services Department has fully adopted and implemented the (OS1) system. Based on the (OS1) manuals, and in accordance with the SNL/NM's International Standards Organization 14001 Certified Environmental Management System (EMS), the Custodial Services Department has developed the following procedures:

Procedure No. (Old Op No.)	Procedure Name	Review Date
PCD-054 (Op-106)	Heavy Floor Care Maintenance	May 2010
PCD-008 (Op-108)	Custodial Housekeeping	May 2010
PCD-056 (Op-109)	Carpet Care Maintenance	August 2010
PCD-026 (Ap-200)	Review of New Chemical Products	November 2010
PCD-052 (Ap-201)	Custodial New Employee Orientation & Training Plan	September 2009
PCD-051 (Ap-207)	Ordering and Receiving Custodial Supplies	September 2009
PCD-016 (Ap-211)	Lead Custodian	August 2010

The Facilities Custodial *Primary Hazard Screening (PHS) and Hazard Analyses* document, PHS# SNL7A00188-017, covers all of the Custodial Service Department's activities and identifies and manages potential hazards associated with its work.

Notes:

1. Procedure PCD-010, *Bloodborne Pathogens*, has been replaced with PCD-012, *Mitigating Human Waste Hazards*, Revision September 2010.
2. Procedures PCD-017, -018, -019, and -020 have been replaced with one procedure, PCD-101, *Custodial Specialist*, Revision November 2010.

6.0 Cleaning Products, Materials, Janitorial Paper Products, and Equipment

6.1 Cleaning Products and Materials

6.1.1 Performance Metrics and Measurement

The practices documented in the procedure manuals are implemented, to the extent practicable, with a target goal of 50 percent of products complying with the requirements below, based on cost. The responsible parties assign staff to work with the vendor to track purchase rates of both compliant and noncompliant products.

Green cleaning, purchase of sustainable cleaning products, and materials criteria:

- Cleaning products meet one or more of the following standards for the appropriate category:
 - Green Seal GS-37, for general-purpose, bathroom, glass, and carpet cleaner use for industrial and institutional purposes
 - Environmental Choice CCD-110, for cleaning and degreasing compounds
 - Environmental Choice CCD-146, for hard-surface cleaners
 - Environmental Choice CCD-148, for carpet and upholstery care
- Disinfectants, metal polish, floor finishes, strippers, or other products not addressed by GS-37 or Environmental Choice CCD-110, 146, or 148 meet at least one of the following standards for the appropriate category:
 - Green Seal GS-40, for industrial and institutional floor-care products
 - Environmental Choice CCD-112, for digestion additives for cleaning and odor control
 - Environmental Choice CCD-113, for drain or grease-trap additives
 - Environmental Choice CCD-115, for odor-control additives
 - Environmental Choice CCD-147, for hard-floor care
 - California Code of Regulations maximum allowable volatile organic compound (VOC) levels for the specific product category
- Disposable janitorial paper products and trash bags meet the minimum requirements of one or more of the following programs for the applicable product category:
 - U.S. EPA Comprehensive Procurement Guidelines for Janitorial Paper and Plastic Trash Can Liners
 - Green Seal GS-09, for paper towels and napkins
 - Green Seal GS-01, for tissue paper
 - Environmental Choice CCD-082, for toilet tissue
 - Environmental Choice CCD-086, for hand towels
 - Janitorial paper products derived from rapidly renewable resources or made from tree-free fibers
- Hand soaps meet one or more of the following standards:
 - No antimicrobial agents (other than as a preservative), except where required by health codes and other regulations such as food service and healthcare requirements
 - Green Seal GS-41, for industrial and institutional hand cleaners
 - Environmental Choice CCD-104, for hand cleaners and hand soaps

The use of materials, products, and chemicals in each building are tracked in the *(OS1) Solution and Filter Use Log*.

The Custodial Services "Standard Order Form" shows all products approved for use (see PCD-051). Products beyond those listed in the form must be submitted for approval prior to use (see PCD-026). The *(OS1) Products for Cleaning Organizations – Simplified* identifies the criteria for all products, materials, and equipment to be used with the (OS1) system.

Quality-control checks, including annual *(OS1) Progress Audit and Manager and Team Checklists*, are used to ensure 100 percent adoption.

6.1.2 Practices to Optimize Use of Sustainable Cleaning Products

Purchasing of cleaning products, materials, and equipment is covered by PCD-052, *Ordering and Receiving Custodial Supplies*; PCD-026, *Review of New Chemical Products*; Administrative Procedures; and the *(OS1) Products for Cleaning Organizations – Simplified*.

6.2 Cleaning Equipment

6.2.1 Performance Metrics and Measurement

All newly acquired cleaning equipment complies with the criteria listed below, whenever possible. The responsible party assigns staff to work with the vendor to track the percentage of all equipment that meets the criteria, based on cost or number of pieces of equipment, with a site-wide target of 20 percent.

