

Department of Energy
Integrated Safety Management



**Energy Facility
Contractors Group**

ENERGY FACILITY CONTRACTORS GROUP PERFORMANCE METRIC MANUAL

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OVERVIEW

This manual provides the “nuts and bolts” that the Savannah River Site (SRS) used in developing the site’s performance metrics. The Background and History section covers the system beginning, including where concepts were first established. The Benefits section describes the major benefits the site feels it has derived from the system. The next sections, Reading the Charts, Reading the Summary Sheets, and Calculating Summary Sheets, describe the system. The Department of Energy (DOE)/Contractor Involvement section explains the Savannah River Operations Office and Westinghouse Savannah River Company (WSRC) working relationship during the development of site metrics.

Six Sigma is a tool for improving processes being used throughout major companies in the United States. WSRC has adopted the tools from Six Sigma to analyze the underlying processes of the performance metrics. The Six Sigma section explains WSRC’s use of these tools and the expected outcomes are from this effort.

The Managing Metrics section describes specific steps used by the WSRC point of contact for performance measures to manage over 60 key performance indicators. These metrics required a communication strategy to inform site employees about the system,

which is described in the Communications section.

To further help the reader in developing a set of metrics for another DOE site, a list of SRS metrics, the definitions, goals and SRS subject matter experts for each metric, and the initial directions from the Washington Government Group are provided.

The EFCOG Performance Measures Sub Group has developed a data dictionary with suggested and required performance metrics for submission to DOE-HQ. The DOE-HQ submitted performance metrics are used by the Assistant Secretary for Environment and Health in the quarterly safety reviews. The data dictionary is included as a reference.

Appendix A is a presentation with notes that can be used to introduce an annunciator-type system within a site. Nuclear Safety performance metrics definitions used at SRS are explained in Appendix B.

It is hoped that this manual will assist other sites in the development of performance metrics. Comments and questions can be directed to Gail Jernigan, WSRC, Building 703-A Room A-129, Aiken, South Carolina. She can also be reached by calling 803-725-7774 or by email at gail.jernigan@srs.gov.

BACKGROUND

During the DOE Executive Safety Conference in December 2001, Undersecretary Bob Card asked for an annunciator-type performance metric system for the DOE Complex. SRS officials volunteered to become a pilot for the DOE Complex, and an EFCOG Subgroup was assigned responsibility for developing the process.

The annunciator-type system uses key performance indicators (KPIs) as its basis with a color rollup scheme, established by the commercial nuclear industry. It provides a quick status summary, which can be modified to suit various customers. The underlying principle behind each metric is the use of objectivity to assess performance. This system provides key information at a glance but provides the ability “drill down” to identify issues and actions. Instead of focusing on events, it provides an easy assessment of trends. It also encourages the sharing of expertise and knowledge and allows benchmarking of successes as well as analyzing problem areas.

SRS had been using a performance metric system based on the DOE-SR Site Manager’s Focus Areas. The process of defining and measuring performance in these Focus Areas had heightened the awareness of the SRS mission and objectives outlined in the SRS Strategic Plan

and had directed management attention to focus on achieving results.

In addition, WSRC had been using an annunciator-type system since January 2001 initiated by their parent company division, Washington Government Group (WGG) (now Washington Energy and Environment). Representatives from various business units and disciplines met to develop a set of metrics and their definitions. Standard descriptions and roll-up algorithms were developed. Because of the diversity of business units, the group was challenged to develop a set of consistent and useful parameters.

After becoming the pilot for the DOE Complex, SRS staff members used metrics from both the DOE-SR Focus Area metrics and the WEE Corporate metrics to develop a comprehensive list of site metrics. They “binned” the various metrics into the five DOE-SR Focus Areas. The list of metrics continues to be refined through monitoring by DOE-SR and WSRC.

As a further refinement, WSRC also uses the same annunciator-type system for each division within the company. Not all metrics are applicable to a division, and divisions may have additional metrics that management wishes to track to assess the division’s performance. Facilities also track their performance metrics using this same system.

BENEFITS

Listed below are some of the benefits of this system.

- ✓ Annunciator-type systems are flexible and can be easily and effectively tailored to:
 - Differing missions, facilities, programs and activities
 - Various management and organization levels
 - Differing management needs and interests
 - Areas of interest for temporary monitoring, such as problem programs, personnel performance trends, or short-term missions or activities
 - Diverse stakeholders by allowing different groupings to satisfy needs of DOE, Defense Nuclear Facility Safety Board, Congress, etc.
- ✓ The focus is on performance and results through key performance indicators (KPIs). The process facilitates synergistic and constructive management review and discussion of performance, vulnerabilities, trends, and priorities.
- ✓ The annunciator panel and site KPIs integrate a significant volume of data and performance knowledge into easily discernable and visually effective ratings.
- ✓ Color rollup using an annunciator panel allows quick “drill down” to source of problem area. Additional details can be found in the individual KPI. Site management can also determine if too many resources are being used with little benefit
- ✓ KPIs are objective. Eliminating the subjectivity of performance metrics allows management to focus on results and direct resources to areas of concern.
- ✓ Analysis/Action section of KPI allows assessment of problem status. A critical part of each KPI, the Analysis/Action section analyzes successes and failures. If the site is doing well in a particular area, others can learn from them. If the KPI is trending to yellow or red, this section will help management determine if appropriate actions are being taken to remedy the problems in the area being measured.
- ✓ An analysis of the summary panels allows/promotes sharing/prioritizing of resources/ideas across the site. Management can use the Analysis/Action section to promote sharing of ideas. In addition, if one focus area is doing extremely well, management can use this system to determine if resources should be reallocated to areas that need more attention.
- ✓ The process promotes constructive, beneficial competition and pride in performance accomplishments.
- ✓ The use of this system promotes consistency in approaches across the site. By using the same format for all metrics, site personnel can quickly assess the performance of a particular KPI without having to learn different performance measurement systems.
- ✓ This system facilitates continuous improvement. The use of these KPIs gives site personnel the ability to analyze their performance to lead to improved performance.

READING THE CHARTS



The box on the left represents the SRS’s Safety and Security box from the site’s Summary Charts. The small boxes across the top are the scores (color-coded) for the past four quarters. The oldest quarter is on the left, and the most current quarter is on the right. Others have used this to show the last four months instead of quarters. However, using quarters allows the reader to see what a particular area has done over the past year. The letter “B” in the box represents “Blue” for those who may not see this printed in color. The larger box is the current month, which also has a “B” for “Blue” in the bottom left corner.

Focus Area	Level 1					
Safety and Security	Industrial Safety	Emergency Services and Fire Protection	Radiological Safety	Nuclear Safety	Physical Security	
Tech Capability and Performance	Production	Infrastructure	Disciplined Operations	Employee Relations	Engineering	Project Management
Community, State and Regulatory Relationships	Environmental Release Index	Environmental Compliance Index	Public Participation Program	Public Perception		
Cost Effectiveness	Financial Forecasts	PBI Performance	Financial Performance	Feedback and Improvement		
Corporate Perspective	Oversight	Nuclear Non-Proliferation	EM Integration			

Reading the Summary Sheets

The chart above is an example of SRS Summary Chart for all of the site’s performance metrics. The first column represents the five DOE Focus Areas: Safety and Security; Technical Capability and Performance; Community, State and Regulatory Relationships; Cost Effectiveness; and Corporate Perspective.

Reading across provides the Level 1 performance for each focus area. For example, Safety and Security has the following Level 1 performance indicators: Industrial Safety; Emergency

Services and Fire Protection; Radiological Safety; Nuclear Safety; and Physical Security. For more details, a reader would go to the next level. (See chart below.)

Focus Area	Level 1	Level 2				
Safety and Security	G G G G	B B B B	B B B B	B B B B	B B B B	
		Industrial Safety and Health	TRC Rate	DART	Cost Index	
		B	B	B	B	
		B G G G	G G B B	B G G G	B R R R	G B B B
		Emergency Services and Fire Protection	Fire Protection Impairment Status	EPA Annual Review/Revision	Corrective Actions	Emergency Exercises/ Drills
		G	B	G	R	B
	Y G B G	G B B B	Y G B G			
	Radiological Safety	Reportable Dose Exceedances	Reportable Contamination			
	G	B	G			
	Y Y Y Y	Y Y Y Y	G G G G			
	Nuclear Safety	Nuclear Safety Issue Management Index	Significant Nuclear Safety Incidents Index			
	Y	Y	G			
	B B B B	B B B B				
	Physical Security	Security Incidents				
	B	B				
G						

The Safety and Security annunciator panel is the expanded version of the Safety and Security section shown on the previous page. Here the reader can see that Safety and Security is made up of Industrial Safety; Emergency Services and Fire Protection; Radiological Safety; Nuclear Safety; and Physical Security. Further study shows that Industrial Safety is composed of Total Recordable Case Rate, Lost Workday Case Rate, and Cost Index.

The annunciator panels are the result of rolling up several KPIs as shown. This allows readers to quickly see where the site is excelling and where there might be problems. Using summary charts and the individual performance metrics, managers, DOE-HQ, and others can “drill down” to an area of their particular interest.

For the Savannah River Site, a subset of the site metrics is being used to support DOE-HQ initiative where sites are submitting metrics to be discussed at quarterly safety reviews between Undersecretary Bob Card and his Program Secretarial Offices (PSOs). Using a subset eliminates unnecessary and duplicate work.

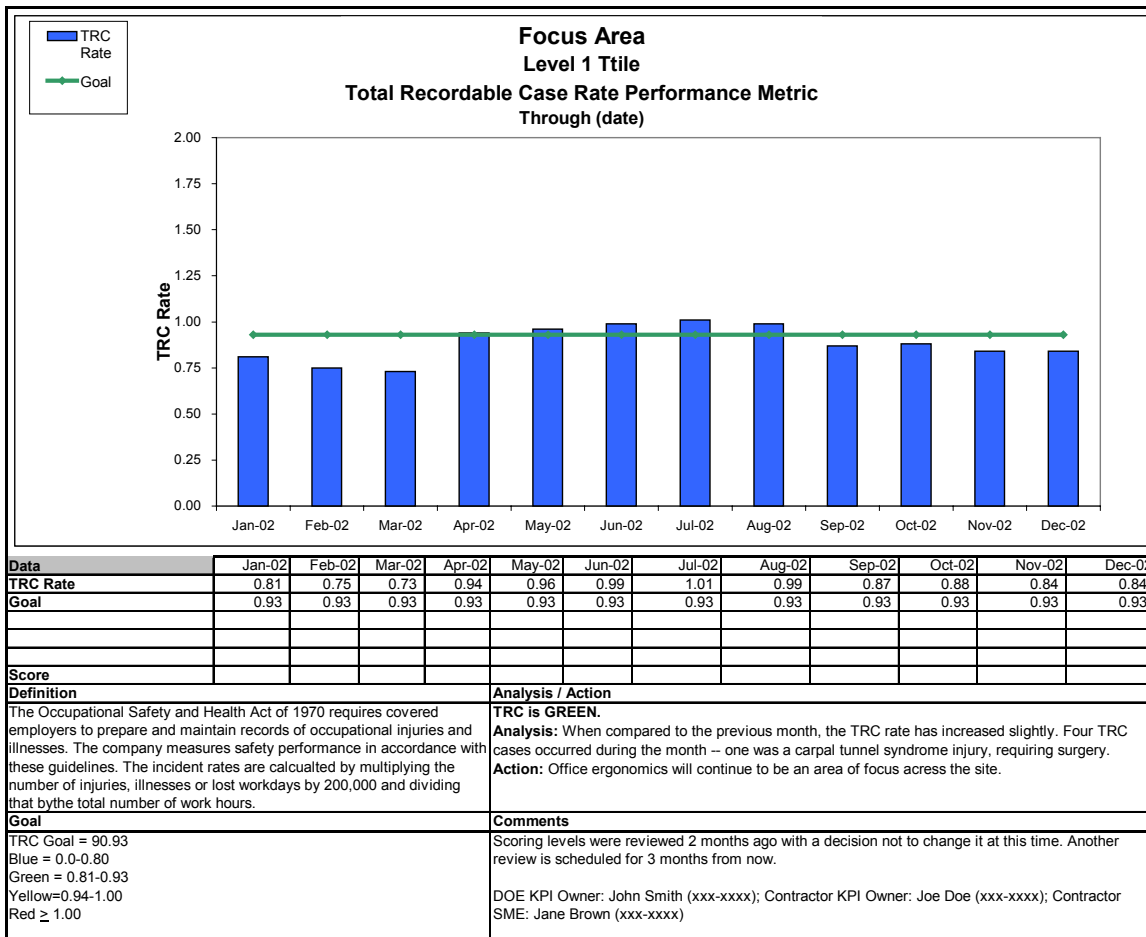
An example of the annunciator panel, using Undersecretary Card’s focus areas is shown on the next page.

Focus Areas	Site Level Annunciator Panel and Examples of Level 1 Inputs					
Management Systems	Regulatory Performance	Quality Assurance	Safety Culture	Authorization Bases	Stakeholder Relations	
	Radiation Protection	Industrial Safety and Health	Criticality Safety	Safeguards and Security	Project Management	Fire Protection
Operational Performance	Work Planning and Control	Emergency Preparedness	Environmental Protection	Near Misses	Transportation Management	Waste Management
	Systems and Equipment Essential to Safety	Construction Management	D&D	ER	Maintenance	Configuration Management

G	G	G	Y
Risk Reduction			
Y			

B	B	B	B
Project and Requirements Management			
B			

READING THE KEY PERFORMANCE INDICATOR



Above is a fictitious individual performance metric (or KPI). Specifically, this shows the site’s performance on Total Recordable Case Rate. The upper section provides a graph, where readers can see how the site’s performance has been over the past 12 months. It includes a line for the goal.

Underneath the graph is the actual data for this particular metric. Underneath that are four boxes. The first box is the “Definition,” which describes the metric being discussed by describing what is being measured. The box below that one is the “Goal,” which describes the site goal and the values for the various color-coded scores. To the right of the “Definition” box is the “Analysis/Action” section that describes why the site is where it is today. It answers questions such as “what are we doing to reach this level of performance and what are we doing to sustain this level of performance.” If the color is blue or green, this section would describe how the site level of performance is able to attain this level of performance. If the color is yellow or red, this section would describe specific actions the site is taking to improve in this area. Finally, in the lower right is a comment section with the WSRC Key Performance Indicator Owner, the WSRC subject matter expert and the DOE KPI Owner. This section also includes any other comments about the metric.

