"EFCOG's Knowledge Portal Review"
2011 Waste Management Symposium

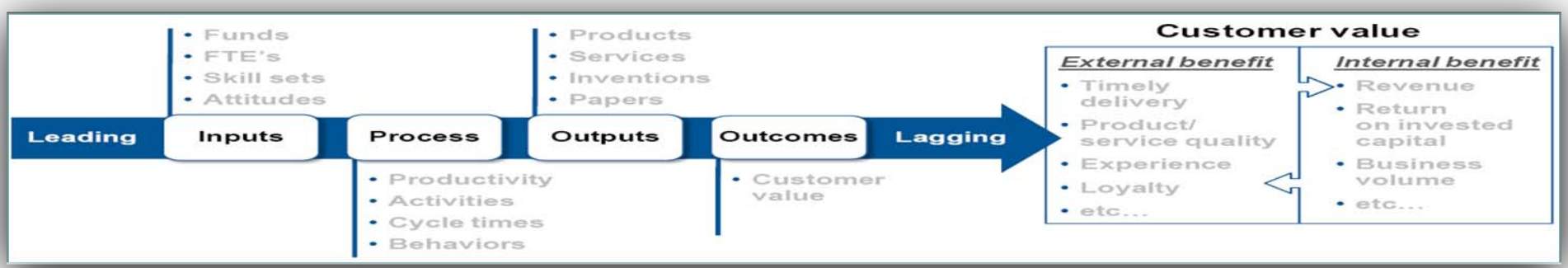
Leading Indicators/Contractor Assurance Initiatives

Presented by

Jack Anderson
Contractor Assurance Working Group
Panel Session 59
March 2, 2011

EFCOG Leading Indicator initiative

- Purpose
  - provide a general framework for developing leading indicators that can be applicable across the broad DOE portfolio
  - improve understanding and lessen confusion
  - share best practices within the community
  - help managers by providing tools to optimize their operations

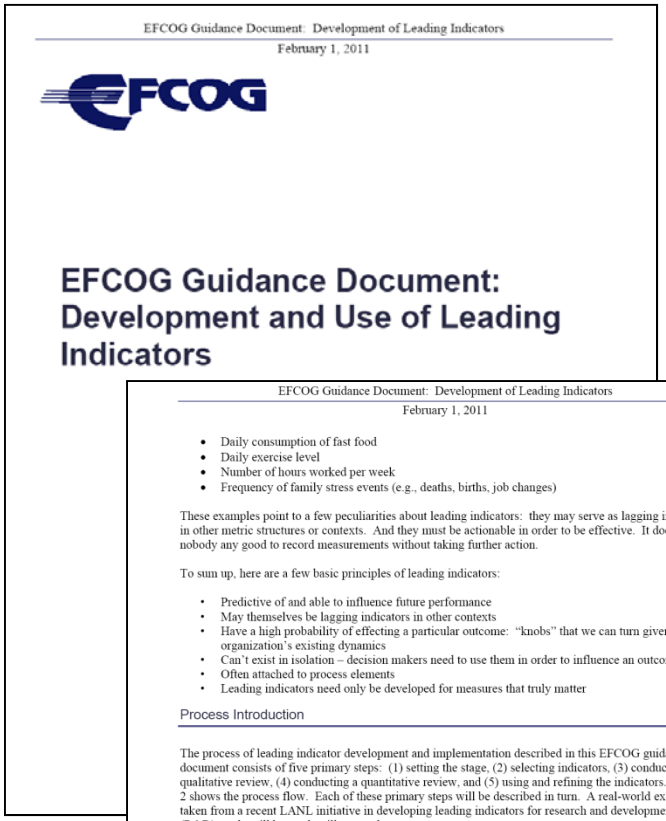


Leading Indicators - Guiding Principles

- indicators must help us ask better questions
- indicators must have a logical connection to mission outcome(s)
- indicators should be objective and easy to interpret
- measure only where there is a commitment to analyze the results
- analyze results only if there is a commitment to take action
- maintain a focus on the vital few