Green cleaning, sustainable cleaning equipment criteria:

- Vacuum cleaners meet the requirements of the Carpet and Rug Institute "Green Label" Testing Program—Vacuum Cleaner Criteria and are capable of capturing 96 percent of particulates 0.3 microns in size and operate with a sound level below 70 dBA (decibel measurement for appliances)
- Carpet extraction equipment for restorative, deep cleaning is certified by the Carpet and Rug Institute's "Seal of Approval" Testing Program for deep-cleaning extractors
- Powered floor equipment—such as electric and battery-powered floor buffers and burnishers—is equipped with vacuums, guards and/or other devices for capturing fine particulates and operates with a sound level below 70 dBA
- Automated scrubbing machines are equipped with variable-speed feed pumps (PortionPacs "The Rule of One" system is used for the addition of daily-use chemicals to the water; alternatively, the scrubbing machines use only tap water with no added cleaning products)
- Battery-powered equipment is equipped with environmentally preferable gel batteries
- Powered equipment is ergonomically designed to minimize vibration, noise, and user fatigue
- Equipment is designed with safeguards, such as rollers or rubber bumpers, to reduce potential damage to building surfaces

Quality-control checks, including annual *(OS1) Progress Audit and Manager and Team Checklists*, are used to ensure 100 percent adoption.

The *(OS1) Products for Cleaning Organizations – Simplified* identifies the criteria for all products, materials, and equipment to be used with the (OS1) system.

Equipment usage and maintenance are tracked in the *(OS1) Equipment Check-In Check-Out Log* and the *(OS1) Equipment Inventory Record* (if applicable) in the building.

Acquisition dates and supporting documentation are retained for future purchases to demonstrate that all newly acquired equipment complies with the specifications.

6.2.2 Practices to Optimize Use of Sustainable Cleaning Equipment

Purchasing of cleaning products, materials, and equipment is covered by PCD-051, *Ordering and Receiving Custodial Supplies*; PCD-026, *Review of New Chemical Products*; Administrative Procedures; and the *(OSI) Products for Cleaning Organizations – Simplified*.

7.0 Hard Floor and Carpet Maintenance

7.1 Performance Metrics and Measurement

Floor-care maintenance is performed on an annual schedule (higher frequency for high-use areas) according to written protocols. Quality-control checks, including annual *(OSI) Progress Audit and Manager and Team Checklists*, are used to ensure 100 percent adoption.

7.2 Practices to Optimize Hard Floor and Carpet Maintenance

Cleaning products and methodologies for hard floor and carpet care are covered by PCD-054, *Heavy Floor Care Maintenance*; PCD-056, *Carpet Care Maintenance*; and the *(OSI) Floor Care for Cleaning Organizations – Simplified*.

8.0 Entryway Systems

8.1 Performance Metrics and Measurement

Protocols promoting effective use of entryway systems are wholly adopted. Quality-control checks, including annual *(OSI) Progress Audit and Manager and Team Checklists*, are used to ensure 100 percent adoption.

8.2 Practices to Optimize Use and Maintenance of Entryway Systems

In general, primary points of entry into buildings are equipped with walk-off mats, grates, or grilles that are cleaned with appropriate frequency and products. These systems are a minimum of 10 feet long in the direction of travel wherever possible.

9.0 Hand Hygiene

9.1 Performance Metrics and Measurement

Protocols promoting hand hygiene are wholly adopted. Quality-control checks, including annual *(OSI) Progress Audit and Manager and Team Checklists*, are used to ensure 100 percent adoption.

9.2 Practices to Optimize Hand Hygiene

Hand hygiene is addressed in PCD-012, *Mitigating Human Waste Hazards*, and the *(OSI) Microbiology for Cleaning Workers – Simplified*.

10.0 Safe Handling and Storage of Chemicals and Plans for Spills or Incidents

10.1 Performance Metrics and Measurement

Protocols governing safe handling and storage of cleaning chemicals are wholly adopted. Quality-control checks, including annual *(OS1) Progress Audit and Manager and Team Checklists*, are used to ensure 100 percent adoption.

10.2 Practices to Optimize Handling and Storage of Cleaning Chemicals

Safe handling and storage of chemicals and plans for spills or incidents are addressed in the *MSDS Beyond Compliance Binder*; PCD-008, *Custodial Housekeeping Operating Procedure*; PCD-012, *Mitigating Human Waste Hazards*; the *(OS1) Microbiology for Cleaning Workers – Simplified*; CHM 100, *Training*, and CHM 103, *Training*; and the SNL/NM Facilities Custodial Services document SNL7A00188-017, *Primary Hazard Screening and Hazard Analyses*, which covers all of the Custodial Service Department's activities.

11.0 Use of Chemical Concentrates and Dilution Systems

11.1 Performance Metrics and Measurement

Quality-control checks, including annual *(OS1) Progress Audit and Manager and Team Checklists*, are used to ensure 100 percent adoption.