ANALYSIS AND ACTION SECTION

For most KPI owners developing the Analysis and Action section proves to be the most challenging; however, it is the widely read section of any metric by site management. KPI owners must analyze the performance measured by the metric and determine appropriate actions to maintain or improve a particular rating.

Below are examples of well-written Analysis/Actions sections as well as some that need improvement. These are provided only as examples to assist KPI owners in developing their Analysis/Action sections.

CORRECT		INCORRECT
<p>Safety</p> <p>YELLOW. Analysis: Before the safety incidents in this month, the site was approaching the established goals for the year. The underlying cause for these accidents was inattention to detail. All could have been avoided if the employees had been paying attention and were not distracted. Action: Using the site's Lessons Learned program, information from these four incidents will be communicated to all site employees. Since the previous injury rate indicated that the Behavior Based Safety process was having a positive impact on the site's overall safety performance, each site department and section will have additional BBS training during the monthly safety meeting. Management will also continue to discuss safety and inattention to detail during its weekly staff meetings.</p> <p>Environment</p> <p>GREEN. Analysis: The site's Environmental Policy, Programs, Procedures, and Personnel are key elements of our effective Environmental Management System (EMS). The EMS has actively involved facilities in the development of the program; the site's conduct of operations mentality makes following procedures paramount in importance, particularly where potential environmental protection is concerned. The results have been no Notices of Violation from state or federal regulators during this fiscal year. The performance is considered Green this month as a self-assessment found a potential violation that was corrected immediately. Action: We will emphasize prevention of questionable environmental practices as a training maxim and have several layers of self-assessment and self-evaluation built into our system that help to focus everyone on prevention of problems and identification of continuous improvement opportunities. SRS has developed a reputation for self-reporting of environmental issues that has given the site a great working relationship with the regulators.</p>	<p>Safety</p> <p>YELLOW. Analysis: This performance indicator demonstrates the cyclic nature of the program. Action: The site continues to monitor this effort.</p>	<p>Environment</p> <p>GREEN. Analysis: Program continues as before. Action: No action needed.</p>

CORRECT	INCORRECT
<p>Performance Based Incentive (PBI) Completion</p> <p>GREEN. - Analysis: Fee for completed work continues to be lower than projected. Reduced completions were anticipated for four primary reasons: 1) Facility delays have been encountered due to flow sheet/equipment problems. In addition, completed cans contain less material/can than forecasted. 2) The completion of revised Authorization Basis documents has been delayed. 3) The XXX Division is proposing revisions one PBI (milestones and related fee); therefore, no invoices have been submitted for one of its PBIs. The revised PBI should be approved by this month, then invoices will be submitted. 4) YYY Division is re-evaluating costs and schedules related to the XXX Project; therefore, invoicing is on hold for their PBI activities. Actions: Work is on-going to resolve the issues above and bring them back on schedule. Continued emphasis is being placed on meeting commitment milestones. Divisions are actively looking for "work-arounds" to offset potential delays in other areas and for ways to accelerate milestones from FY03 into FY02. An example – ZZZ Division has determined a way to bring \$2.5M forward by accelerating work for the AAA PBI.</p>	<p>PBI Completion</p> <p>GREEN. Analysis: Fee for completed work continues to be lower than projected. Action: Divisions are being encouraged to accelerate work and milestones.</p>
<p>On Time Payments</p> <p>GREEN. Analysis: The chart shows that when increased management and staff emphasis has been put on approving invoices for PBIs, prompt turn around for issuing PBI invoices have improved. When management emphasis has waned, approval times have increased. Before last month a laborious manual approval system was in place. Last month, the site's online PBI approval process was implemented, which significantly improved the approval cycle. SRS personnel have begun to pay attention to the system reminders. Further improvement in turn around time is anticipated. Actions: During next month, Vice Presidents' will communicate with their DOE counterparts on a more frequent basis. This is expected to produce a dramatic improvement. This emphasis will continue until the use of the system becomes routine.</p>	<p>On Time Payments</p> <p>GREEN. Analysis: The manual process for approving PBIs seems to be slowing down payments for PBIs. Action: An online PBI approval process will be tried to improve the timing of payment for PBIs.</p>

CORRECT	INCORRECT
<p>On Time Invoicing GREEN - Analysis: During last the last fiscal year, the site's on-time invoicing for PBIs was in the marginal to satisfactory realm. With the introduction of the electronic invoicing system, on-time submittals rapidly improved as divisions began to use the new system. On-time submittals are now the norm - average for this month was 3.9 days between completion of the invoicing and submittal. In general, minor delays still occur when records must be tabulated and verified at month end. The major delay from last month, with respect to XXX PBI, was resolved and an invoice was submitted. Action: Staff and management attention to on time submittals remains high. Divisions are being encouraged to prepare invoices before actual completion and then submitting the invoice as soon as documentation is complete.</p>	<p>On Time Invoicing GREEN - The divisions continue to do a very good job of compiling their data and submitting invoices on a timely basis. In general, minor delays occur when records must be tabulated and verified at month end. Invoicing for PBI YYY activities has been delayed (not counted on this chart) because of a revision to the PBI YYY, which is currently being reviewed by DOE.</p>

CALCULATING SUMMARY SHEETS

To summarize the metrics, each key performance indicator (KPI) is assigned a value based on the color of the performance for the month and/or quarter as shown below.

Blue	3 points
Green	2 points
Yellow	1 point
Red	0 points

To determine the value for a summary, the values for the individual metrics are added. (SRS KPIs are equally weighted at this time. A more sophisticated differential weighting may be added later.) For example, if a summary has 4 metrics with color values of blue (3 points), green (2 points), green (2 points) and green (2 points), the total for that summary is 9 points (3+2+2+2=9). Using the table below, since there are 4 metrics and the total 9 points, the value for the summary is green.

Values	# of applicable KPIs to be evaluated						
	2	3	4	5	6	7	8
Blue	≥ 6	≥ 8	↓ ≥ 10	≥ 13	≥ 15	≥ 18	≥ 20
Green	← ≥ 4	← ≥ 5	↓ ≥ 7	≥ 9	≥ 11	≥ 12	≥ 14
Yellow	≥ 2	≥ 3	≥ 5	≥ 7	≥ 9	≥ 10	≥ 12
Red	< 2	< 3	< 5	< 7	< 9	< 10	< 12

COLOR VALUES AND DEFINITIONS

The colors used for performance metrics and their definitions are shown below.

Blue

Exceptional program, innovative process, or superlative performance; significantly exceeds expectations.

Green

Effective performance which meets or exceeds requirements and expectations; therefore, only a maintenance level of management attention or resources is needed.

Yellow

Yellow can be used to denote either of two conditions:

- Borderline or declining performance, which needs increased management attention and resources to achieve desired performance or to reverse a negative trend.
- Acceptable performance that relies on a set of conditions which could change quickly to send performance into the “Red” category. For example, if events such as the loss of a key manager; the denial of a request for an exemption; or a policy change on the part of a regulator would quickly move performance from acceptable to unacceptable, “Yellow” would be the appropriate designation.

Red

Degraded or adverse performance, warranting significant level of management attention, resources, and improvement.

White

Insufficient data or not applicable.

DOE/CONTRACTOR INVOLVEMENT

Before beginning a performance metric system such as the one discussed in this manual, both DOE and WSRC worked together to develop a list of performance metrics. SRS found that senior management involvement is imperative to ensure that the site is measuring the “right” performance areas.

SRS’s list of KPIs is an evolving process with input from management and subject matter experts. This manual includes the list currently being used at SRS and a generic list, proposed by Washington Government Group (now Washington Energy and Environment). In addition, the EFCOG Data Dictionary has been provided. This data dictionary includes the types of metrics that the Assistant Secretary of Environment and Health will use during quarterly reviews with DOE-HQ senior management. These can be used to develop a site’s performance metrics.

However, most sites probably already have performance metrics. Existing metrics are recommended as a starting point since site personnel are already familiar with these metrics. These are probably the items that management considers most important for tracking.

Once the list of metrics was determined, both DOE and WSRC worked together to

determine the definition of each metric. What information should be measured? How should it be measured? Are we measuring the ‘right’ information?

Next, DOE and WSRC developed the goal and scoring levels for blue, green, yellow, and red for each metric. Where should the “bar” be? Consideration was given for existing site resources and the current level of performance.

The most important section of a KPI is the Analysis/Action section. After WSRC provides the metric to DOE-SR each month, DOE reviews it to determine if WSRC understands the data and the level of performance. This analysis section should explain why the site’s performance is where it is. Furthermore, the action section should provide activities and steps WSRC is planning to take to either improve or sustain performance. DOE-SR reviews this section to determine if WSRC is responding appropriately.

Having the DOE and WSRC owners’ names and phone numbers in the comment section allows management to know whom to call if there are any specific questions they may have about a particular metric. The owners feel responsible for their particular metric and continually work to improve performance.

SIX SIGMA AND SRS PERFORMANCE METRICS

Overview

Many companies in the United States are now embracing the Six Sigma process improvement tool. Improvements are evaluated based on the sigma level of the process. The sigma level is a business metric used to indicate the performance of a process or service to the customer's specification. WSRC is integrating Six Sigma tools to evaluate of the site's performance metrics.

As such, the Six Sigma tools are being used to statistically evaluate and improve the site processes that directly impact the site's performance metrics. The following discussion provides an overview of Six Sigma and also presents the initial plan for Six Sigma integration with the business metrics that has been developed at SRS.

Six Sigma

The Six Sigma tools are being applied by all types of companies worldwide in order to:

- Improve customer satisfaction;
- Improve profit margins and reduce costs;
- Reduce cycle times; and,
- Gain greater predictability of the results.

The Six Sigma success strategy obtains results by reducing the cost of poor quality (COPQ), using a data-driven approach. The cost of poor quality can be lost contracts, cancelled projects, lost funding, injuries, as well as reviews, inspections, waste, defects, etc. The Six Sigma tools are used to identify the critical drivers/inputs for each process output. Actions and controls are then put in place to improve the overall process outputs (i.e., reduce the number of defects and process variation). By identifying and

controlling these critical drivers/inputs, the COPQ will be reduced.

In order to measure the process capability relative to the customer specification, average performance of the process and variation in the process, a sigma level is calculated for each process. This provides a standard means to compare processes and also provides a solid data-driven foundation from which improvements to each process can be measured. The specific goal of Six Sigma tools is to optimize each process to a sigma level that is cost effective for that specific process.

The bottom line goal is to use Six Sigma tools to manage each process in an effective and efficient manner. This management approach has been successfully applied in both the manufacturing and transactional business worlds. As such, WSRC is using the Six Sigma tools to help drive improvements in both its manufacturing and transactional processes in order to improve the overall site performance.

WSRC Integration Strategy

WSRC is integrating the Six Sigma tools with management and evaluation of the SRS performance metrics. The primary goals for this integration are:

- Improve the ability to predict future site performance;
- Identify the critical actions or processes associated with each metric;
- Identify potential improvements for the critical actions or processes; and,
- Implement controls on the critical actions or processes to ensure improvements are sustained.

In order to meet these goals, the following strategy utilizing Six Sigma tools is being developed and implemented:

1. Prioritize the Level 1 site metrics. This prioritization will be completed in order to begin evaluating the key site metrics. The key site metrics are those metrics that could be improved which would lead to positive impacts relative to the SRS Goals.
2. Evaluate the Level 2 metrics for each Level 1 metric. This evaluation will:
 - a. Determine if the process measured by the metric is in control;
 - b. Identify the customer specification limits;
 - c. Determine the current capability for the process (determining the sigma level);
 - d. Determine if the process is effective (Is the current defect rate acceptable? What is the cost associated with the current defect rate?);
 - e. Determine if the process is efficient (Is the cycle time of the process acceptable? Is the cost to conduct the process acceptable?); and

- f. Establish measurable goals for improvement to each of the Level 2 metrics.

3. Determine critical processes for each Level 2 metric relative to the improvement needs.
4. Identify process improvement projects (yellow belt and black belt efforts) for critical processes.
5. Establish overall scorecard and track process improvements.

Summary

The current SRS site metrics provide a history of past performance and depict current site performance. The Six Sigma tools allow WSRC to predict future performance based on this past history and are being used to improve the overall site performance. This allows WSRC to manage in a proactive manner based on the predicted performance of the metrics. With the integration of Six Sigma tools into the overall SRS business, WSRC is improving the overall site performance while decreasing the overall site costs.

MANAGING METRICS

WSRC found that no one person can be a subject matter expert on all the various metrics; however, a point of contact was needed to collect and manage the various KPIs and sum them in the summary pages (annunciator panels). A person was named to manage the performance metric system. This person has the responsibility to collect the data and individual KPIs, sum them using the algorithm, develop the summary charts, and perform quality assurance on each KPI. This manager issues an Excel spreadsheet template for each KPI and asks each KPI owner and subject matter expert to provide the information required for each KPI.

The individual KPI owner and subject matter expert work with their DOE customer in developing the definitions, goals, and scoring values for each metric. At the beginning of each month, the performance metric manager sends out a reminder by electronic mail to each KPI owner and subject matter expert. KPIs are due the seventh business day of each month to the manager who then collects and reviews them. Quality assurance reviews are performed to ensure that the each KPI is complete, especially the Analysis/Action section.

The metrics are also reviewed to ensure that there is consistency in format for all metrics. Senior management decided early that the

graphs should be similar in appearance. For example, the color bars of the information should be a consistent color. (WSRC chose blue for the color of the first bar and a red and white striped for the second bar.) Care is taken to ensure that KPI graphs are easily read if printed in black and white. The goal is graphed as a line in green. If there is only one y-axis and the KPI scoring permits, a separate color bar is established on the far right, showing the levels for blue, green, yellow, and red so that the reader can quickly establish the scoring color without reading the text. This is simply a series of small color boxes stacked on top of one another.

Once the KPIs are submitted, the performance metric manager summarizes the KPIs by the various focus areas and then the final overall summary sheet. Additional quality assurance review is performed by another individual to ensure that the package is correct. A package with the summary sheets and KPIs is prepared in Adobe Acrobat, which is sent to both DOE-SR and WSRC senior managers and placed on the site's Intranet. Summary pages are posted in or around the DOE-SR and WSRC senior management offices, conference rooms and other administrative areas across the site. A copy is sent to all KPI owners and subject matter experts. This is accomplished by the fifteenth of each month so that the posting is available to the site in a timely manner.

