

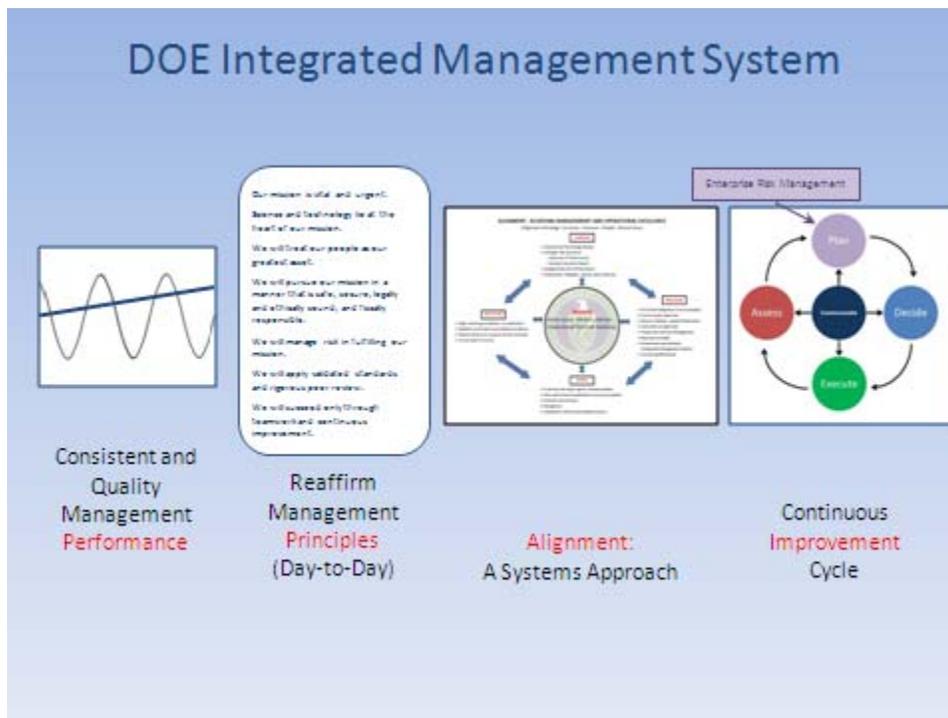
DOE's Integrated Management System

August 3, 2012

Secretary Chu released the **DOE Strategic Plan in May 2011**, which established a vision for transformational clean energy, science, and security solutions that are significant, timely, and cost effective. Secretary Chu indicated that to successfully achieve this vision will require a **sustained commitment to management and operational excellence** (identified as one of the four strategic goals for the Department).

Strategic Goal: The strategic goal is "Achieving Management and Operational Excellence by establishing an operational and adaptable framework that combines the best wisdom of all Department stakeholders to maximize mission success."

Achieving Management and Operational Excellence (Strategic Goal) includes improving the safe, secure, efficient, and effective mission execution via improved management processes called the **Integrated Management System**, which includes an **Enterprise Risk Management Model**, the day-to-day reaffirmation of our **Management Principles**, and the use of a **Continuous Improvement Cycle** to support mission related **plans and decision making**.



An Integrated Management System (IMS) can help to improve consistency in our processes and mission execution with quality output.

An Integrated Management System should reaffirm DOE's Management principles on a day to day basis.

An Integrated Management System should involve an operational and adaptive framework for system thinking.

Alignment is our Operating Model towards achieving Management and Operational Excellence.

We are taking a systems approach to align DOE's Strategy, Structure, Processes, and People such that they are better focused on mission.

An Integrated Management System should have a continuous improvement cycle.

Plan, Decide, Execute, and Assess with **Communication** throughout – is our continuous improvement cycle.

PLAN: Leaders should conduct rigorous ‘up front’ planning when leading change towards improvement.

The planning should include a clear statement of the “intent and purpose” of the change effort.

The planning should be informed by the potential **costs, benefits, risks, and effect on safe and secure mission performance**. DOE’s Enterprise Risk Management (ERM) model is germane in this effort.