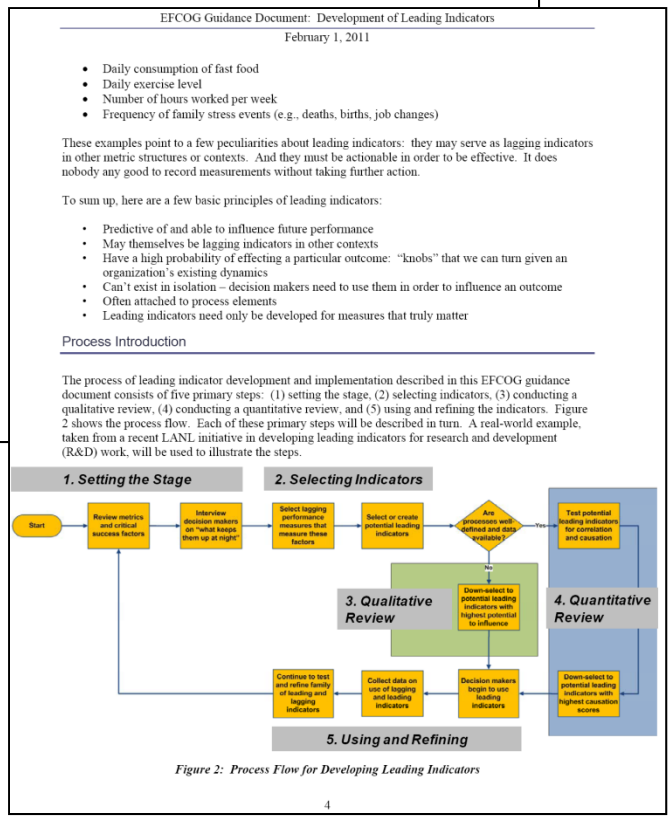
Outcomes

- Eleven month, multi-lab/multi-facility effort
- EFCOG Guidance Document provides:
  - conceptual foundation
  - process guidelines (roadmaps)
  - indicator development techniques and templates (toolkit)
  - use and refinement guidelines


EFCOG Guidance Document: Development of Leading Indicators
February 1, 2011

EFCOG

EFCOG Guidance Document: Development and Use of Leading Indicators


EFCOG Guidance Document: Development of Leading Indicators
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- Daily consumption of fast food
- Daily exercise level
- Number of hours worked per week
- Frequency of family stress events (e.g., deaths, births, job changes)

These examples point to a few peculiarities about leading indicators: they may serve as lagging indicators in other metric structures or contexts. And they must be actionable in order to be effective. It does nobody any good to record measurements without taking further action.

To sum up, here are a few basic principles of leading indicators:

- Predictive of and able to influence future performance
- May themselves be lagging indicators in other contexts
- Have a high probability of effecting a particular outcome: "knobs" that we can turn given an organization's existing dynamics
- Can't exist in isolation – decision makers need to use them in order to influence an outcome
- Often attached to process elements
- Leading indicators need only be developed for measures that truly matter

Process Introduction

The process of leading indicator development and implementation described in this EFCOG guidance document consists of five primary steps: (1) setting the stage, (2) selecting indicators, (3) conducting a qualitative review, (4) conducting a quantitative review, and (5) using and refining the indicators. Figure 2 shows the process flow. Each of these primary steps will be described in turn. A real-world example, taken from a recent LANL initiative in developing leading indicators for research and development (R&D) work, will be used to illustrate the steps.