COMMUNICATION

For this performance metric system to be truly effective for the Savannah River Site, communications to all employees is imperative. Newsletter articles, videos, Intranet, employee communications and numerous meetings have been used to describe the system and its impacts.

Before the site metrics were first released, a short news article was placed in the site's newspaper. The next month a more extensive center page spread was used to provide the biggest impact to all employees.

In addition, the DOE-SR point of contact and the WSRC Executive Vice President attended many site, organizations, councils and committees to teach site employees about the new systems. Examples of these include DOE-SR and WSRC Senior Staff meetings, WSRC middle management meetings, first-line supervisors, and WSRC performance metric KPI owners and subject matter experts. Essentially, the same presentation was used in these meetings, ensuring consistent communication across

the site. (See Appendix A for a copy of a generic presentation.) One of these presentations was video taped and placed on the site's Intranet, allowing all SRS employees to learn about the new metric system. Names and phone numbers of points of contact were published in numerous places so that staff members could call with any questions.

When the first set of metrics was issued, the summary sheets were placed on large poster boards and displayed around the site. Most prominently, the posters were placed outside both DOE-SR Manager's and WSRC President's offices. Other locations included various conference rooms and other administrative areas. These posters continue to be updated monthly to reflect the most current set of summary charts.

The entire set of metrics is placed on the site's Intranet each month. To allow for further historical perspective, past month's metrics remain on the site's Intranet.

LIST OF CURRENT SRS PERFORMANCE METRICS

To manage and find the key performance indicators, a numbering system, similar to an outline, is used. Under this system, each DOE Focus Area is numbered, using Roman numerals. Safety and Security is I, Technical Capability and Performance is II, Community, State, and Regulator Relationships is III, etc. For the next level, Level 1, an alphabetic numbering system is used. Under Safety and Security, Industrial Safety and Health is A, Emergency Services and Fire Protection is B, Radiation Safety is C, Nuclear Safety is D, and Physical Security is E. The next level, Level 2, which for SRS is mainly individual KPIs, a number is assigned. For example, under Industrial Safety and Health, Total Recordable Case Rate is 1, Days Away, Restricted or Transferred Rate is 2, and Cost Index is 3. This numbering system is used by naming each file in Excel and is the page number in the set of charts. Doing this makes it easier to find a particular KPI, Level 1, or Focus Area either in the set of printed metrics or on a computer. For example, Total Recordable Case Rate is I-A-1, Days Away, Restricted or Transferred is I-A-2, and Cost Index is I-A-3.

SRS FOCUS AREAS	Level 1	Level 2
		Diversity
I. Safety and Security	A. Industrial Safety and Health	1. TRC Rate
		2. DART Rate
		3. Cost Index
	B. Emergency Services and Fire Protection	1. Fire Protection Impairment Status
		2. Emergency Exercises and Drills Conducted Versus Scheduled
	C. Radiation Safety	1. Reportable Contamination Events
	D. Nuclear Safety	1. Nuclear Safety Issue Management Index
		2. Significant Nuclear Safety Incidents Index
	E. Physical Security	1. Security Incidents
	II. Technical Capability and Performance	A. Production
2. Tritium Loading and Finishing Lead Time		
3. DWPF Canister Performance		
B. Infrastructure		1. Delinquent Predictive Maintenance
		2. CM backlog in man-hours
C. Disciplined Operations		1. Conduct of Operations
		2. Pollution Prevention and Waste Reduction
		3. Packaging and Transportation
D. Engineering		1. Design Engineering Changes
		2. Engineers Participating in IDEAS
		3. Engineering Productivity
E. Project Management		1. Project Management- Schedule
		2. Project Management -Cost
		3. Project Management Health

SRS FOCUS AREAS	Level 1	Level 2	
III. Community State and Regulator Relationships	A. Environmental Compliance Index	1. Enforceable Agreement Milestones-FFA 2. Environmental Enforcement Actions (NOVs)	
	B. Public Participation Program	1. CAB Responsiveness 2. DOE Response Commitments to CAB	
	C. Public Perception	1. Tours/Visitors' Program Effectiveness 2. Low Country Plan Implementation	
	D. Employee Relations	1. Number of Opened Employee Concerns per 100 Employees	
		2. Average Number of Days to Closure of Employee Concerns	
	IV. Cost Effectiveness	A. Financial Forecasts	1. Cumulative Budget Cost Performance for DP
			2. Cumulative Budget Cost Performance for EW02
			3. Cumulative Budget Cost Performance for EW04
4. Comparison of Actual Overtime Cost to Budget			
B. PBI Performance		1. PBIs Completed	
C. Financial Performance		1. On time Payments (for PBIs)	
		2. On time Invoicing (for PBIs)	
		3. Cost Savings Performance	
		4. Employees Cost Effectiveness Performance	
D. Feedback and Improvement		1. Nonconformance Report Processing Status	
	2. Problem Identification Report Status		
V. Corporate Perspective: How is SRS helping DOE Complex?	A. Nuclear Non-Proliferation	1. Plutonium Disposition Schedule Performance	
		2. Plutonium Disposition Cost Performance	
		3. Highly Enriched Uranium Program	
	B. High Level Waste Risk Reduction	1. Liquid High Level Waste in Inventory Eliminated	
		2. High Level Waste Tanks Eliminated	
	C. Nuclear Materials Risk Reduction	1. Plutonium Metals/Oxides Stabilization	
		2. Enriched Uranium (Low Enriched Uranium Blenddown)	
		3. Plutonium Residues	
		4. Depleted Uranium	
		5. Spent Nuclear Fuel	
	D. Solid Waste Risk Reduction	1. Transuranic Drums Shipped to the Waste Isolation Pilot Plant	
		2. Low Level and Low Level Mixed Waste	
	E. Facility Completions	1. Nuclear Facilities	
		2. Radioactive Facilities	
		3. Industrial Facilities	

DEFINITIONS, GOALS AND CONTACTS FOR SRS PERFORMANCE METRICS

The following section provides a brief definition and goal of each KPI used at SRS. In the Goal section, the color scoring is included. In addition, SRS subject matter owners and experts and their phone numbers are provided to encourage exchanges of ideas.

Level 2	Definition	Goal and Scoring	Owner
Diversity	This indicator demonstrates the site's ability to hire a diverse workforce that meets or exceed the hiring of the previous calendar year. The assessment evaluates the actual hiring of minorities and females as compared to the current workforce.	Blue = >22 Green = >20 but <21.9 Yellow = >18 but <19.9 Red = <17.9	WSRC Ted Myers (803-735-4691); Willie Bell (803-725-4207)
I-A-1. TRC Rate 2. DART Rate	The Occupational Safety and Health Act of 1970 requires covered employees to prepare and maintain records of occupational injuries and illnesses. WSRC measures safety performance in accordance with these guidelines. The incidence rates are calculated by multiplying the number of injuries, illnesses or lost workdays by 200,000 and dividing by the total number of work hours.	TRC Rate Goal = 0.93 DART Goal: = 0.30 Cost Index Goal = 3.00 Blue = ≥ 5% below the goal Green = 0-4% below the goal Yellow = 0-4% above the goal Red = ≥ 5% above the goal	WSRC Kevin Smith (803-952-9924) and Linda Blackston (803-952-9905) DOE Yvonne Gentry (803-952-7153) and Sherry Norton (803-952-7226)
I-A-3. Cost Index	The Cost Index is a tool that measures the severity of the recordable injuries experienced. It is weighted to place an increased burden on injuries involving days away, days restricted, and permanent transfers.		
I-B-1. Fire Protection Impairment Status	This indicator depicts the percent availability of fire protection systems. Tracked System Availability counts as unavailable only those systems which have unplanned impairments (i.e., mechanical malfunction) or have exceeded their planned duration.	The goal is to maintain tracked fire protection system availability above 98%. Blue is > 98% of fire protection systems available, Green is ≥96% and <98% of fire protection systems available, Yellow is ≥90% and <96% of fire protection systems available and Red is <90% of fire protection systems available.	WSRC Terri Bolton (803-725-5173) Richard Lewis (803-725-5211) DOE Dave Boyll (803-952-8000)

Level 2	Definition	Goal and Scoring	Owner
I-B-2. Emergency Exercises and Drills Conducted Versus Scheduled	This indicator depicts the number of exercises and drills scheduled each month versus the number actually conducted.	Blue = > 90% of scheduled drills conducted Green = 70-90% of scheduled drills conducted Yellow = 60-70% of scheduled drills conducted Red = <60% of scheduled drills conducted	WSRC Chris Baker (803-725-5096) Lynda Blystone (803-725-2373) DOE Randy Clendenning (803-952-6302)
I-C-1. Reportable Contamination Events	This chart reflects the number of personnel contamination events per month.	Blue: ≤ 1 contamination events Green > 1 and ≤ 3 contamination events Yellow: >3 and ≤5 contamination events Red: >5 contamination events	WSRC Jim Stafford (803-952-9888) Athena Freeman (803-952-9938) DOE Brenda Mills (803-952-8125)
I-D-1. Nuclear Safety Issue Management Index	The Nuclear Safety Information Management Index measures the number of unresolved safety issues (NIs and PISAs) over the previous three month compared to last 12-month period. Average time and weighted mean time of open reports factor into the measurement formula. PISA closure status (for metrics purposes only) is based on FOSC approval of associated USQE. (Additional details can be found in Appendix B.)	The goal for the Nuclear Safety Information Management Index is to have a Composite Score of less than 1 during the quarter. Blue is less than 1, Green is 1, Yellow is 2 and Red is 3. NOTE: The Goal and definition of colors are arbitrary. After accumulation and analysis of several month's data, values will be modified in consultation with DOE-SR.	WSRC George Clare (803-952-7222) Andrew Vincent (803-952-7209) DOE Mark Smith (803-952-9612)
I-D-2. Significant Nuclear Safety Incidents Index	This metric reviews and grades relevant Unusual Occurrences (UOs), Off Normals (ONs) and other events related to Nuclear Safety listed in SIRIM under Facility Condition-01 and 10C for a rolling 3 month period. Only data from Significance Categories 1 and 2 are included in this metric. UOs relating to most serious incidents, such as For Cause Shutdowns, OSR/TSR violations and Criticality Limit Challenges are graded more severely in the formula. (Additional details can be found in Appendix B.)	This metric reviews and grades relevant Unusual Occurrences (UOs), Off Normals (ONs) and other events related to Nuclear Safety listed in SIRIM under Facility Condition-01 and 10C for a rolling 3 month period. Only data from Significance Categories 1 and 2 are included in this metric. UOs relating to most serious incidents, such as For Cause Shutdowns, OSR/TSR violations and Criticality Limit Challenges are graded more severely in the formula.	

Level 2	Definition	Goal and Scoring	Owner
I-E-1. Security Incidents	The incidence rate for this metric is calculated in the same manner as the site's safety incidence rate. It is obtained by multiplying the number of reportable incidents (Ref: 7Q-213) by 200,000 and dividing by the total number of work hours.	1/8 Hour: .29 Total Recordable: .58 Blue >5% below the goal Green 0-4% below the goal Yellow 0-4% above the goal Red >5% above the goal	WSRC Chris Baker (803-725-5096) SME Lynda Blystone (803-725-2373) DOE Kevin Hall (803-725-3297)
II-A-1. Environmental Release Sites Completions	This metric measures progress in beginning and completing sites against its commitment to aggressively remediate inactive waste sites. Specific annual goals are reported to Congress, and a plan to accomplish these pre-established numbers is reviewed on a monthly basis. The goal established for FY03 is 13 Site Completions.	Blue = 2 or more > Goal Green = Goal \pm 1 Yellow = 2 or more < Goal Red = 3 or more < Goal	WSRC Dean Hoffman (803-952-6837) SME Cathy Madore (803-952-6656) DOE Jim DeMass (803-725-7238)
II-A-2. Tritium Loading and Finishing Lead Time	This indicator shows Defense Program's progress toward meeting monthly DOE shipping requirements.	The goal is to ensure reservoirs are ready to meet shipping requirements. Average Loading Lead Time Goals: Blue (>60 days), Green (>45 days), Yellow (>30 days) and Red (Less than 30 days). Average Finishing Lead Time Goals: Blue (>30 days), Green (>20 days), Yellow (>15 days) and Red (Less than 15 days).	WSRC Cheryl Cabbil (803-208-1234) Jim Dollar (803-208-1313) DOE Wayne Richardson (803-208-1195)
II-A-3. Defense Waste Processing Facility Canister Performance	This indicator depicts the schedule goal of canisters to pour each month vs. the number of canisters actually poured at the Defense Waste Processing Facility. It also depicts the actual canisters poured to date from the beginning of the contract period vs. the contract goal to date. Assumptions: 24 hours to pour a canister and a 75% melter availability.	Produce an average of 20 Canisters per month to achieve a contract total of 1150 canisters by the end of FY05; end loading melter replacement outage time. Color grading will be based on production actuals below the goal. Blue: equal to or greater than Contract Goal and Monthly Goal. Green: Equal to or greater than Contract Goal and up to 2 behind Monthly Goal. Yellow: Below Contract Goal and up to 2 behind Monthly Goal. Red: Equal to or greater than 40 behind Contract Goal or greater than 2 behind Monthly Goal.	WSRC Jeff Barnes (803-208-6060) Ray Haynes (803-208-6142) DOE Bill Pearson (803-208-1075)