The planning should identify ‘up front’, the measures of effectiveness and/or measures of performance (metrics) which characterize the successful achievement of ‘intent and purpose’.

The planning should be inclusive of a diverse group of men and women who are knowledgeable and experienced stakeholders.

The planning should involve regular communication and collaboration.

Enterprise Risk Management (ERM) is important because it supports the Department’s **strategy** to “achieve Management and Operational Excellence”, and it is consistent with our Management **principles** including: “we will manage risk in fulfilling our mission” and “we will succeed only through teamwork and continuous improvement.” Additionally, in these times of austere budgets, we must take a deliberate, systematic approach for management and operations – how we make risk informed **plans and decisions***, govern how we establish and implement requirements, and how we hold ourselves accountable – so that we consistently deliver results in the most safe, secure, efficient, and effective way possible.

ERM will help provide a framework to clearly articulate the processes we use for program execution and governance. It will better enable DOE to consistently speak with one voice to our contractors, customers, and stakeholders.

The proposed Enterprise Risk Management (ERM) Model, when employed, should generally be at the policy and plans decision making level.

Department of Energy Enterprise Risk Management Model Summer 2012 Update



Direction from the Secretary and recommendations of a team of senior leaders has prompted the Department to adopt an Enterprise Risk Management (ERM) Model that will provide a common risk-based decision-making framework focused on mission outcomes.

The goal of the ERM Model is to identify risks associated with Department actions/operations/ decisions and ensure these risks are mitigated in a way that assures DOE resources are allocated in the most effective and informed manner.

The ERM Model will be used to analyze and address risks at the policy level of the Department of Energy (DOE). Using a combination of qualitative and quantitative methods, risks of a DOE system or process are analyzed and then external controls are identified to mitigate these risks. Only after it is clear there are no external controls available to mitigate the identified risks will DOE develop its own controls. The ERM Model provides the general idea how to conduct the listing of risks, identifying external controls, and subsequently writing any DOE controls.

The ERM Review Process: Analyze risks and determine controls for incorporation into decision making. This process utilizes a team of senior level representatives chosen by members of the appropriate DOE Decision making Board/Council. This team will conduct the review using the following **FIVE** steps:

1. **Risk Identification.** What can go wrong? List all possible events that could occur in a subsystem if there are no controls. Once risks are identified, combine like risks according to the following key areas impacted by the risks: people, mission, physical assets, financial assets, and customer/stakeholder trust.
2. **Risk Analysis.** What is the likelihood and impact? Rate risks according to probability and impact.
3. **Requirements Identification.** What is in place to prevent it? List all controls that would exist without DOE subsystem-specific controls.
4. **Controls Identification.** What else is needed to control the risk? Where there is a significant or extreme risk rating, list gaps between existing risks and existing controls.
5. **Risk Registry.** What documentation is needed so that the logic and conclusions are clear? Create a register that documents the results of the risk evaluation, including the events, probabilities, impacts, and risk management strategy.



Risk Management Review Process

Creation of additional Requirements and Controls must reflect a systematic risk evaluation, cost-benefit analysis, and clear risk management strategy. **The risk strategy (acceptance, avoidance, monitoring, and/or mitigation)** determines needed controls.

		Impact			
		Negligible	Low	Medium	High
Probability	Certain	Minor	Moderate	Extreme	Extreme
	Likely	Minor	Moderate	Significant	Extreme
	Possible	Minor	Moderate	Significant	Extreme
	Unlikely	Minor	Minor	Moderate	Significant
	Rare	Minor	Minor	Minor	Moderate

Minor – risk acceptance may be preferred

Moderate – existing controls may be adequate

Significant – may need to add more controls

Extreme – more controls likely needed

Next Steps

- **Inserting ERM into Directives Management:**
 - A team comprised of senior level staff and subsystem subject matter experts chosen by Directives Review Board (DRB)
 - Analysis will follow the ERM model
 - Proposed controls will be part of the Justification Memorandum (JM) sent to the DRB for review and approval
 - Draft requirements document codifies the proposed list of controls in an efficient and effective manner
 - Draft submitted for corporate-wide review through RevCom, comments are reviewed by the team, and recommendations are presented to the DRB for a determination on which to incorporate
 - The formal approval package comprises the risk register, the JM, the comments disposition, and the final directive
- Asking departmental elements that practice risk management to join the Risk Management Community of Interest
- Promoting and using a common risk management language and capability across the DOE complex.

