

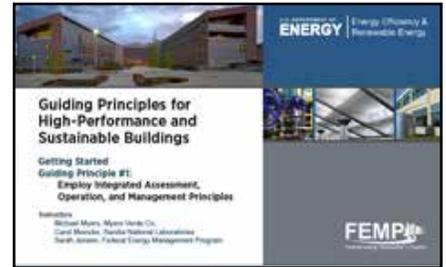
Guiding Principles for High-Performance and Sustainable Buildings eTraining Series

Course: FEMP 30
Duration: 1.0 hours
Learning Units: 1.0 LU
Prerequisites: None
HSW: Yes
IACET CEUs: 0.1



Getting Started, and Guiding Principle I: Employ Integrated Assessment, Operation, and Management Principles

In the course, Guiding Principles for Existing High Performance and Sustainable Buildings: Getting Started and Guiding Principle I, Employ Integrated Assessment, Operation, and Management Principles, you will learn strategies to prepare to meet the Guiding Principles compliance requirements and specifically understand the recommended evidence of compliance for Guiding Principle I.



The Office of Management and Budget (OMB) uses the Guiding Principles to score federal agencies' progress and compliance within the Green Buildings category on annual agency scorecards.

This course is divided into two parts. The first part covers the background, definitions, and preparations needed to document and implement actions to ensure compliance with the Guiding Principles:

- Background,
- Planning, and
- Documentation.

The second part covers Guiding Principle I: Employ Integrated Assessment, Operation, and Management Principles:

- Integrated Team,
- Environmental Management System,
- Assessment,
- Operations,
- Building Management,
- Building Occupant Education,
- Occupancy Surveys, and
- Commissioning.

Instructor

The instructor for this course is **Sarah Jensen**, Technical Lead for Sustainability, Federal Energy Management Program. Sarah also co-chairs the Interagency Sustainability Working Group (ISWG) with GSA. She most recently served as deputy director and environmental counsel for the Green the Capitol Office for the U.S. House of Representatives. She received a bachelor's degree in mass communications from James Madison University and a juris doctor degree in energy, environment, and natural resources law from Northwestern School of Law at Lewis and Clark College.



Learning Objectives

By successfully completing this course, you will be able to:

- Prepare for sustainable operations and maintenance practices in the areas of energy efficiency, water conservation, indoor environmental quality, materials and waste management; and environmentally-preferable building materials.



- Plan to baseline and benchmark facilities, assess existing conditions, identify opportunities for improvement, and establish implementation plans and metrics to comply with the Guiding Principles;
- Recognize ways to document decision points and opportunities to implement sustainable strategies to achieve integrated, holistic and cost effective improvements; and
- Establish solid environmental management systems, measurement and verification systems including Commissioning, integrated team strategies, occupant outreach, education, and satisfaction surveys; and
- Document meeting the Guiding Principle requirements through conformance with the recommended evidence of compliance.

Guiding Principle I

1.1 Getting Started and Guiding Principle I

Welcome to the FEMP e-Training series on Guiding Principles for Federal Leadership for Existing High Performance Sustainable Buildings.

This course covers your planning for “Getting Started with the Guiding Principles” and “Guiding Principle I: Employ Integrated Assessment, Operation, and Management Principles.”

1.2 Navigation Instructions

Each page of this course contains a navigation bar across the bottom.

The course will not move to the next page automatically, so you will need to use these buttons to move within the course.

Click the play button or pause button to play or pause the course.

Click the back button to review the previous page.

Click the forward button to go to the next page.

Click and drag the progress indicator to move the course forward or backward.

Click the audio button to turn the audio on or off.

Click the exit button to close the course window.

Click the arrows in the top left corner of the screen to open or close the table of contents.

Click the “Notes From the Field” icon for more information.

Click the magnifying glass icon for “Recommended Evidence of Compliance” information.

1.3 Guiding Principles for High Performance and Sustainable Buildings - Overview

This slide highlights the five major guiding principles for high performance sustainable buildings.

They are:

1. Employ integrated assessment, operation, and management principles,
2. Optimize energy performance,
3. Protect and conserve water,
4. Enhance indoor environmental quality, and
5. Reduce environmental impact of materials.

1.4 Guiding Principles Elements

This course is divided into two parts. The first part covers the background, definitions, and preparations needed to document and implement actions to ensure compliance with the Guiding Principles. We will cover:

- Background
- Planning
- Documentation

The second part covers Guiding Principle I: Employ Integrated Assessment, Operation, and Management Principles.

We will cover:

- Integrated Team,
- Environmental Management System,
- Assessment,
- Operations,

- Building Management,
- Building Occupant Education,
- Occupancy Surveys, and
- Commissioning.

Welcome to this course. Now let's get started!