Level 2	Definition	Goal and Scoring	Owner
II-B-1. Delinquent Predictive Maintenance	<p>This metric measures the total number of Site Delinquent Preventive Maintenance (PM) work orders - these PMs are not field work complete, and have exceeded their scheduled date and any allowable grace period. This new goal was established in October 2002.</p>	<p>The goal of < 35 Delinquent PMs has been based on previous FY average of 117 along with considering the positive reduction trend during that same period. Blue = < 35 Green = 35-46 Yellow = 47-70 Red = > 70</p>	<p>WSRC Chuck Campbell (803-725-2726) Rick Fleming (803-725-1460) DOE Richard Rustad (803-952-7430)</p>
II-B-2. CM backlog in man-hours	<p>This metric measures the Total Corrective Maintenance (CM) backlog in man-hours. The indicator measures only Corrective Maintenance. Other work such as Preventive Maintenance, Modifications, etc. is not included in this KPI. This new goal was established in October 2002.</p>	<p>The goal is to maintain a CM Backlog in man-hours relative to a 12-month average of 76,158 hours. A monthly index scoring is applied as follows: Red (0 points) = >114,237 (Poor) Yellow (0 points) = 99,005 – 114,237 (Marginal) Green (2 points) = 83,773 – 99,005 (Good) Blue (3 points) = 6,158 – 83,73 (Excellent) Green (2 points) = 57,118 – 76,158 (Good) Yellow (1 point) = 45,694 – 57,118 (Marginal) Red (0 points) = <45,694 (Poor)</p>	
II-C-1. Conduct of Operations	<p>This indicator is composed of the normalized statewide monthly total of ORPS/SIRIM reportable occurrences in 16 selected Nature of Occurrence categories as defined in DOE M 232.1-1A, which are deemed to be of CONOP's significance. The value is derived by dividing the number of SIRIM recordables by headcount, which is normalized for 200,000 work hours.</p>	<p>The goal is a statewide normalized cumulative value per month of 4.5. Blue is <4.5, Green is 4.6 - 5.5, Yellow is 5.6 - 6.0, and Red > 6.0</p>	<p>WSRC Steve Johnson (803-952-9886) Joy Price (803-952-9657) DOE Jeff Crenshaw (803-952-8114)</p>

Level 2	Definition	Goal and Scoring	Owner
II-C-2. Pollution Prevention and Waste Reduction	This indicator depicts WSRC's progress toward meeting a 20% reduction in newly generated radioactive and hazardous solid waste volumes based on DOE-SR approved waste forecast. The objective is to implement changes to decrease the amount of waste generated, thereby reducing current and future operating cost and environmental and personnel risks.	This indicator depicts WSRC's progress toward meeting a 20% reduction in newly generated radioactive and hazardous solid waste volumes based on DOE-SR approved waste forecast. The objective is to implement changes to decrease the amount of waste generated, thereby reducing current and future operating cost and environmental and personnel risks.	WSRC Luke Reid (7-6309) Tim Coffield (7-6316) DOE Stephen Mackmull (803-725-3817)
II-C-3. Packaging and Transportation	This metric reflects the performance of the packaging and transportation program at SRS. It includes all offsite shipments of hazardous and radioactive material and waste, as well as onsite transfers of radioactive material and waste, hazardous waste, and samples. A weighted severity index is applied to transportation incidents, and the metric is normalized to account for the total number of transfers and shipments.	The SPTPM monthly goal is 99% Blue- 99-100%; Green- 97-99%, Yellow- 95-97%; Red- <95%.	WSRC Ken Stephens (803-952-8358) Mike Hughes (803-952-8697)
II-D-1. Design Engineering Changes	The purpose of this metric is to measure design changes caused by design errors. This is accomplished by tracking the fraction of design changes required because an error was made by engineering in providing requirements or in performing the design. The value charted will be the design changes not caused by design error. This metric will provide SRS with an indication the quality of engineering design. However, this metric is being re-evaluated, using Six Sigma tools and may change.	The goal is based showing improvement over historical performance. Blue - 95% or higher; Green is 85-94%; Yellow is 75-84%, and Red --< 75%	WSRC George Clare (803-952-7222) Anthony Giordano (803-952-9736) DOE Fred Schultz (803-952-9560)

Level 2	Definition	Goal and Scoring	Owner
<p>II-D-2. Engineers Participating in IDEAS</p>	<p>The purpose of this metric is to measure participation by engineers in improvements to products and processes through the employee involvement program. This is accomplished by tracking submittals by engineers to the IDEAS program. This metric will provide SRS with an indicator as to the degree to which engineers are initiating recommendations for product/process improvements. However, this metric is being re-evaluated, using Six Sigma tools and may change.</p>	<p>The monthly goal (40) is derived from an annual goal of 475 IDEAS submittals (averaging .3 submittal per engineer). Blue -- 90% of goal, Green is 80-89% of goal, Yellow is 70-79% of goal, and Red is < 70% of goal.</p>	<p>WSRC George Clare (803-952-7222) Brenda Kelly (803-725-0676) DOE Fred Schultz (803-952-9560)</p>
<p>II-D-3. Engineering Productivity</p>	<p>The purpose of this metric is track engineering productivity by combining specific Division measurements, normalize for the goal of 1.00, and weighting each measure by the ratio of Division Engineering organization population to the Site Engineering organization population. Each Division metric is linked to deliverables, commitment fulfillment, or equipment availability. As an example, HLW measures commitment fulfillment whereas P&CT measures computer system availability. However, this metric is being re-evaluated, using Six Sigma tools and may change.</p>	<p>The goal is to maintain a normalized ratio for the composite measure and the individual Division measures each month. The scoring criteria is: Blue is 0.90 or better, Green is 0.8 to 0.89, Yellow is 0.70 - 0.79, Red is < 0.70.</p>	<p>WSRC George Clare (803-952-7222) Tom Monahan (803-952-7182) DOE Fred Schultz (803-952-9560)</p>

Level 2	Definition	Goal and Scoring	Owner
<p>II-E-1. Project Management-Schedule</p> <p>II-E-2. Project Management – Cost</p> <p>II-E-3. Project Management Health</p>	<p>Applies to all active projects (i.e., Line Item, General Plant, Capital Equipment and Cost funded). The indicators are officially measured quarterly. Prior to the beginning of each quarter within each focus area, attributes and initiatives are developed and weighted relative to customers' expectations jointly by WSRC & DOE-SR for each project. Performance against these attributes and initiatives are scored jointly by WSRC & DOE-SR at the end of quarter. For the months in between, an internal assessment and score will be generated based upon monthly review meetings with DOE-SR. This KPI includes an assessment of monthly project Forecast At Completion (FAC) as part of the cost metric. However, these metrics are being re-evaluated and may change.</p>	<p>Goal is to achieve 95 or greater score for schedule, cost, technical and health. Blue is "Excellent" (95 to 100); Green is "Very Good" (85-94); Yellow is "Good" (75-84); Red is "Poor" (score less than 75).</p>	<p>WSRC Bill Elkins (803-952-7253) Jon Lunn (803-952-3339) DOE John Phillips (803-952-8403)</p>
<p>III-A-1. Enforceable Agreement Milestones-FFA</p>	<p>This metric measures the Environmental Restoration Program's progress in completing regulatory milestone deliverables. These deliverables are contained in the Federal Facility Agreement and the RCRA permit. Milestones are negotiated annually with Environmental Protection Agency (EPA) and South Carolina Department of Health and Environmental Control (SCDHEC) and are modified in accordance with the Federal Facility Agreement.</p>	<p>Blue (Outstanding): < 2 Missed Milestones + significant high value negotiated regulatory outcomes; Green (Good): Milestone submittals on schedule + normal regulatory interface; Yellow (Marginal): Milestone submittals on schedule + lessening regulatory interface; Red (Poor): > 2 missed milestones</p>	<p>WSRC Dean Hoffman (803-952-6837) Cathy Madore (803-952-6656) DOE Jim DeMass (803-725-7238)</p>

Level 2	Definition	Goal and Scoring	Owner
III-A-2. Environmental Enforcement Actions (NOVs)	This indicator depicts the number of Notices of Violation (NOVs) and fines issued to WSRC by SCDHEC and/or EPA. Total NOVs/Fines paid are weighted and have been re-scaled to reflect current practices for SCDHEC issuance of NOVs. NOV without fine = 0.5 point, NOV with fine <\$10K = 1 point, NOV with fine between \$10-50K = 3 points, NOV with fine >\$50K = 6 points. The scale for scoring has been modified to reflect this different weighting scheme.	The goal is 3 or less points. Scoring Green < 6 points, Yellow = 7 - 9 points, Red > 9 points.	WSRC Patricia Allen (803-725-1728) David Lester (803-725-2904) DOE Gary Hoover (803-725-3968)
III-B-1. CAB Responsiveness	This metric depicts responsiveness to SRS Citizens Advisory Board recommendations by the Department of Energy.	The goal is for DOE-SR to respond to CAB recommendations within 10 days from receipt. Blue is all responses in less than 5 days. Green is if any responses are in 6-10 days. Yellow is a response from 11-20 days. Red is if any response is more than 20 days from the date of receipt.	WSRC Teresa Haas (803-725-4643) Dawn Haygood (803-725-9668) DOE Gerri Flemming (803-725-6374)
III-B-2. DOE Response Commitments to CAB recommendations	This metric is designed to demonstrate WSRC's performance in assisting DOE in meeting milestone commitments made to the SRS CAB in responses to Board recommendations. This tool will focus management attention to ensure that Overdue and Not Completed milestones receive the required level of attention through completion. Due date is the original target date identified in the response to recommendation.	The goal is to ensure DOE commitments to the SRS CAB are provided on or before the due date. Blue = 90-100% complete, Green-75-89% complete, Yellow = 50-74% complete and Red =<50% complete.	WSRC Teresa Haas (803-725-4643) Dawn Haygood (803-725-9668) DOE Gerri Flemming (803-725-6374)

Level 2	Definition	Goal and Scoring	Owner
III-C-1. Tours/Visitors' Program Effectiveness	SRS Tours are offered to the public to educate them on site activities/capabilities. A survey is given to each tour group of 5 or more touring SRS that contains the following questions: "Before the tour today, how did you feel about SRS?" "How do you feel about SRS now that your tour is complete?"	Blue = > 3.75 Green = ≥3.5 and <3.75 Yellow - ≥ 3.0 and < 3.5 Red = < 3.0	WSRC Teresa Haas (803-725-4643) Laurie Posey (803-725-5505) DOE Becky Craft (803-725-3267)
III-C-2. Low Country Plan Implementation	This metric is designed to demonstrate WSRC's performance in meeting the milestone commitments as identified per WSRC 2002 Low Country Outreach Strategy and Plan. This tool will focus management attention to ensure that overdue and not completed milestones receive the required level of attention through completion. The formula is YTD Completed divided by YTD plus Milestones Overdue. Due date is either the original target date identified in the plan or the revised date that has been approved via an informal change control process with our DOE-SR Customer.	Blue - >100% Green - 91-100% Yellow - 81-90% Red - <80%	WSRC Lessie Price (803-502-9983) Phil Mottel (803-502-9984) DOE D'Lisa Bratcher (803-725-5351)
III-D-1. Number of Opened Employee Concerns per 100 Employees	This indicator reflects the number of concerns per 100 employees, or the equivalent of 1 concern per 100 employees. The information provides a common denominator by which WSRC can identify adverse trends. WSRC can use this data, internally and externally, for benchmarking with other organizations.	Goal: Maintain concerns per 100 employees at a factor of less than .50. Blue is defined as < .50; Green is > .50 and < .75; Yellow is >.75 and < 1.00; and Red is > 1.00.	WSRC Mal Collins (803-952-9519) Larry Adkinson (803-725-1951) DOE Diane Saylor (803-725-3745)

Level 2	Definition	Goal and Scoring	Owner
III-D-2. Average Number of Days to Closure of Employee Concerns	This indicator reflects the average number of days required to internally resolve employee issues through the WSRC Employee Concerns Program. Timely resolution is directly related to the nature of the concern and depth of investigation required. Thoroughness and accuracy of the investigation are often related to customer satisfaction, which is important to our employees, customers, and Board members and is also an important factor of risk management. However, it is cautioned that the time factor is but one element of quality and should not be over emphasized.	Goal: Resolve issues expeditiously such that the average days to closure remains less than 45 days. (This metric may vary widely and have less validity when small numbers of concerns are being reported.) Blue is defined as < 45 days; Green is defined as 45-60 days; Yellow is defined as 61 to 90 days; and Red is defined as > 90 days.	WSRC Mal Collins (803-952-9519) Larry Adkinson (803-725-1951) DOE Diane Saylor (803-725-3745)
IV-A-1. Cumulative Budget Cost Performance for DP	This indicator shows DP fiscal year to date operating, capital equipment, and general plant project expenditures shown as compared to budget. Line items are excluded.	The goal for this metric is for actual expenditures be close to budgeted expenditures. Blue is where the performance is > 95% and < 100%, Green is 85-95% or 100-102%, Yellow is 80-85% and 102-105%, and Red is < 80% and > 105%.	WSRC Dan Becker (803-725-8444) Susan Crosby (803-725-7668) DOE Dawn Hooks (803-725-5606)
IV-A-2. Cumulative Budget Cost Performance for EW02	This indicator shows EW02 fiscal year to date operating, capital equipment, and general plant project expenditures shown as compared to budget. Line items are excluded.	The goal for this metric is for actual expenditures be close to budgeted expenditures. Blue is where the performance is > 95% and < 100%, Green is 85-95% or 100-102%, Yellow is 80-85% and 102-105%, and Red is < 80% and > 105%.	WSRC Dan Becker (803-725-8444) Susan Crosby (803-725-7668) DOE Carol Martin (803-725-7400)
IV-A-3. Cumulative Budget Cost Performance for EW04	This indicator shows EW04 fiscal year to date operating, capital equipment, and general plant project expenditures shown as compared to budget. Line items are excluded.	The goal for this metric is for actual expenditures be close to budgeted expenditures. Blue is where the performance is > 95% and < 100%, Green is 85-95% or 100-102%, Yellow is 80-85% and 102-105%, and Red is < 80% and > 105%.	WSRC Dan Becker (803-725-8444) Susan Crosby (803-725-7668) DOE Alejandro Baez (803-725-8926)
IV-A-4. Comparison of Actual Overtime Cost to Budget	This metric compares FYTD overtime actuals as a % of overtime budget.	The goal for this metric is for actual overtime is to be less than or equal to 102% of budget. Blue is where the actual is equal to or <102% Green is 103-106%, Yellow is 107-110%, and Red is > 110%.	WSRC Dan Becker (803-725-8444) Paula Hardin (803-725-1767) DOE Tom Fekete (803-725-5779)