Additional information is available on Powerpedia (Measure of Performance #8):

- https://powerpedia.energy.gov/wiki/M%26OE_MOP8#.238_Improving_Mission_Execution_-_Requirements

ERM Team Contact Information:

- Mike Wels, Department of Energy, Fermi Site Office (630.840.3281)
- Adam Cohen, PhD, Deputy Director, Princeton Plasma Physics Laboratory, Princeton University (609.243.3555)

DECIDE: Leaders should be deliberate and clear when making decisions.

Decisions should be inclusive of a diverse group of men and women who are knowledgeable and experienced stakeholders.

Decisions should involve regular communication and collaboration, and should ensure that the decisions (change effort) are understood amongst key stakeholders, and that commitment (resources) and action is taken to achieve the “intent and purpose”.

Key decisions (directives, orders, policy memorandum) should require that appropriate training be conducted to help ensure understanding and commitment.

Key decisions should be institutionalized (documented and signed) to ensure accountability, and to enable future changes towards improvement.

EXECUTE: Mission execution of decisions (change) should be performed in a safe, secure, efficient, and effective manner towards realizing ‘intent and purpose’.

Execution should include communication to provide leaders with real time feedback on the effectiveness of decisions (change).

ASSESS: Leaders should ask for and receive feedback on the decisions (change), and assess the adequacy and effectiveness of those decisions (change). **Assessments should include mission execution results via the same qualitative and quantitative measures of effectiveness and/or measures of performance (metrics) which were developed during the planning phase of the continuous improvement cycle.**

- We should assess whether **safe, secure, efficient, and effective mission execution** improved, stayed the same, or regressed as a result of the decisions (change)?
- We should assess whether any planned/anticipate **costs** were achieved and by how much (additional costs, cost savings, cost avoidance)?
- We should assess whether any planned/anticipated **benefits** to mission execution were achieved (reduced time, higher quality, increased collaboration and teamwork, etc.)?
- We should assess whether the planned/anticipated **risks** to mission were realized or not (low risk, moderate risk, high risk, etc.) per the Enterprise Risk Management model?

Assessments should involve communication and collaboration amongst key stakeholders.

Assessments should ‘trigger’ the need for any additional decisions (change) towards continual improvement.

COMMUNICATE: Throughout the continuous improvement cycle there should be regular communication and collaboration amongst key stakeholders. We should leverage modern technology (e.g. powerpedia, websites, video teleconferences, desktop virtual environments, etc.) to enhance our ability to communicate and collaborate.

In summary, an **integrated management system** can **eliminate redundancy and unnecessary requirements**, and build on efforts to change our governance model to **reflect reliance on strong Federal line oversight and Contractor Assurance Systems that confirm performance without duplicating effort** or unnecessarily validating results. Consistent with our Strategy (DOE Strategic Plan), the initial efforts (calendar year 2012) to **improve mission execution** via the implementation of a **DOE Integrated Management System will be related to 3 strategic challenges/opportunities and will involve the implementation of a Department wide Enterprise Risk Management (ERM) model to inform decisions, the reaffirmation of the DOE Management Principles, and the use of a “corporate” continuous improvement cycle:**

- **Requirements generation process** - Align roles and responsibilities across the complex (e.g. a more consistent and effective Requirements generation process);
- **Human Capital management** - Develop the most highly-qualified, capable, and flexible federal workforce (e.g. a more consistent and effective M&O Contractor and Federal Human Capital management process);
- **Real Property management** - Leverage infrastructure to support mission (e.g. consistent/effective Real Property management).