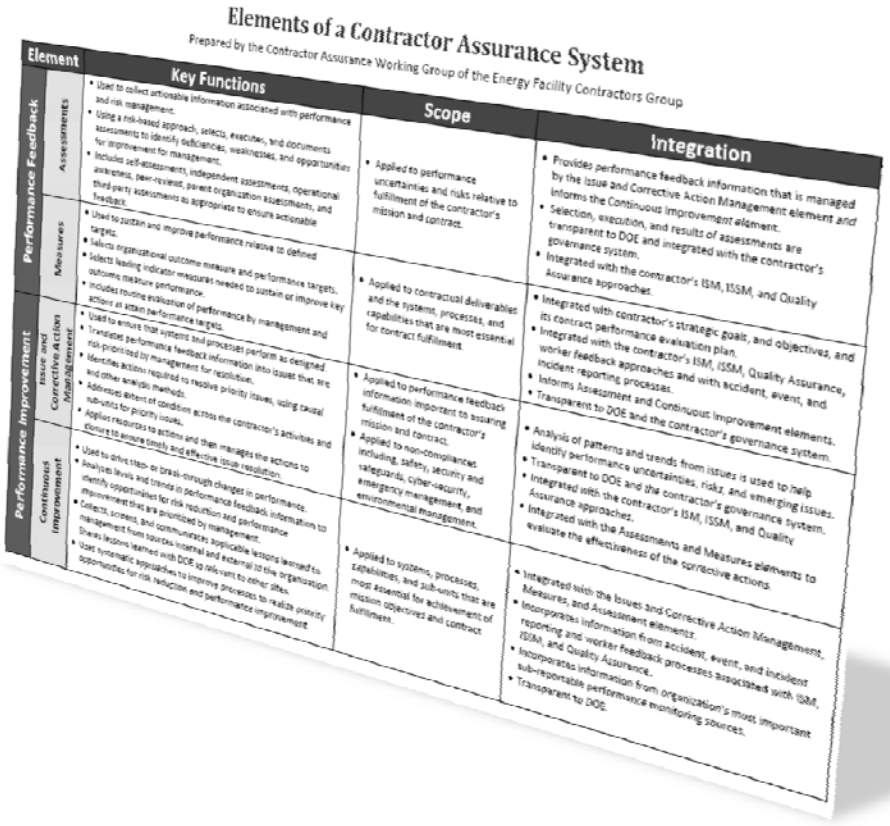
Figure 2: Process Flow for Developing Leading Indicators

4

Guide available at:
http://www.efcog.org/wg/ca/index.htm

Contractor Assurance Initiatives

- A solid foundation is in place
  - Engaged in development of DOE-SC updated contractor assurance model
  - Contributed to several NNSA Corporate CAS Validation efforts
  - Identified several best practices
    - Deployed staff model
    - Performance communication center
    - Human performance factors within causal analysis
  - Authored two white papers
    - Common elements of a Contractor Assurance System
    - A model for CAS self-assessment

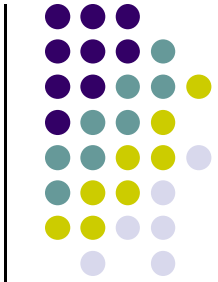


Elements of a Contractor Assurance System

Prepared by the Contractor Assurance Working Group of the Energy Facility Contractors Group

Element		Key Functions	Scope	Integration
Performance Feedback	Assessments	• Used to collect actionable information associated with performance and risk management. • Using a risk-based approach, selects, executes, and documents assessments to identify deficiencies, weaknesses, and opportunities for improvement for management. • Includes self-assessments, independent assessments, operational awareness, peer-reviews, parent organization assessments, and third-party assessments as appropriate to ensure actionable feedback.	• Applied to performance uncertainties and risks relative to fulfillment of the contractor's mission and contract.	• Provides performance feedback information that is managed by the Issue and Corrective Action Management element and informs the Continuous Improvement element. • Selection, execution, and results of assessments are transparent to DOE and integrated with the contractor's governance system. • Integrated with the contractor's ISM, ISSM, and Quality Assurance approaches.
	Measures	• Used to sustain and improve performance relative to defined targets. • Selects organizational outcome measure and performance targets. • Selects leading indicator measures needed to sustain or improve key outcome measure performance. • Includes routine evaluation of performance by management and actions at attain performance targets.	• Applied to contractual deliverables and the systems, processes, and capabilities that are most essential for contract fulfillment	• Integrated with contractor's strategic goals and objectives, and its contract performance evaluation plan. • Integrated with the contractor's ISM, ISSM, Quality Assurance, worker feedback approaches and with accident, event, and incident reporting processes. • Informs Assessment and Continuous Improvement elements. • Transparent to DOE and the contractor's governance system.
Performance Improvement	Issue and Corrective Action Management	• Used to ensure that systems and processes perform as designed • Translates performance feedback information into issues that are risk-prioritized by management for resolution. • Identifies actions required to resolve priority issues, using causal and other analysis methods. • Addresses extent of condition across the contractor's activities and sub-units for priority issues. • Applies resources to actions and then manages the actions to closure to ensure timely and effective issue resolution.	• Applied to performance feedback information important to assuring fulfillment of the contractor's mission and contract. • Applied to non-compliances including, safety, security and safeguards, cyber-security, emergency management, and environmental management.	• Analysis of patterns and trends from issues is used to help identify performance uncertainties, risks, and emerging issues. • Transparent to DOE and the contractor's governance system. • Integrated with the contractor's ISM, ISSM, and Quality Assurance approaches. • Integrated with the Assessments and Measures elements to evaluate the effectiveness of the corrective actions.
	Continuous Improvement	• Used to drive step- or break-through changes in performance. • Analyses levels and trends in performance feedback information to identify opportunities for risk reduction and performance improvement that are prioritized by management. • Collects, screens, and communicates applicable lessons learned to management from sources internal and external to the organization. • Shares lessons learned with DOE as relevant to other sites. • Uses systematic approaches to improve processes to realize priority opportunities for risk reduction and performance improvement.	• Applied to systems, processes, capabilities, and sub-units that are most essential for achievement of mission objectives and contract fulfillment.	• Integrated with the Issues and Corrective Action Management, Measures, and Assessment elements. • Incorporates information from accident, event, and incident reporting and worker feedback processes associated with ISM, ISSM, and Quality Assurance. • Incorporates information from organization's most important sub-reportable performance monitoring sources. • Transparent to DOE.