Level 2	Definition	Goal and Scoring	Owner
IV-B-1. PBIs Completed	<p>This indicator reflects contract performance success as indicated by fee from the WSRC/Division PBI milestones completed. The percentage shown is the milestones completed versus the projected completions. Total fee invoiced (within 5 days of month end) is shown as the measurement. Adjustments have been/are made for WSRC/DOE approved baseline changes.</p>	<p>The ranges utilized reflect the higher expectations of WSRC and are in excess of those required in the Contract. Blue = $\geq 95\%$ Green = $<95\%$ and $\geq 85\%$ Yellow = $<85\%$ and $\geq 75\%$ Red = $<75\%$</p>	<p>WSRC Clay Jones (803-725-4409) Phil Croll (803-725-3158) DOE Tom Reynolds</p>
IV-C-1. On time Payments	<p>This indicator reflects actual monthly invoices submitted as a percentage of approvals from DOE within 10 days time frame.</p>	<p>The goal is to maintain an on time ratio of greater than 90% of invoiced available fee. Success is measured as follows: Blue = $> 90\%$ Green = $< 90\%$ and $> 80\%$ Yellow = $< 80\%$ and $> 75\%$ Red = $< 75\%$</p>	<p>WSRC Dan Becker (803-725-8444) Anthony Grant (803-952-8803) DOE Jack Taylor (803-725-5599)</p>
IV-C-2. On time Invoicing	<p>This indicator reflects milestones completed versus milestones invoiced (within five working days). The measure is the fee associated with the milestones.</p>	<p>The goal is to maintain an on-time (within five working days of completion) invoicing ratio of greater than 90% for all PBI milestones/ objectives completed. Success is measured as follows: Blue = $\geq 95\%$ Green = $<95\%$ and $\geq 85\%$ Yellow = $< 85\%$ and $\geq 75\%$ Red = $<75\%$</p>	<p>WSRC Clay Jones (803-725-4409) Phil Croll (803-725-3158) DOE: Not Applicable</p>

Level 2	Definition	Goal and Scoring	Owner
IV-C-3. Cost Savings Performance (PACE)	<p>This indicator depicts the site's progress toward achievement of the Productivity and Cost Effectiveness (PACE) goal. Monthly "Goal" indicates the cumulative savings needed by the end of each month to ensure that the site is on track to meet the total goal by fiscal year end. The actual savings to date vs. the monthly goal equals the cost savings performance, which determines the score color. "Minimum Acceptable" target represents the cost reduction necessary to meet commitments in the FY '03 Annual Operating Plan. "Projected" represents the expected cumulative savings based on projected closure dates and projected savings.</p>	<p>The FY '03 PACE goal may fluctuate according to the additional funds demand created by emerging scope, or changes in a division program negative management reserve. Blue > 95% of monthly goal. Green > 66.8% and <95% of monthly goal; Yellow > 63.5% and <66.8% of monthly goal, and Red < 63.5% of monthly goal.</p>	<p>WSRC Frank Iwuc (803-725-7199) Mike Tarrant (803-725-0679) DOE: Not Applicable</p>
IV-C-4. Employees Cost Effectiveness Performance (IDEAS)	<p>Graph shows the number of approved Individuals Development Effective Alternative Solutions (IDEAS) needed to accomplish the goal of 150 approved IDEAS per month. Per Employee Involvement Association (EIA) calculations, this equals 16 IDEAS per 100 employees (or .16 IDEAS per employee).</p>	<p>The goal is for have 1800 approved IDEAS for FY03 (based on 16 approved IDEAS per 100 employees or 150 approved IDEAS per month). Blue is > 90% of monthly goal; Green is 80-90% of monthly goal; Yellow is 70-79% of monthly goal, and Red is < 70% of monthly goal.</p>	<p>WSRC Frank Iwuc (803-725-7199) Brenda Kelly (803-725-0676) DOE: Not Applicable</p>
IV-D-1. Nonconformance Report (NCR) Processing Status	<p>NCRs document item deficiencies as required by 10CFR830, SubPart A, "Quality Assurance Requirements". This indicator depicts the nonconformance report (NCR) population in 3 age categories of < 60 days, between 60 and 120 days, and > 120 days old. Suspended NCRs are not included in this metric because they cannot be dispositioned "due to a project cancellation, suspension, extended system shutdown, facility closure or abandonment-in-place." (WSRC IQ, QAP 15-1).</p>	<p>Blue = Population of old NCRs is < 200 Green = Population of old NCRs is >200 but < 250 Yellow = Population of old NCRs is < 250 but > 300 Red = Population of old NCRs is > 300 Note: Old NCRs are defined as those active NCRs > 120 days.</p>	<p>WSRC Joe Yanek (803-952-9893) Sun Hwang (803-952-9926) DOE Bill Rowland (803-952-8202)</p>

Level 2	Definition	Goal and Scoring	Owner
IV-D-2. Problem Identification Report Status	This performance metric evaluates the company's ability to identify problems using the Problem Identification Report (PIR) program and effect corrective actions in the time established by the responsible manager. Both the estimated corrective action completion dates and the responsible manager(s) are identified on the PIR document. The data will take into account significance categories of the PIRs.	Blue: Average PIR corrective actions completed within 5 days of the estimated completion date. Green: Average PIR corrective actions completed between 5 and 10 working days of the estimated completion date. Yellow: Average PIR corrective actions completed between 10 and 15 working days of the estimated completion date. Red: Average PIR corrective actions after 15 working days of the estimated completion date	WSRC Joe Yanek (803-952-9893) Sun Hwang (803-952-9926) DOE Bill Rowland (803-952-8202)
V-A-1. Pu Disposition Schedule Performance	This indicator shows performance against scheduled deliverables for the Pit Disassembly and Conversion Facility (PDCF) and Mox Fuel Fabrication Facility (MFFF) Projects (Operations & Maintenance (O&M) and Design Authority (DA)) as a percentage of deliverables to WGL, DCS, or NNSA made on schedule.	The goal is deliver 85-90% of deliverables on schedule. Blue denotes 95-100% delivered on schedule, Green is 85-94%, Yellow is 80-84% and Red is <80% delivered on time.	WSRC Jimmy Angelos (803-725-8593) Dick Tansky (803-725-5303) DOE Sterling Franks (803-725-6272)
V-A-2. Plutonium Disposition Cost Performance	This indicator shows fiscal year to date Operating Project Cost and Total Estimated Cost expenditures in support of the MFFF, PDCF and PDP Waste Building projects shown as compared to budget.	The goal is for actual expenditures be close to budgeted expenditures. Blue is where the expenditures are between 85 and 100% of budget, Green is 75-84% or 101-103%, Yellow is 70-74% and 104-106%, and Red is < 70% and > 106%.	WSRC Jimmy Angelos (803-725-8593) Dick Tansky (803-725-5303) DOE Sterling Franks (803-725-6272)

Level 2	Definition	Goal and Scoring	Owner
<p>V-A-3. Highly Enriched Uranium (HEU) Program</p>	<p>The cost metric shows the monthly Cost Performance Index (CPI) for the HEU Blend Down Program. The cumulative CPI captures the CPI from inception to-date for the HEU Blend Down Project. The cost performance reflects the information from the HEU Project Monthly Report with the OPEX performance equal to actuals (1.00). The Schedule metric shows the monthly Schedule Performance Index (SPI) for the HEU Blend Down Program. The cumulative SPI captures the SPI from inception to-date for the HEU Blend Down Project. Note: This schedule analysis utilizes the early finish dates.</p>	<p>The goal for this cost metric is for the monthly Budgeted Cost of Work Performed (BCWP) to exceed Actual Cost of Work Performed (ACWP). Blue is where the performance is >1.00. Green is .99-.90, Yellow is .89-.80 and Red is <.79. The goal for this schedule metric is for the monthly Budgeted Cost of Work Performed (BCWP) to exceed the Budgeted Cost of Work Scheduled (BCWS). Blue is where the performance is >1.00. Green is .99-.90, Yellow is .89-.80 and Red is <.79.</p>	<p>WSRC T. N. Butler (803-208-3155) John Hill (803-208-3192) DOE: Sterling Franks (803-725-6272)</p>
<p>V-B-1. Liquid High Level Waste (HLW) in Inventory Eliminated</p>	<p>Liquid Waste in Inventory eliminated (millions of gallons): Radioactive liquid tank waste (and other forms such as sludge and saltcake) volume is counted when the inventory is reduced. This measure refers to waste traditionally called “high-level” waste, such as waste in the 177 tanks at Hanford. The radioactive liquid tanks waste inventory should not reflect any volume changes due to processing.</p>	<p>Blue: equal to or greater than cumulative goal. Green: up to 20% behind cumulative goal. Yellow: between 21% and 40% behind cumulative goal. Red: equal to or greater than 40% behind cumulative goal.</p>	<p>WSRC Susan Cathey (803-208-3215) Elda Foster (803-208-3216) DOE: TBD</p>
<p>V-B-2. HLW Tanks Eliminated</p>	<p>This metric will measure the number of HLW tanks closed.</p>	<p>Scoring values: TBD</p>	

Level 2	Definition	Goal and Scoring	Owner
V-C-1. Plutonium Metals/Oxides Stabilization	This indicator depicts the number of Pu Metal/Oxides containers by month stabilized and packaged in FB-Line in accordance with DOE-STD-3013-2000, Stabilization, Packaging, and Storage of Plutonium-Bearing Materials.	Blue = > 80% of scheduled Green = 65-79% of scheduled Yellow = 64-50% of scheduled Red = < 50% of scheduled	WSRC John Dickenson (803-952-4604)Harry Pund (803-952-3684) DOE Sachiko McAlhany (803-952-4802)
V-C-2. Enriched Uranium (Low Enriched Uranium Blenddown)	WSRC is scheduled to begin shipping blended low enriched uranium to Tennessee Valley Authority by 3/31/2003. This indicator depicts the number of containers of uranium solution shipped by month.	Blue = > 80% of scheduled Green = 65-79% of scheduled Yellow = 64-50% of scheduled Red = < 50% of scheduled	
V-C-3. Plutonium Residues	This indicator depicts the number of kilograms of plutonium contained in residue containers dissolved, packaged in a bagless transfer can, or disposed as transuranic (TRU) waste by month in FY2003.	Blue = > 80% of scheduled Green = 65-79% of scheduled Yellow = 64-50% of scheduled Red = < 50% of scheduled	
V-C-4. Depleted Uranium	This indicator depicts the number of metric tons uranium (MTU) dispositioned by month. In FY2003, 1,815 MTU contained in 3,263 uranium trioxide drums are scheduled to be dispositioned. The drums are part of the depleted, low enriched, and natural uranium located at SRS.	Blue = > 80% of scheduled Green = 65-79% of scheduled Yellow = 64-50% of scheduled Red = < 50% of scheduled	
V-C-5. Spent Nuclear Fuel	Package and dispose of 1,567 metric tons heavy metal (MTHM) of Spent Nuclear Fuel in FY2003. This indicator depicts the number of MTHM scheduled to be shipped by month in 8 cask shipments of Sterling Forest Oxide and 17 cask shipments of Mk16 SNF to H-Canyon for stabilization processing.	Blue = > 80% of scheduled Green = 65-79% of scheduled Yellow = 64-50% of scheduled Red = < 50% of scheduled	

Level 2	Definition	Goal and Scoring	Owner
V-D-1. Transuranic Drums Shipped to Waste Isolation Pilot Plant (WIPP)	<p>This performance indicator tracks the number of drums and drum equivalents shipped to the WIPP facility over the lifecycle of the PMP. This cumulative curve represents the plan for the entire TRU legacy waste volume as identified in the Performance Management Plan (PMP). Actuals are plotted against the plan to show performance against the PMP.</p>	<p>Blue = more than 15% above shipment target Green = 15% above to 15% below shipment target Yellow = 16%-25% below shipment target Red = more than 26% below shipment target</p>	<p>WSRC Paul Hunt (803-952-3714) Tony Maxted (7-6320) DOE: TBD</p>
V-D-2. Low Level and Low Level Mixed Waste	<p>This performance indicator tracks the number of cubic meters of low level and low-level mixed waste disposed. It includes the reduction of the legacy waste inventory (which is planned to be reduced to zero by 2006), and disposal of the ongoing generation of waste associated with continuing EM missions at SRS.</p>	<p>Under development</p>	
V-E-1. Nuclear Facilities	<p>Nuclear Facility Completions (number of facilities): Number of Nuclear Facilities that have reached their end state within the EM Program. This endpoint should correspond to one of the following: decommissioning, deactivation, dismantlement, demolition, or responsibility is transferred to another program or owner. Nuclear Facilities are those facilities that are classified as Nuclear Standards/Requirements Identification Documents.</p>	<p>Blue (Excellent) Cumulative completions are equal to or greater than scheduled Green (Good) Cumulative completions are 90% or within 2 of scheduled Yellow (Warning) Cumulative completions are <90% but >75% of scheduled Red (Danger) Cumulative completions are <75% of scheduled</p>	<p>WSRC Roger Duke (803-725-1908) David Yammitell (803-725-4605) DOE:Angelia Adams (803-725-8593)</p>

Level 2	Definition	Goal and Scoring	Owner
<p>V-E-2. Radioactive Facilities</p>	<p>Radioactive Facility Completions (number of facilities): Number of Radioactive Facilities that have reached their end state within the EM Program. This endpoint should correspond to one of the following: decommissioning, deactivation, dismantlement, demolition, or responsibility is transferred to another program or owner. Radioactive Facilities are those facilities that are classified as Radiological in Standards/Requirements Identification Documents.</p>	<p>Blue (Excellent) Cumulative completions are equal to or greater than scheduled Green (Good) Cumulative completions are 90% or within 2 of scheduled Yellow (Warning) Cumulative completions are <90% but >75% of scheduled Red (Danger) Cumulative completions are <75% of scheduled</p>	<p>WSRC Roger Duke (803-725-1908) David Yarnitell (803-725-4605) DOE Angela Adams (803-725-8593)</p>
<p>V-E-3. Industrial Facilities</p>	<p>Industrial Facility Completions (number of facilities): Number of Industrial Facilities that have reached their end state within the EM Program. This endpoint should correspond to one of the following: decommissioning, deactivation, dismantlement, demolition, or responsibility is transferred to another program or owner. Industrial Facilities include all capitalized buildings that are not classified as Nuclear or Radiological Standards/Requirements Identification Documents.</p>	<p>Blue (Excellent) Cumulative completions are equal to or greater than scheduled Green (Good) Cumulative completions are 90% or within 2 of scheduled Yellow (Warning) Cumulative completions are <90% but >75% of scheduled Red (Danger) Cumulative completions are <75% of scheduled</p>	

EFCOG Performance Measurement Data Dictionary

Revision 0, 12/5/02

The EFCOG Performance Measures Sub Group developed the following data dictionary to provide contractors and DOE. This is intended to provide a common, basic understanding of what is intended by terms such as "Risk Reduction", "Decontamination and Decommissioning", and so forth. It is not intended to be the final authority on how a site should define, or measure, those variables at a particular site site.