1.5 Guiding Principles Background

The Guiding Principles were first introduced in January of 2006. At that time, 16 agencies signed "The Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding," or MOU.

In January 2007, the MOU was incorporated into Executive Order 13423, "Strengthening Federal Environmental, Energy, and Transportation Management."

Click on the dates to learn more about the background.

In December 2008, new procedures were established for the Guiding Principles. At this time, the Guiding Principles were split into two separate documents: one was targeted at new buildings and major renovations, while the other established guidance for existing buildings.

In October 2009, The Guiding Principles were then included as part of Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance."

1.6 Executive Order 13514 Targets

Here are some of the main targets outlined in Executive Order 13514. This target states that 15% of existing buildings must meet the Guiding Principles for Existing High Performance Sustainable Buildings by 2015.

Many of the targets in the Executive Order and the Guiding Principles overlap, and this will be covered later in this course.

The deadline for this requirement is interpreted as December 15, 2015, rather than the end of the fiscal year, September 30, 2015, so this provides some additional time for agencies to achieve compliance. Click on the highlighted target to view more information about it.

Executive Order 13514, Section G

Federal agencies must prepare to meet Executive Order 13514 Section G, which ensures that at least 15% of the agency's existing buildings and building leases above 5,000 gross square feet meet the Guiding Principles by December 15, 2015, and that the agency makes annual progress toward 100% agency conformance.

The first half of this course will outline the general requirements you will need to understand to meet the "15% of existing buildings" requirement for Guiding Principles compliance by 2015.

1.7 Determining Appropriate Buildings

Now we will review target strategies, which include determining the target buildings and how to establish an agency's 15% value. Anything classified as a "structure" would not be subject to the Guiding Principles.

For many agencies, 15% of their buildings represent only a small portion of their total number of buildings. When considering the total number of buildings within an agency, an agency must identify new buildings or buildings that will be constructed by the 2015 deadline. An agency must also consider buildings that will be removed from the site by the deadline.

It is important to identify leased facilities within the agency. For the most part, it is advisable to exclude leased facilities from consideration for the 15% compliance. This removes potential difficulty of negotiating with landlords or other tenants who utilize leased facilities. However, some sites may have a substantial portion of leased facilities, and leased buildings will need to be included in the agency's target 15%.

Agencies must also consider any buildings that have third-party certifications. These buildings are worth considering as part of the target 15%. It is often less complicated to work Guiding Principles into these third party certifications.

1.8 Defining Guiding Principles Compliance

Buildings are considered compliant if an agency can demonstrate that a building is compliant with each of the five Guiding Principles for Sustainable Existing Buildings.

Buildings are also considered compliant if a documented commitment to a third-party existing building certification was made prior to October 1, 2008. The building must be third-party certified to meet the requirements of a multi-attribute green building standard or rating system developed by an ANSI-accredited organization.

1.9 Third Party Certification – Q&A

There are some questions that arise regarding Guiding Principles and third party certifications. Guiding Principles are not the same as LEED or Green Globes -- they are a distinct set of requirements for federal agencies. However, LEED or Green Globes can be used to achieve the Guiding Principles in a federal agency.

Because LEED and Green Globes are distinct from the Guiding Principles, existing buildings do not need to meet LEED, Green Globes, or other third party programs. Instead, they need to align directly with the Guiding Principles.

With energy, for example, EPA Energy Star Energy Performance Ratings may be required for some Guiding Principles, based on which option an agency chooses to meet the Guiding Principles for Energy Optimization Performance for a particular building. EPA's Portfolio Manager is a web-based interactive program that can benchmark energy usage and provide an energy performance rating that can be used to meet the Guiding Principles.

So, achieving third party certification alone will not always guarantee conformance to the Guiding Principles. For agencies that choose to use green building certification systems, project managers and designers must be careful to meet the Guiding Principles as well as minimum third party certification requirements.

1.10 Identifying Documents for Compliance

Collect on-site documents to meet the Guiding Principles' requirements efficiently. Helpful on-site documents include: building blueprints, site plans, past and current utility bills, sustainability plans or policies, purchasing procedures, specifications and contracts, waste and recycling service provider contracts and bills, and operation and maintenance manuals.

Reviewing this type of documentation up front creates an overview of where an agency stands in relation to meeting the Guiding Principles. It also clarifies what actions should be taken in order to meet the Guiding Principles fully.

Notes from the Field:

If you are considering third party certification in addition to the Guiding Principles, you should develop documentation that encompasses both the Guiding Principles and third party certification.

This ensures procedural cohesion and limits redundant paperwork. It is preferable to look to previous documentation from third party certification that you have achieved already. You may be able to consolidate this documentation to make it applicable site-wide or for multiple buildings to meet the Guiding Principles.