Contractor Assurance Reviews



- Experiences, to-date, from the Office of Science Assurance Peer Review and NNSA affirmation processes
  - Assurance systems solidly in place, with improvement agendas
  - Process discipline allows success to be repeated

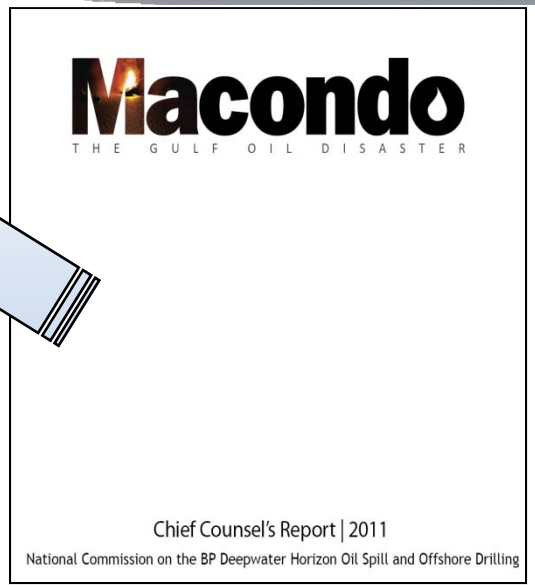
- Underlying maturation themes from reviews
  - Effectiveness (performance and impact)
  - Efficiency (streamlining where possible)
  - Sustainability (system stands test of time)
  - Self assessment value/integration
  - Socialize/Enhance (or Flow Down) CAS into organization to enhance maturity
  - Evidence of CAS integration with management systems exists but needs to be further strengthened

It's about leadership…

"…the blowout occurred in large part because the companies diffused knowledge, responsibility for, and ownership of safety among themselves and among groups of people. ***The people onshore and on the rig had a false sense of security. They did not recognize the need for individual leadership in addressing the multiple anomalies and uncertainties that they observed.*** *Instead, they relied on many ambiguous — dotted line relationships within and between the companies and personnel involved.*