Many thanks to Ron Farchmin and Gail Rensink developed this data dictionary.

<http://www.efcog.org/wg/ismwg/ism/pmsg/pmsg.htm>

Management Systems: Those systems put in place to manage the site and ensure the mission of the site is satisfactorily accomplished.

Examples include:

- A) **Regulatory Performance:** Performance indicators designed to measure the site's ability to operate within the approved regulatory envelope. Typical measures include performance in permitting, effluent monitoring, number of enforcement actions or Notice of Violations, and waste stream disruptions.
- B) **Quality Assurance:** Performance indicators designed to measure the added value of implementing QA at the site. Typical measures include the number of items identified as nonconforming, number of issues identified and resolved, and assessments performed vs. issues identified. Also, existing measures should be considered where they add value to the process.
- C) **Stakeholder Relations:** Performance indicators designed to measure the satisfaction of the site's customer, public, and other affected parties. Typical measures include public meeting response, feedback effectiveness, customer satisfaction survey measures, and requests for information.
- D) **Human Resources:** Performance indicators designed to measure the ability of the site to adequately staff for performance and mission success Typical measures include staffing to target, critical skills staffing, and workforce diversity hiring index.
- E) **Management Information Systems:** PI designed to measure the effectiveness of supporting the site with innovative, software and hardware metrics to accomplish mission objectives. Typical measures include software trouble reports per application, number of upsets/crashes, and average age of systems.

Operational Performance: Those systems structured to manage operational performance to efficiently and effectively perform those operations (including construction and D&D) required by the organization's mission and project plan.

Examples include:

- A) **Radiation Protection (required):** Performance indicators designed to measure the effectiveness of ALARA performance. Typical measures include contamination events, personnel exposure limits, and unplanned releases.
- B) **Industrial Safety and Health (IS&H) (required):** Performance indicators designed to measure those incidents related to personnel safety. Typical measures include Total Recordable Case Rate, vehicle accidents, near misses, Cost Index, and Days Away, Restricted or Transferred Rate*.

* “Days Away, Restricted or Transferred” has replaced “Lost Workday Case Rate” in OSHA reporting requirements.

- C) **Criticality Safety:** Performance indicators designed to measure the performance of the criticality program. Typical measures include criticality program related Unusual Occurrences, Off Normals, near misses, incorrect material location/staging, and criticality deficiencies identified.
- D) **Safeguards & Security:** Performance indicators designed to measure the effectiveness of the security system. Typical measures include lost or stolen equipment (including SNM), computer intrusion attempts (hacking), missing data or computer software/hardware, and detection of viruses.
- E) **Project Management (required):** Performance indicators designed to measure the effective utilization of resources to meet Project goals. Typical measures include Schedule Performance Index (SPI), Cost Performance Index (CPI), and Project Health Assessment.
- F) **Fire Protection (required):** Performance indicators designed to measure the effectiveness of the fire protection program. Typical measures include fire detection systems impaired, fire protection systems impaired, and unplanned alarms/signals.
- G) **Work Planning and Control:** Performance indicators designed to measure the effectiveness of the work planning process. Typical measures include work orders completed, planning errors, and incorrect completion estimates.
- H) **Emergency Management and Preparedness:** Performance indicators associated with measuring the effectiveness of emergency response systems. Typical measures include drill timeliness, drill lessons-learned, training/retraining needs, and first responder performance.
- I) **Environmental Protection (required):** Performance indicators associated with measuring the protection/improvement of the environment under the site’s control.

Typical measures include State Pollution Discharge Elimination System (SPDES) permit excursions, unplanned releases, customer and stakeholder concerns, environmental improvement initiatives and environmental occurrences.

- J) **Transportation Management (required):** Performance indicators identified with the physical transport of wastes and other high profile mission critical items. Typical measures include transport schedule interruptions, accidents attributed to handling/packaging, and permitting/licensing issues.
- K) **Waste Management:** Performance indicators identified with the managing of waste streams critical to the site's mission and contractual commitments. Typical measures include reduction of handling waste, contamination events associated with packaging/repackaging, and cost avoidance/reduction by implementing improvements.
- L) **Authorization Bases (required):** Performance indicators designed to measure compliance to authorization bases. Typical measures include Technical Safety Requirements (TSRs) violations, Process Safety Requirements (PSRs) violations and USQ discoveries.
- M) **Conduct of Operations (optional):** Performance indicators designed to measure the sites disciplined operations, such as ORPS/SIRIM reportable occurrences, number of inadequate procedures, etc.

Infrastructure and Facility Management:

- A) **Systems and Equipment Essential to Safety:** Performance indicators which measure those Structures, Systems, and Components (SSC) which are critical to the safety of the environment, personnel, and the public. Typical measures include effluent monitoring problems, near misses, equipment failure, and backup system performance.
- B) **Construction Management:** Performance indicators which measure the performance of the construction phase of a facility/system. Typical measures include necessary design changes, ergonomic considerations, user input, feedback on stakeholder/customer needs, and regulatory requirement consideration.
- C) **Decontamination & Decommissioning (D&D):** Performance indicators associated with the safe and efficient cleanup and closing of a system and/or facility, such as unplanned contaminations. Typical measures include errors linked to configuration management, legacy discrepancies, and lock & tag errors.
- D) **Maintenance:** Performance indicators associated with the maintenance of SSC. Typical measures include the amount of completed preventative maintenance tasks, amount of unplanned maintenance requests, end-of-life extensions needed, and critical equipment down time.

- E) **Deficiency Reporting, (optional):** Performance indicators which measure the sites ability to identify and resolve issues identified with items and programs, such as time to resolve issues, amount of issues vs. recommendations, and customer/stakeholder identified issues. (This may be included in Quality Assurance)

Risk Reduction (required): Performance indicators which measure the effectiveness of reducing the risk to the site personnel, environment, and the stakeholders/public. Typical measures include off-site shipment of wastes, decontamination of facilities, amount of nuclear materials stabilized and packaged (or disposed of), and the number of hazardous waste tanks closed.

Project and Requirements Management (required): Performance indicators that measure the site's effectiveness in ensuring that the rigor of management controls applied is commensurate with the risk of the activities being controlled. Typical measures include the number of requirements removed or reduced, reduction of hazard classifications, elimination of unnecessary procedures, deletion of redundant monitoring requirements, and number of successful "pushbacks" of imposed requirements.

WASHINGTON GOVERNMENT GROUP INITIAL GUIDANCE FOR PERFORMANCE METRICS

This section provides the general definitions and goals of key performance indicators as developed by the Washington Government Group after a year of study by a crosscutting set of subject matter experts. These are general guidance and should be used by sites in the development of their own metrics. Each site may want to “bin” the KPIs to suit their particular needs.

1. INDUSTRIAL SAFETY INDICATORS

a. Total Recordable Case Rate

Suggested Goal: 3% reduction in the average of the previous three years

Blue = >3% reduction

Green = >1% reduction

Yellow = ≥0% reduction

Red = increase

b. Lost Days (days away) Rate

Suggested Goal: >5% reduction of average of past 3 years' rates

Blue = >5% reduction

Green = >3% reduction

Yellow = >0% reduction

Red = increase

c. Lost and Restricted Work Day Case Rate

Suggested Goal: 3% reduction in the average of the previous three years

Blue = > 3% reduction

Green = > 1% reduction

Yellow = > 0% reduction

Red = increase

2. ENVIRONMENTAL MANAGEMENT INDICATORS

a. Reportable Environmental Events

1) Number of regulatory non-compliances (as determined by receipt of notification, e.g., Notice of Noncompliance from Regulatory Agency)

2) Number of national Response Center notifications

3) CERCLA/EPCRA release > reportable quantity

Suggested goal: x% lower than the previous four-year performance average to reflect continuous improvement.

Blue >10% below goal (Continued performance at no reportable events is rated blue)

Green 0-9% below goal

Yellow 1-9% above goal

Red >10% above goal

b. Environmental Enforcement Actions

1) Number of NOV's

2) Total Fine/Penalties paid (weighted – see below)

NOV w/o fine = 1

NOV w/ fine < \$50K = 3

NOV w/ fine > \$50K = 6

Suggested goal: x% lower than previous four-year performance average to reflect continuous improvement.

Blue >10% below goal (Continued performance at no NOV's is rated green)

Green 0-9% below goal

Yellow 1-9% above goal

Red >10% above goal

3. POLLUTION PREVENTION/WASTE REDUCTION INDICATORS

a. Reduction in Volume of Waste Generated

- 1) Hazardous
- 2) Radioactive
- 3) Sanitary (non hazardous, non radioactive)

b. Sum of Disposal Costs Saved

Suggested goal: x% (each organization is to decide their own goal) reduction in waste generation from previous year while meeting all applicable regulatory requirements and/or goals set by EPA, DOE, DOD, etc.

Proposed measure: based yearly waste generation forecast from planned activities, achieve percentage reductions for each of the three waste stream types (each having its own goal). Hazardous and radioactive waste reduction efforts should be given more emphasis because of higher associated costs. Since unit disposal costs may vary depending on location, it is proposed that total cost savings be reported but not factored into the target calculation.

- Blue >10% above goal
 Green 0-9% above goal
 Yellow 1-9 % below goal
 Red 10% below goal

4. EMERGENCY SERVICES AND FIRE PROTECTION

a. Fire Protection

b. Fire Detection

Each organization should set a goal (either a number or percent) of fire protection and fire detection systems it will allow in impaired or inoperable condition (with compensatory action) at any time.

- Blue = .8 goal
 Green = goal
 Yellow = 1.1 goal
 Red = 1.2 goal

c. Emergency Services Drills and Exercises

A similar approach is to be taken for drills and exercises scheduled versus performed and percentage of overdue corrective actions and assessments tolerated.

5. MAINTENANCE INDICATORS

a. PM/PdM as a % of Total maintenance

This metric measures the effectiveness of the PM and Predictive Maintenance (PdM) by indicating what percentage of total maintenance is being performed as PM/PdM. (Since this is a ratio, the measurement of PM and PdM can be in whatever units the organization determines most useful, i.e. hours, man-hours, events, actions, etc.)

Suggested Goal: 50%

- Blue = 56-100%
 Green = 40- 55%
 Yellow = 30-39%
 Red = <30%

b. Maintenance C/M Backlog in Man-hours

This measure measures the Total Corrective Maintenance (CM) backlog in man-hours Excludes work associated with Preventative Maintenance, Predictive Maintenance, and plant modifications.

Suggested goal: The goal is equal to the average monthly backlog for the previous year. A monthly index scoring is applied to the goal as follows:

- Blue = <70% of goal
 Green = 71-105% of goal
 Yellow = 106-130% of goal
 Red = >131% of goal

c. Maintenance Delinquent P/Ms

This metric is intended to measure the total number of Delinquent Preventative Maintenance (PM) work orders – those PMs that are not field work complete, but have exceeded their scheduled completion date and any allowable grace period.

Suggested goal: The goal is equal to the average monthly backlog for the previous year. A monthly index scoring is applied to the goal as follows:

Blue = <70% of goal
 Green = 71-105% of goal
 Yellow = 106-130% of goal
 Red = >131% of goal

6. QUALITY ASSURANCE INDICATORS

a. NCR/PDR/Deficiency Reports Processing Status (age)

Each site would establish its own statistical baseline and then work towards an improvement goal. The coloring would be based on being within the goal or improvement curve.

Blue = < 95% of goal
 Green = 96 - 100% of goal
 Yellow = 101 - 110% of goal
 Red = >110% of goal

b. Corrective Action Reports/Items completed on time

Blue = >95%
 Green = >90%
 Yellow = >85%
 Red = <85%

c. QA Surveillance Report Processing Status (age)

Each site would establish its own statistical baseline and then work towards an improvement goal. The coloring would be based on being within the goal or improvement curve.

Blue = < 95% of goal
 Green = 96 - 100% of goal
 Yellow = 101 - 110% of goal
 Red = >110% of goal

7. ENGINEERING INDICATORS

a. Engineering changes (as a measure of quality)

Suggestions include the following:

- Measure changes to product design/work plans/engineering documents after approval (e.g., approved for construction status).
- As a result of final internal (cross discipline) review
- After approval due to field implementation problems attributed to engineering design
- As a result of testing problems attributed to engineering/design
- In a construction/production environment, measure required rework.
- Record only changes/rework caused by engineering unit.
- Total the % of initial products submitted for final internal Engineering review to the total processed from that point without "substantial" revision.

Blue =< 10%
 Green = < 15%
 Yellow =< 20%
 Red => 20%

b. Requests for Engineering Assistance or whatever the analogous vehicle is called.

Suggestions include the following:

- Measure requests, resolutions, backlog of REAs or construction site RFIs (Request for Information) due to engineering shortcomings.
- Engineering involvement in plant start-up or product introduction to manufacturing (measured in man-hours or dollars).
- Number of non-conforming items during project execution (e.g. construction; initial manufacturing and testing).
- % responded to in original allotted time

Blue = 100% - 96%
 Green =<95%
 Yellow =<90%
 Red = <85%

c. Employee participation in product/process improvements

This would measure improvement in how work is done efficiently. Examples include:

- Status of log of process/product improvement suggestions.
- Dollar value of projected savings due to accepted product/project improvements.
- Number of employee meetings/reviews where improvement/development topics are discussed.
- Level of funding of process improvement projects.
- Measure of success for a "Lessons Learned" Program.
- Number of team interface meetings held (e.g., process mapping meetings; constructibility review) during the design phase of project.
- Measure volume of value engineering activities in net dollar savings.

8. EMPLOYEE CONCERNS PROGRAM INDICATORS

a. Percent of concerns resolved by internal management

This would be the following formula:

$$\frac{\text{\# of concerns resolved by management internally}}{\text{\# of concerns resolved internally} + \text{\# concerns taken to external source}}$$

Blue = 100% internal
 Green = >95% internal
 Yellow = >90% internal
 Red = <90% internal

b. Employee Issue Resolution Trend

Color Scale Determination

Blue 100% < 30 days old
 Green >95% < 30 days old
 Yellow >90% < 30 days old
 Red <89% < 30 days old

9. EMPLOYEE PERFORMANCE INDICATORS

a. Conduct of Operations Performance Index

This indicator would track & trend Disciplined Operations (DO).