Once again, the Guiding Principles allow agencies to utilize site-wide documentation. Agencies should collect existing site-wide documentation and use it, or modify it, to achieve the Guiding Principles.

Establish, maintain, and monitor a central documentation location. Agencies should use or modify any existing system in place. This ensures an easily accessible, central location to keep documentation. Be certain to keep documents updated to their latest versions.

1.11 Preparing for Compliance Documentation

Good documentation should guide roles and responsibilities, while minimizing identification of specific individuals. This reduces the need for document revision as personnel changes. Remember: team collaboration is important!

It is advisable to prepare documentation that can meet multiple Guiding Principles as well as other executive order requirements. A consistent and accessible archiving process is important for good data management. Identify applicable processes to ensure accuracy, reliability, and performance. Overall, structure your documentation to be easily updated and require minimal revision over time.

1.12 Determining Applicability

As you review buildings to determine which to include in your 15% target, you may find some buildings that the Guiding Principles don't seem to apply to.

For example, some buildings may not have full time occupants due to their unique or mission-driven functions. There are several Guiding Principles that only apply if the building has occupants, such as occupancy surveys or indoor air quality measures.

Though these buildings may not fit into the Guiding Principles, they can still be considered compliant with the Guiding Principles. The focus of compliance is that a building meets applicable Guiding Principles. If applicable Guiding Principles are met, the building is assumed to be in compliance. Required actions cannot be deemed inapplicable because of difficulty or cost, unless otherwise specifically stated in the Guiding Principles' text.

1.13 Agency Existing Documentation and Assessments

In preparing for and documenting compliance with the Guiding Principles, many agencies find that after reviewing their existing documentation, their targeted buildings meet 40-50% of the Guiding Principles.

This documentation can include: site-wide or building specific policies, plans, assessments, purchasing and procurement procedures, environmentally preferred specifications, or contract specifications. If current documentation does not already meet the Guiding Principles, this is the time to start considering modifications or revisions that do meet them.

1.14 Guiding Principle I Overview

Now that we have covered the background and preparation to achieve compliance, the second part of this course will focus on Guiding Principle I: Employ Integrated Assessment, Operation, and Management Principles.

Under Guiding Principle I, we will cover the following:

- Integrated Team,
- Environmental Management System,
- Assessment,
- Operations,
- Building Management,
- Building Occupant Education,
- Occupancy Surveys, and
- Commissioning.

1.15 Integrated Team

Use an integrated team to develop and implement policy regarding sustainable operations and maintenance. ENERGY STAR Portfolio Manager is a benchmarking tool with a Sustainability tracking feature called the "Sustainability Checklist."

The Checklist has a reporting feature that is helpful for agencies to track their portfolio progress across buildings and across each Guiding Principle. Click on the link for the Recommended Evidence of Compliance.

Recommended Evidence of Compliance: Use the Portfolio Manager HPSB Checklist to document team members or provide a team roster, team charter, or equivalent. Click on the link for the Recommended Evidence of Compliance.

1.16 Environmental Management System

Incorporate sustainable operations and maintenance practices within the appropriate Environmental Management System (EMS). Click on the link for the Recommended Evidence of Compliance.

Recommended Evidence of Compliance: There must be existence of an EMS under which the building functions.

EMS may be implemented at appropriate site or organizational levels, as determined by site or M&O management. An EMS is not required for each building.

1.17 Assessment

Assess the existing condition and operational procedures of the building and major building systems, and identify areas for improvement. Click on the link for the Recommended Evidence of Compliance.

Recommended Evidence of Compliance: Evidence of building condition assessments, evaluations, audits or commissioning reports.

1.18 Operations

Incorporate a building management plan to ensure that operating decisions and tenant education are carried out with regard to integrated, sustainable building operations and maintenance. Click on the link for the Recommended Evidence of Compliance.

Recommended Evidence of Compliance: Documented performance goals are required. They may be included within existing EMS plan under which the building functions or Site Sustainability Plan (SSP).

1.19 Building Management

Incorporate a building management plan to ensure that operating decisions and tenant education programs on integrated, sustainable building operations and maintenance are carried out. Click on the link for the Recommended Evidence of Compliance.

Recommended Evidence of Compliance: There must be a building management plan to support performance goals. A set of operational and maintenance procedures or SOPs for managing building systems to support building performance goals.

1.20 Occupant Education

Augment building operations and maintenance as needed using occupant feedback on work space satisfaction. An occupant survey is a means to meet this requirement. Look for opportunities to combine facility surveys where appropriate, and be ready to take corrective actions. Click on the link for the Recommended Evidence of Compliance.