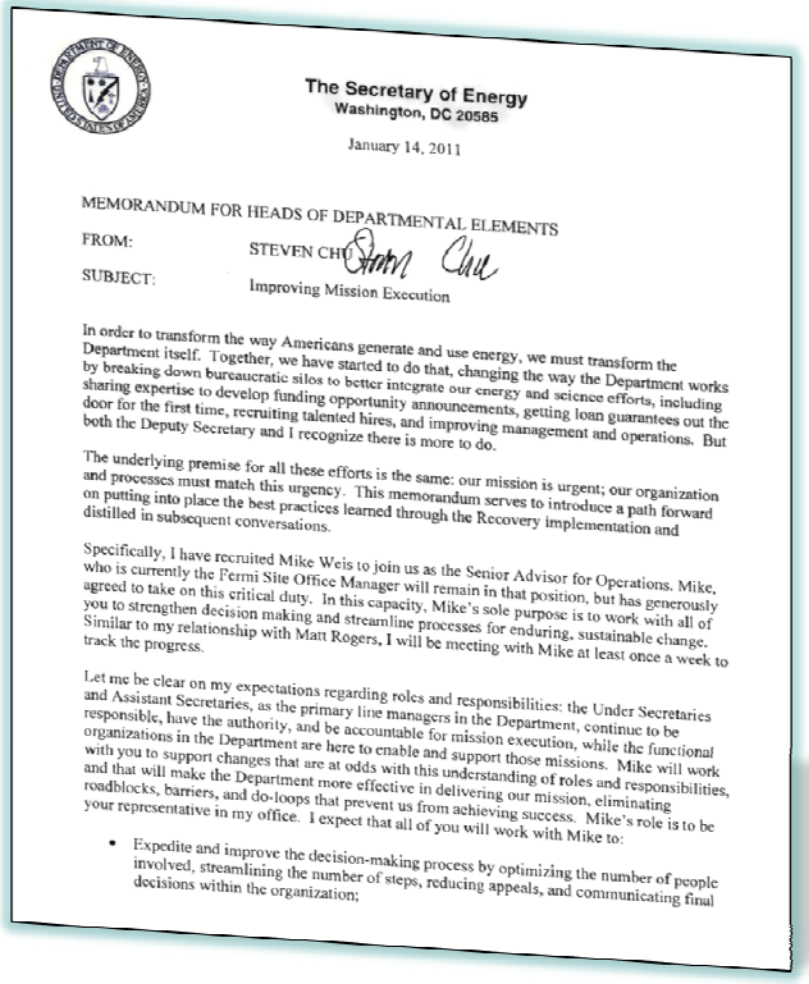
To prevent an incident at Macondo from ever happening again, ***it will not be enough merely to add regulatory personnel. Just putting more inspectors on the Deepwater Horizon would not have prevented this blowout. Nor will it be enough to issue new prescriptive regulations or write more voluminous safety manuals. Adding a new — 'don't do this either' rule after every accident ensures staying behind the curve.***

What the men and women who worked on Macondo lacked—and what every drilling operation requires—was a culture of leadership responsibility. In hostile offshore environments, ***individuals must take personal ownership of safety issues with a single-minded determination to ask questions and pursue advice until they are certain they get it right."***



There are new challenges ahead…

- Realities
  - a changing fiscal environment is on the horizon
- There are opportunities for Assurance Systems to support a new improvement agenda:
  - streamlining processes
  - alignment of authorities and accountabilities
  - risk-informed decision making processes
  - optimizing oversight activities



The Secretary of Energy
Washington, DC 20585

January 14, 2011

MEMORANDUM FOR HEADS OF DEPARTMENTAL ELEMENTS

FROM: STEVEN CHU

SUBJECT: Improving Mission Execution

In order to transform the way Americans generate and use energy, we must transform the Department itself. Together, we have started to do that, changing the way the Department works by breaking down bureaucratic silos to better integrate our energy and science efforts, including sharing expertise to develop funding opportunity announcements, getting loan guarantees out the door for the first time, recruiting talented hires, and improving management and operations. But both the Deputy Secretary and I recognize there is more to do.

The underlying premise for all these efforts is the same: our mission is urgent; our organization and processes must match this urgency. This memorandum serves to introduce a path forward on putting into place the best practices learned through the Recovery implementation and distilled in subsequent conversations.

Specifically, I have recruited Mike Weis to join us as the Senior Advisor for Operations. Mike, who is currently the Fermi Site Office Manager will remain in that position, but has generously agreed to take on this critical duty. In this capacity, Mike's sole purpose is to work with all of you to strengthen decision making and streamline processes for enduring, sustainable change. Similar to my relationship with Matt Rogers, I will be meeting with Mike at least once a week to track the progress.

Let me be clear on my expectations regarding roles and responsibilities: the Under Secretaries and Assistant Secretaries, as the primary line managers in the Department, continue to be responsible, have the authority, and be accountable for mission execution, while the functional organizations in the Department are here to enable and support those missions. Mike will work with you to support changes that are at odds with this understanding of roles and responsibilities, and that will make the Department more effective in delivering our mission, eliminating roadblocks, barriers, and do-loops that prevent us from achieving success. Mike's role is to be your representative in my office. I expect that all of you will work with Mike to:

- Expedite and improve the decision-making process by optimizing the number of people involved, streamlining the number of steps, reducing appeals, and communicating final decisions within the organization;

Next steps for CAWG -- refining and optimizing

- Identify best practices for development of corrective action plans, effectiveness reviews and sustainability of improvements

- Continue to advance approaches for development of an integrated, risk-informed assessment schedule