Suggested Goal: maintain performance @ 4.5 (+/- 1.0) events/200k hours. Maintain a healthy balance of operations without suppressing reporting.

Blue =<4.5
 Green =4.5 – 4.8
 Yellow =4.8 – 5.0
 Red =>5.0

b. Violation/Inadequate Procedures

This indicator would track & trend Violation/Inadequate Procedure Disciplined Operations component events per 200,000 hours.

Suggested Goal: maintain performance @ 1.5 events/200k hours. Maintain a healthy balance of operations without suppressing reporting.

Blue = <1.5
 Green =<2.0
 Yellow = <2.5
 Red = >2.5

c. Employees Cost Effectiveness Ideas Performance

This indicator would track & trend employee cost improvement suggestions, including those submitted, approved & implemented per 100 employees.

Suggested Goal: 15 ideas accepted/100 employees. Because people are our most important resource, then it is imperative to encourage and reward participation for cost effective continuous improvement

Green = >15

White = 15 -10

Yellow = 10 -5

Red = <5

10. SAFEGUARDS AND SECURITY (Note: Events are defined as violations, infractions, incidents)**a. Security Events****b. Computer events****c. Document events**

Suggested goal **:

Blue = 0 events

Green = 1 event

Yellow = 2 events

Red = ≥ 3 events

**These are examples of goals. Exceptions and/or modification of goals would need to be modified for sites with > 1000 employees and > 10,000 documents

11. FISCAL ACCOUNTABILITY INDICATORS**a. Gross Profit**

Award Fee less Unallowable Cost divided by Available Fee

Blue $\geq 91\%$

Green 80 – 90%

Yellow 75 – 79%

Red < 75%

b. Cash Flow

Date Collected less Date Earned

Blue < 10 days

Green 11–20 days

Yellow 21-30 days

Red >30 days

c. Revenue Growth

Revenue for recorded time present in year divided by revenue to same time period previous year

Blue >100%

Green = 100%

Yellow--

Red <100%

12. HUMAN RESOURCES INDICATORS**a. Staffing to Target**

Examples include:

- % Staffing to Budget/Staffing Plan

- % Contract Staffing to Budget/Staffing Plan

b. Critical Skills Staffing

Examples include:

- % Critical Hires to Staffing Plan

c. Workforce Diversity Hiring Index

Examples include:

- % Minority Technical Hires – Technical Hires = direct staff such as engineers, chemists, project controls, etc.

- % Female Technical Hires – Technical Hires = direct staff such as engineers, chemists, project controls, etc.
- Division Minority Goals/hired or placed
- Division Female Goals/hired or placed

Each site will develop a target for female or minority hiring that is consistent with its affirmative action plan (%). Each report will be an actual YTD hire (%).

Color Scale Determination - % of Goal Attainment per Site Goal

Blue .97 – 1.00

Green .90 - .97

Yellow .70 - .89

Red <.70

13. PROJECT MANAGEMENT INDICATORS

a. SPI = Actual Days / Baseline Days

Blue < 0.94

Green = 0.99 to 0.94 with ETC <1.0

Yellow = 1.059 to 1.0 or .94 with ETC > 1.0

Red > 1.06

b. CPI = Actual Cost/Baseline Cost

Blue < 0.94

Green = 0.99 to 0.94

Yellow = 1.059 to 1.0

Red > 1.06

c. Project Health

Health of project is a subjective assessment by the Project Manager of real and potential obstacles to finishing on schedule, on budget or other problems

14. COST EFFECTIVENESS INDICATORS

a. Milestone Performance

Milestones Achieved divided by Milestones Committed

Blue > 95%

Green 85 to 95%

Yellow 80 to 85%

Red < 80%

b. Budget Cost Performance

Budget Performance divided by Total Budget

Blue > 95%

Green 85 to 95%

Yellow 80 to 85%

Red < 80%

c. Cost Savings Performance

Cost Savings divided by Cost Savings Goal

Blue > 95%

Green 85 to 95%

Yellow 80 to 85%

Red < 80%

d. PBI Performance

PBIs Achieved divided by PBIs Committed

Blue > 95%

Green 85 to 95%

Yellow 80 to 85%

Red < 80%

15. REGULATORY PERFORMANCE INDICATORS**a. Overdue Commitments Index** **Weight**

- | | |
|---|-----|
| 1) State Environmental Agency Overdue Commitments | 0.3 |
| 2) Other State Agency Overdue Commitments | 0.1 |
| 3) DOE Overdue Commitments | 0.3 |
| 4) Stakeholder Groups Overdue Commitments | 0.3 |

Rating Performance Criteria

- | | |
|--------|----------------------------------|
| Blue | No overdue commitments |
| Green | One overdue commitment |
| Yellow | Two or three overdue commitments |
| Red | Four or more overdue commitments |

Note: It is recognized that a single overdue commitment could be categorized as yellow or red depending upon the risk or if were one of only a few commitments to be met.

b. Open Regulatory Items Index **Weight**

- | | |
|--|-----|
| 1) State Environmental Agency Open Commitments | 0.3 |
| 2) Other State Agency Open Commitments | 0.1 |
| 3) DOE Open Commitments | 0.3 |
| 4) Stakeholder Groups Open Commitments | 0.3 |

Rating Performance Criteria

- | | |
|--------|------------------------------------|
| Blue | All commitments on schedule |
| Green | Likely to miss >5% of commitments |
| Yellow | Likely to miss >10% of commitments |
| Red | Likely to miss >20% of commitments |

c. DNFSB Commitment Adherence Index **Weight**

- | | |
|---|-----|
| 1) Status of 94-1 Commitments | 0.8 |
| 2) Status of other non-94-1 DNFSB commitments | 0.2 |
| 3) Commitments older than 6 months | 0.0 |
| 4) Commitments older than 12 months. | 0.0 |

Rating Performance Criteria

- | | |
|--------|--|
| Blue | Greater than 95% commitments on schedule |
| Green | Likely to miss >5% of commitments |
| Yellow | Likely to miss >10% of commitments |
| Red | Likely to miss >20% of commitments |

16. COMMUNITY OR EXTERNAL RELATIONS**a. Responsiveness to Citizen Advisory Boards/Citizen Advisory Commissions**Rating Performance Criteria

- | | |
|--------|--|
| Blue | 85-100 percent turnaround to requests/commitments within 30 days |
| Green | 70-84 percent turnaround to requests/commitments within 30 days |
| Yellow | 50-69 percent turnaround to request/commitments within 30 days |
| Red | 49 percent or less turnaround to requests/commitments |

b. Public Meeting Effectiveness

Using survey techniques, measure public meeting effectiveness. Each site will document through exit surveys each participant's percentage of change from before to after the meeting or session relating to their impressions.

Rating Performance Criteria

- | | |
|--------|---------------------------------|
| | "Did we meet your expectation?" |
| Blue | 50-100 percent improvement |
| Green | 25-49 percent improvement |
| Yellow | 10-24 percent improvement |
| Red | 9 percent or less |

c. Tour/Visitor's Program Effectiveness

Using survey techniques, measure tour and visitor program effectiveness. Each site will measure through exit surveys each participant's percentage of change from before to after the tour or program relating to their awareness.

Rating Performance Criteria

"Did this tour and/or program increase your awareness of the facility and its operations?"

Blue	50-100 percent improvement
Green	25-49 percent improvement
Yellow	10-24 percent improvement
Red	9 percent or less

17. SELF ASSESSMENTS

a. Scheduled vs. Complete

Blue	98-100%
Green	96-97%
Yellow	94-95% Yellow
Red	<93% Red

b. Self Assessment Status

This metric would include the number of items opened each month, closed each month, items overdue, and the total number of open in the system. Goal = no more than 1% delinquent. Percent may vary depending of the size of the site.

Delinquent

Blue	0%
Green	<1%
Yellow	<2%
White	<3%

18. QA ASSESSMENT LEVEL 2 SUPPORTING CATEGORIES

When an assessment is conducted there is typically a checklist prepared to guide the assessor. Depending upon the type of assessment being performed, the checklist will contain "attributes." The attributes will typically be one of two types: either requirements from our established quality programs and procedures (a compliance assessment) or attributes in the form of performance indicators (an implementation assessment).

A compliance assessment tells if written quality programs address the requirements of the regulatory body/agency having jurisdiction over the project (e.g., NRC, DOE, Army Corps of Engineers, etc.). It also tells if those requirements are passed down through implementing procedures and procurement documents, and if personnel are effectively trained to perform in accordance with those requirements and procedures.

An implementation assessment tells if written quality program and procedures are being implemented effectively.

Because assessments are performed to a checklist of attributes, the number of non-compliances can be compared to the number of attributes and expressed as a percentage.

a. QA Program Compliance

This indicator measures percentage of the QA Program Compliance attributes assessed versus the QA Program Compliance attributes found compliant. QA Program Compliance pertains to assessing whether the QA requirements applicable to the project and the methods to meet these requirements are adequately delineated in the project's command media. This indicator should also address personnel training and qualification assessment attributes.

b. QA Program Implementation

This indicator measures percentage of the QA Program Implementation attributes assessed versus the QA Program Implementation attributes found compliant. QA Program Implementation pertains to assessing whether the work is being performed in accordance with the established project command media associated with the QA Program Compliance indicator.

Notes on both the QA Program Compliance and Implementation Indicators

- The Assessment Plan must delineate specific attributes to be assessed. Changes to the plan during the assessment must be documented in the plan. Thus, the Assessment Plan provides the number of attributes assessed for both of these indicators.

- A deficiency/concern is categorized as a noncompliance or an observation. Observations should not be included in the calculating the performance. Also, there should be a method to factor in additional value for attributes that are identified with proficiency.
- More than one noncompliance may be identified to an attribute. Therefore, there needs to be method whereby the non-compliances are grouped to the attribute.

Below are grading figures for above two indicators.

- Blue = 100% - 95%
- Green = 94% - 90%
- Yellow = 89% - 80%
- Red = 79%- below

c. Corrective Action Implementation

This indicator measures percentage of the corrective actions completed by the original forecasted completion date.

Suggested grading scale is as follows:

- Blue Completed ahead of schedule.
- Green Completed on or within 30 days after scheduled date.
- Yellow Completed within 30 to 60 days after scheduled date.
- Red Completed greater than 60 days after scheduled date.

There should be consideration for those corrective actions that are dependent on external interfaces outside the control of the project. The Corrective Action Document serves as the tool to gather data for this indicator.

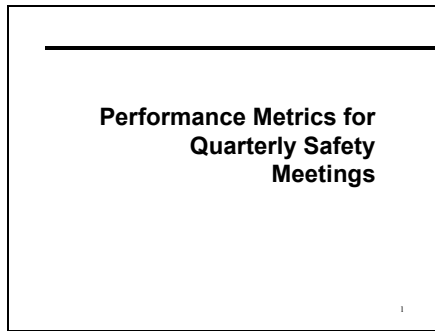
19. EXTERNAL ASSESSMENTS

- Findings/Audit
- Days Open
- Times Delinquent
- Days Delinquent
- Extension Request

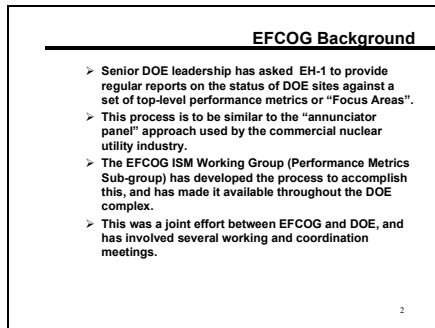
Individual Site External Oversight Indicator Scoring Sheet				
Attribute	Red	Yellow	Green	Blue
Findings/Audit	>10	5-10	3-4	<3
Points	10	7	5	0
Days Open	>45	15-45	10-14	<10
Points	10	7	5	0
Times Delinquent	>5	3-5	1-2	<1
Points	10	7	5	0
Days Delinquent	>10	5-10	1-4	<0
Points	20	15	10	0
Extension Requests	>5	3-5	1-2	<1
Points	10	7	5	0
Index (Totals)				

APPENDIX A: PRESENTATION

Slide 1



Slide 2



At the DOE ISM Executive Leadership Safety Conference (December 2001), Undersecretary Bob Card asked Beverly Cook (EH-1) to develop an annunciator panel type of metric system for the DOE Complex.

Bob Pedde, Westinghouse Savannah River Company President, and the Energy Facility Contractor Group (EFCOG) Integrated Safety Management (ISM) Working Group volunteered to have the Performance Metric Sub-group work with the DOE sites to develop such a system/process.

Meetings were held at the Savannah River Site (May 1, 2002); Albuquerque, New Mexico (May 7-8, 2002); Atlanta, Georgia (August 1, 2001); and Las Vegas, Nevada (October 23-25). Involvement included DOE and contractors working together.

A point paper was written to describe how and why the EFCOG Sub-Group would develop the annunciator panel. This paper can be found at:

<http://www.efcog.org/wg/ismwg/ism/pmsg/pmsg.htm>

Slide 3

Color Rating System
<p>Performance indicators established by commercial nuclear companies</p> <ul style="list-style-type: none"> ➤ Vital element of industry improvement initiative. ➤ Leading and following indicators. ➤ Includes analysis and action section. ➤ Quick status summary (utility, NRC, and INPO). ➤ Easy assessment of trends. ➤ Sharing of expertise/knowledge. <p style="text-align: right;">3</p>

Reasons that the commercial nuclear industry uses an annunciator-type performance metric system.

Slide 4

Key Points
<ul style="list-style-type: none"> ➤ The task was to develop a standard process through which existing performance information could be reported in a common format. ➤ The number of Focus Areas/Special Emphasis Areas is small and generically applicable across DOE operations. ➤ The specific supporting metrics for the Focus Areas/Special Emphasis Areas will be determined by the Field Offices and their contractors. ➤ The reporting format, the colors to be used, and the definitions of those colors will be common across the DOE Complex. ➤ The specific supporting metrics, and the process through which site performance is rated and assigned a color code, will vary from site to site. ➤ The approach is to get something workable in place, then improve as needed based on experience. <p style="text-align: right;">4</p>

This slide provides the highlights from the Point Paper.

The EFCOG Sub Group determined that a standard process and format was necessary with 3 Focus Areas (Management Systems; Operational Performance; and Infrastructure and Facility Management). Special Emphasis Areas include Risk Reduction and Project and Requirements Management

The group also determined the colors to be used to “rate” the performance of the sites with definitions.