11.2 Practices to Optimize Use of Chemical Concentrates and Dilution Systems

The (OS1) system requires the use of premeasured and color-coded PortionPacs, which allow custodians to easily follow the "The Rule of One" for measurement, that is, one pack per bottle, per bucket, and per tank. Proper use of PortionPacs is referenced in the *(OS1) MSDS Beyond Compliance Binder*, *(OS1) Boot Camp for Cleaning Workers – Simplified*, *(OS1) Products for Cleaning Organizations – Simplified*, and *(OS1) Functional Operations Simplified Manual*.

12.0 Staffing and Training

12.1 Performance Metrics and Measurement

All cleaning personnel receive regular training, which is tracked by the Custodial Services Department using the SNL Training and Educational Development System (TEDS) Corporate Learning Management System for Corporate training. All cleaning Personnel also receive (OS1) Compliance Training, which is documented in (OS1) training logs.

The *(OS1) Job Cards* show the staffing requirements for each building. Staffing is based on square footage of cleanable space per custodian (cleanable site square footage divided by number of custodians). The Short Staffing Plan is followed in cases of absenteeism. Quality-control checks, including annual *(OS1) Progress Audit and Manager and Team Checklists*, will be used to ensure adequate staffing is provided in SNL/NM buildings.

12.2 Practices to Optimize Staffing and Training

All cleaning staff and managers receive environmental safety and health training, addressing, at a minimum, hazards associated with the use, disposal, and recycling of cleaning chemicals, dispensing equipment, and packaging.

12.3 Training Program and Hours

All new hires in the Custodial Services Department are required to take a standardized, 24-hour *(OSI) Boot Camp* training, using the *(OSI) Boot Camp for Cleaning Workers – Simplified* manual. This training is delivered by an (OSI)-certified trainer, who is required to take two annual training courses to maintain current certification.

Annual training for every employee, including Custodial Services management and staff, is required and is administered through TEDS. The training process and requirements for new employees are detailed in PCD-052, *Custodial New Employee Orientation and Training Plan*. As stated above, a goal of the Custodial Services Department is to train all staff through the Learn & Earn Program, so each individual will achieve certification in each job specialization (Light duty, Vacuum, Restroom and Utility). The Learn & Earn program is documented in the Learn & Earn spreadsheet and binders, which are maintained by the Custodial Services Department.

Job-specific training is described in the comprehensive *(OSI) Boot Camp for Cleaning Workers – Simplified*, *(OSI) Training for Cleaning Workers – Simplified*, *(OSI) Janitor University Binder*, and the *(OSI) Floor Care for Cleaning Organizations – Simplified* literature. Continuing education is provided through the *(OSI) Baker's Dozen* monthly programs.

12.4 Staffing Plan

To meet cleaning objectives at SNL/NM, minimum staffing requirements must be met. Minimum requirements are determined based on cleanable space and number of custodians. Factors such as occupancy rates, seasonal variations, and other considerations should be taken into account when adjusting the staffing plan.

Appropriate staffing is shown in each of the *(OSI) Job Cards* and in the Short Staffing Plan, which is maintained by the Custodial Services Department.

13.0 Occupant Feedback and Evaluation of New Technologies

13.1 Performance Metrics and Measurement

All employees have multiple methods by which to provide feedback on cleaning practices.

13.2 Practices to Optimize Occupant Feedback and Evaluate New Technologies and Procedures

Occupants are encouraged to alert the management to any issues relating to the green cleaning program. In addition, ManageMen and Custodial Services Department management regularly research and integrate new, green cleaning technologies and products into the green cleaning system.

Complaints and compliments are evaluated as a part of the Manager and Team Checklist process. The Request/Complaint tracking form and Management Evaluation Tools may also be used, if available, to measure performance on a building level.

Vulnerable populations are addressed on a situational basis. Complaints from vulnerable individuals are tracked within the Maximo system and on the Job Card for the specific building. Building occupants can call the Request Desk (505-844-4571) or submit an electronic request at any time, to obtain services or provide comments. These requests and comments are logged into the Maximo system and are assigned to the appropriate department, such as Custodial Services.

All new products are approved through the on-site SNL/NM Industrial Hygiene group.

The method of carpet cleaning, called "Progress-a-Clean" carpet care, addresses the needs of vulnerable populations because it encapsulates dust particles using a brittle polymer. This carpet-care service has been and will be provided more frequently for vulnerable occupants upon request.

14.0 Time Period

This plan takes effect on June 1, 2010, and continues indefinitely or until amended and/or replaced by a subsequent green cleaning plan. It will be reviewed and updated, as needed, depending when/if the (OS1) requirements change or within the time period specified in the individual procedures referenced in this plan document.

Acronyms

dBa	Decibel Measurement for Appliances
DOE	Department of Energy
EMS	Environmental Management System
FMOC	Facilities Management and Operations Center
MSDS	Material Safety Data Sheets
(OS1)	ManageMen Operating System 1
PHS	Primary Hazard Screening
SNL/NM	Sandia National Laboratories/New Mexico
TEDS	Training and Educational Development System
VOC	Volatile Organic Compound