Recommended Evidence of Compliance: Site-level or building-specific occupant education literature, training sessions, or outreach events. Display boards or video displays highlighting the sustainable improvements and operating decisions/actions you wish to promote. Flyers, brochures, or intranet announcements. Employee training, workshops, or special events.

1.21 Workplace Satisfaction

The Guiding Principles require occupant surveys, including formal procedures for obtaining occupant feedback. Look for opportunities to combine facility surveys where appropriate, and be ready to take corrective actions. Click on the link for the Recommended Evidence of Compliance.

Recommended Evidence of Compliance: Formal procedures for obtaining and addressing occupant feedback on a regular schedule. Occupant satisfaction surveys. Service call logs with documented follow up action. Documented communication with occupants.

1.22 Commissioning Requirements

Employ re-commissioning that is tailored to the size and complexity of the building and its system components. This is necessary to optimize and verify performance of fundamental building systems.

Commissioning must be performed by an experienced provider. When building commissioning has been performed, the commissioning report, summary of actions taken, and schedule for re-commissioning must be documented. In addition, it must meet the requirements of EISA 2007, Section 432, and associated FEMP guidance.

Building re-commissioning must have been performed within the past four years in order to report a building as meeting the Guiding Principles. Click on the link for more information on EISA Section 432.

1.23 Commissioning Definitions

There are some common definitions for Re-commissioning and Retro-commissioning. Click on the terms to view these definitions.

Recommissioning. A process of “(i) of commissioning a facility or system beyond the project development and warranty phases of the facility or system; and (ii) the primary goal of which is to ensure optimum performance of a facility, in accordance with design or current operating needs, over the useful life of the facility, while meeting building occupancy requirements.” (42 U.S.C. 8253(f)(1)(F))

Retrocommissioning. A process of commissioning a facility or system that was not commissioned at the time of construction of the facility or system. (42 U.S.C. 8253(f)(1)(G)) Retrocommissioning does not include the replacement of significant HVA and other system components. Rather, it focuses on the verification of the proper controls strategies, sequences of operation, control component functionality, operations and maintenance procedures and strategies, and other building optimization opportunities.

Notes From the Field:

Major systems to include in commissioning:

- Heating system and distribution
- Cooling system equipment and distribution
- Air-handling and fan-coil units and air-distribution system
- Ventilation and exhaust systems
- HVAC controls
- Lighting and daylighting controls
- Electrical submetering systems
- Domestic hot-water system
- Water fixtures
- Building envelope and moisture penetrations
- Other systems identified or detailed in facility drawings and technical specifications

1.24 Commissioning Approach

Structure the Energy and Water Audits so they will meet the Commissioning Requirement of the Guiding Principles. This image shows some examples of the types of conservation measures that may result from an audit or commissioning.

This diagram shows a process to combine the building audit and commissioning. Recognize that, as you conduct the building audit, you can also be in the process of commissioning your facility. Identify items needed for maintenance, parts of your building automation system that can be updated, and potential capital improvements.

As you move forward, some maintenance items can be implemented quickly, whereas capital improvements will take some time. Keep this in mind during your planning process. Part of the commissioning process is being able to identify maintenance problems that can be corrected quickly, and this will help you comply with the Guiding Principles.

1.25 Commissioning Compliance

Evaluating other building systems, including the building envelope or moisture control also helps to meet other Guiding Principles. A retrocommissioning team also performs “quick fixes” during the discovery phase. Simple repairs and adjustments, such as cleaning a coil, can make a big difference.

We will use the term commissioning to mean all types of commissioning – retro or recommissioning.

- Documentation should be brief, accurate, and actionable.
- The emphasis should be on reliable and usable documentation.
- Keep the retrocommissioning scope focused on the facility’s mission.
- Collect only important and especially useful information.

Click on the link for the Recommended Evidence of Compliance.

Recommended Evidence of Compliance: Provide a report with recommended actions and schedule.

1.26 Commissioning Resources

Here is a list of some of the most useful resources on commissioning.

1.27 Guiding Principle I: Course Summary

This course covered “Getting Started with the Guiding Principles” and “Guiding Principle I: Employ Integrated Assessment, Operation, and Management Principles.”

We covered the following:

Getting Started

- Background
- Planning
- Documentation

Guiding Principle I

- Integrated Team,
- Environmental Management System,
- Assessment,
- Operations,
- Building Management,
- Building Occupant Education,
- Occupancy Surveys, and
- Commissioning.

Thank you for your interest and commitment for Federal Leadership in Sustainable High Performance Buildings. We hope that you will also take the other e-Trainings in this series on the Guiding Principles.

Now, please take a moment to click on the link at the top of your screen to complete the quiz and a short course evaluation. This will provide you with continuing education credits and provide FEMP with valuable feedback to continue to improve training offerings.

End of Guiding Principle I Course