However, because of the differences in missions, contracts, and activities at the various sites; specific supporting metrics and the process through which site performance is rated and assigned a color code will be determined at the site level. Because of this, comparison between sites or across the DOE Complex are not possible.

Lessons Learned will be used to improve the process over the next few months.

Slide 5

Benefits
<ul style="list-style-type: none"> ➤ Annunciator systems are flexible and can be easily and effectively tailored to: <ul style="list-style-type: none"> • Differing missions, facilities, programs, and activities • Various management and organizational levels • Differing management needs and interests • Monitoring temporary areas of interest such as problem programs, personnel performance trends, or short-termed missions or activities. ➤ Integrates a significant volume of data and performance knowledge into easily discernable and visually effective performance ratings. ➤ Shifts contract performance to focus on results through KPIs. ➤ Color rollup allows quick drill down to source of problem areas. ➤ Key Performance Indicators (KPIs) are objective.
5

This system's flexibility allows the site to map the various performance metrics to suit various customers, including DOE-HQ, Operations Office, regulators, contractor's Board of Directors, the public, and other interested stakeholders.

The color annunciator display allows management and oversight groups to quickly focus attention and resources to those areas that are not performing well.

Current DOE-HQ focus is to remove requirements and to focus on results. This system encourages results, not requirements.

The objectivity of the system also helps management focus on results.

Slide 6

Benefits (continued)
<ul style="list-style-type: none"> ➤ Analysis/Action section of KPI allows assessment of problem status. ➤ Facilitates synergistic and constructive management review and discussion of performance, vulnerabilities, trends, and priorities. ➤ Although dependent on lagging performance metrics, the annunciator rating system can be considered "leading" in that it allows timely identification of adverse performance and trends and the proactive application of management attention and resources. ➤ Promotes constructive, beneficial competition and pride in performance accomplishments. ➤ Promotes consistency in approaches across sites. ➤ Drives continuous improvement and the most effective and efficient application of limited resources.
6

The analysis/action section is the most important section of the key performance indicators (KPIs). This is where the KPI owner analyzes the performance by looking at the data and asking WHY. The reader should be able to quickly tell if the KPI owner really understands what is happening. The action defines what the KPI owner plans to do to either improve performance (if yellow or red) or sustain/improve (if white or green).

Slide 7

Colors and Definitions
<ul style="list-style-type: none"> ➤ Blue: "Outstanding". Performance which significantly exceeds expectations. ➤ Green: "Good". Performance which meets or exceeds expectations. ➤ Yellow: "Marginal". Yellow can be used to denote either of two conditions: <ul style="list-style-type: none"> • Borderline or declining performance. • Acceptable performance that relies on a set of conditions which could change and quickly send performance into the "Red" category. ➤ Red: "Poor". Performance which clearly does not meet expectations. ➤ White: "No Data".
7

Slide 8

Sample Annunciator Panel

Focus Area	Site Level Annunciator Panel and Examples of Level 2 Inputs										
Management Systems	Regulatory Performance	Quality Assurance	Safety Culture	Authorization Bases	Stakeholder Relations						
	Radiation Protection	Industrial Safety and Health	Criticality Safety	Sequestration and Security	Project Management	Fire Protection					
Operational Performance	Waste Planning and Control	Emergency Preparedness	Environmental Protection	Near Misses	Transportation Management	Waste Management					
	Inventory and Facility Management	System and Equipment Reliability	Construction Management	DAD	ER	Maintenance	Configuration Management				

8

This is a sample annunciator panel that will be used by EH-1 during quarterly safety reviews with the Undersecretary and the Program Secretarial Officers (PSOs).

The 3 focus areas are shown in the left column. Across the right from each focus area, the supporting metrics are shown. The boxes on the right are the special emphasis areas. Within each block, there are several blocks. The larger block shows the performance rating for the current month or quarter. The smaller blocks in the upper left corner show the previous 4 quarters with the most recent quarter on the right and the oldest quarter on the left. This allows trends to be shown. Also note, the each box has a letter, representing the colors (B for Blue, G for Green, Y for Yellow, and W for White) in case there are instances where color copies are not available.

Slide 9

Safety and Security Focus Area Example

Level 1	Site Name Performance Indicators										
Management Systems	Regulatory Performance	Notices of Violation	Regulatory Milestones	Regulatory Commitments Met	DNFSB Commitments	Tri-Party Agreements					
	Quality Assurance	NCR Reporting	PIR Status								
	Safety Culture	Safety Based Safety	Number of Days Between TRCs	First 90 Cost Reb.	Cost Index	DART					
	Authorization Bases (Required)										
	Stakeholder Relations	Stakeholder Relations	Public Meeting Effectiveness	Response to Public Inquiries	Tours	Educational Outreach					

9

This example takes the Management Systems Focus Area and provides additional details with supporting metrics. In the previous slide, the Management Systems Focus Area showed that it is composed of Regulatory Performance, Quality Assurance, Safety Culture, Authorization Bases, and Stakeholder Relations.

In this slide, Regulatory Performance is shown to be composed of Notices of Violation, Regulatory Milestones, Regulatory Commitments Met, DNFSB Commitments Met, and Tri-Party Agreements. In essence, this is showing one level down from the previous slide. This enables the reader to discover which areas are showing improvement and which areas need improvement.

Slide 12

DOE-HQ Reporting Process

- It is expected that:
 - Reports will be jointly developed by the local DOE office and its contractor(s).
 - The local DOE office will submit the report to the appropriate PSO.
 - The PSO will submit an information copy to EH.
 - The PSO will present the report to the appropriate Undersecretary.
- This will occur quarterly. The first (optional) submission is due on 12/1/2002. The first required submission, for data through 12/31/2002, is due on 2/15/2003.

12

This slide describes how the metrics will reach DOE-HQ, allowing both DOE and contractor review prior to the submission. However, since the system is objective, the only sections that need review by the local DOE office is the actual data for the month and the Analysis/Action section. The color rollups are the result of an arithmetic algorithm.

Slide 13

Performance Metrics as Tools for Individual Site

- KPI format is based on commercial nuclear metrics
- Tools for managers
 - Objective set of metrics
 - Once key performance indicator (KPI) goals and scores are established, summary panels (Green, White, Yellow, or Red) are mathematical formulas
 - Data for each KPI represents a large spectrum; one disappointment may not drive entire KPI score. There are other mechanisms to address one problem area.
- Six Sigma evaluation will allow more in-depth analysis for each KPI, where appropriate

13

Probably the hardest task is determining which metrics to measure. Once the metrics have been defined and the goals and scores are determined, the panel displays of the “average” score for each metric level, leading to the Focus and Special Emphasis Areas.

Six Sigma statistical process tools will allow more in-depth analysis.

Slide 14

Managing with Metrics

Key Performance Indicators (KPIs)

- Define what we are measuring
- Define the goal and values for scoring
- Analyze performance
- Describe actions needed to maintain and/or improve performance
- Provide contact names and phone numbers for additional information

14

Slide 15

DOE Involvement
<ul style="list-style-type: none"> ➤ Definition -- Is contractor measuring the "right" information? ➤ Goal and Scores (Green, White, Yellow, and Red) -- Does contractor have the bar too high or too low? ➤ Analysis/Action -- Does contractor understand the data? Are they responding appropriately? ➤ DOE and contractor KPI owners and subject matter experts should discuss these areas to resolve differences.

At the Savannah River Site, DOE involvement started with defining what performance was to be measured. DOE staff members reviewed and modified the goals and scoring values, as needed. Then, each month they review the graph and data, as well as the Analysis/Action section. Working together, DOE and WSRC counterparts analyze the data and performance and determine appropriate actions for the contractor to take. DOE also ensures that the goal and scoring ranges are neither too high or too low.

Slide 16

Next steps...
<ul style="list-style-type: none"> ➤ Implementation across the Complex by 2/15/2003. ➤ Monitoring and assistance by Performance Metrics Sub-group. <ul style="list-style-type: none"> • Have developed a short "dictionary" to aid in common interpretation of Focus Areas, Special Emphasis Areas, and supporting metrics. • Have written a manual on how to develop and implement the process. • Collect good practices and areas for improvement. • Share lessons learned with site coordinators. ➤ If experience is positive, examine redundant performance reporting systems for streamlining or elimination. ➤ Evolve the system, as needed, to keep it: <ul style="list-style-type: none"> • Simple. • Focused on information of use to managers. • Flexible.

The next steps for the EFCOG Sub Group are to implement the annunciator panel performance measures by February 15, 2003. The Sub Group will assist all sites in development of the process and monitor the results to collect good practices and areas of improvement and share lessons learned.

As the process evolves and becomes standard across the DOE Complex, the Sub Group will also review redundant performance measurement systems to streamline and/or eliminate unnecessary requirements, as appropriate.

The focus will be to keep the process simple and easy to use, remembering that the primary purpose of the annunciator panel display is to aid managers in decision-making. First and foremost, the system must assist site management.

Finally, flexibility is necessary to accommodate the various needs and missions of the sites of the DOE Complex.

Slide 17

Rating/Scoring Sheet																																																	
Scoring	<table border="1"> <thead> <tr> <th colspan="2">Scores for each L-2 or L-3 KPI metric</th> </tr> </thead> <tbody> <tr> <td>Green</td> <td>3</td> </tr> <tr> <td>White</td> <td>2</td> </tr> <tr> <td>Yellow</td> <td>1</td> </tr> <tr> <td>Red</td> <td>0</td> </tr> </tbody> </table>	Scores for each L-2 or L-3 KPI metric		Green	3	White	2	Yellow	1	Red	0																																						
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For those who are interested, this is a scoring sheet used at the Savannah River Site. The colors are assigned numbers (Blue is 3 points, Green is 2 points, Yellow is 1 point and Red is no points.) Within an area on the annunciator panel, the colors are “added” to determine the value for the Level 1 or 2 performance measure.

To determine the value for a summary, the values for the individual metrics are added. (SRS KPIs are equally weighted at this time. More sophisticated differential weighting may be added later.) For example, if a summary has 4 metrics with color values of blue (3 points), green (2 points), green (2 points) and green (2 points), the total for that summary is 9 points (3+2+2+2=9). Using the table, since there are 4 metrics and the total 9 points, the value for the summary is green.

APPENDIX B: NUCLEAR SAFETY

WSRC is evaluating the various components to determine applicability to SRS Nuclear Safety Level 2 metrics. Westinghouse Safety Management Solutions created this appendix, which can be used as a general guidance. WSRC has opted not to include Authorization Basis Document Management Index.

1. Nuclear Safety Issue Management Index (these include all NIs, PISAs, Discovery USQs, etc.)
 - percentage of unresolved nuclear safety issues to total
 - average age of unresolved nuclear safety issues
 - number of unresolved nuclear safety issues
 - greater than 30 days old
 - greater than 6 months old
 - greater than 1 year old

2. Significant Nuclear Safety Incidents Index
 - number of emergency notifications
 - number of reportable unusual occurrences related to nuclear safety
 - number of inadvertent safety system challenges
 - number of Technical Safety Requirement violations (or Operational Safety Requirement or Technical Specification as applicable)
 - number of significant criticality infractions (e.g. both Double Contingency Controls violated)
 - number of Criticality Safety Limit violations
 - number of “for cause” shutdowns by DOE which are related to Nuclear Safety

NOTE: It is recognized that double, triple or even 5X counting may occur for one event. This is acceptable since accumulative counting appropriately reflects the significance of the event.

3. Authorization Basis Document Management Index
 - Number of overdue requirements/commitments to DOE associated with 10CFR830.

The order of safety significance and associated weighting for the color codes is:

- Significant Nuclear Safety Incidents Index (50%)
- Nuclear Safety Issue Management Index (30%)
- Authorization Basis Document Management Index (20%)

The frequency of measurement is quarterly

Proposed Nuclear Safety Level 2 Metrics

1. Nuclear Safety Issue Management Index (including all NIs, PISAs, Discovery USQs, etc.)

- a. Ratio of the number of unresolved nuclear safety issues on the last day of each quarter of a rolling annual fiscal year to the total cumulative number opened during the rolling annual fiscal year.

RATIO	R
$0.00 \leq R < 0.25$	0
$0.25 \leq R < 0.50$	1
$0.50 \leq R < 0.75$	2
$R \geq 0.75$	3

- b. Average age of all unresolved nuclear safety issues on the last day of each quarter of a rolling annual fiscal year.

AVERAGE AGE	T
$0 \text{ month} \leq T < 1 \text{ month}$	0
$1 \text{ month} \leq T < 3 \text{ months}$	1
$3 \text{ months} \leq T < 12 \text{ months}$	2
$T \geq 12 \text{ months}$	3

- c. Sum of the ratios of unresolved nuclear safety issues greater than 30 days old (U1), greater than 6 months old (U2), and greater than 1 year old on the last day of each quarter of a rolling annual fiscal year to the total cumulative number opened during the rolling annual fiscal year.

SUM OF RATIOS	X
$(U1/U) + 2(U2/U) + 5(U3/U) < 0.5$	0
$(U1/U) + 2(U2/U) + 5(U3/U) > 0.5 < 1.5$	1
$(U1/U) + 2(U2/U) + 5(U3/U) > 1.5 < 2.5$	2
$(U1/U) + 2(U2/U) + 5(U3/U) > 2.5$	3

- d. Result for Nuclear Safety Issue Management Index

S = A + (B + X) / 2	COLOR
$S = 0$	Blue
$1 < S < 2$	Green
$2 < S < 3$	Yellow
$S > 3$	Red

2. Significant Nuclear Safety Incidents Index

- a. Number of emergency notifications during each quarter of the fiscal year (X=2).
- b. Number of reportable Unusual Occurrences related to nuclear safety during each quarter of the fiscal year.
- c. Number of inadvertent safety system challenges during each quarter of the fiscal year
- d. Number of Technical Safety Requirement, Operational Safety Requirement, and Technical Specification violations during each quarter of the fiscal year (X = 2)
- e. Number of significant criticality infractions (e.g. both Double Contingency Controls are violated) during each quarter of the fiscal year (X = 3)
- f. Number of Criticality Safety Limit violations during each quarter of the fiscal year (X = 3)
- g. Number of “for cause” shutdowns ordered by DOE during the rolling annual fiscal year due to nuclear safety concerns as measured at the end of each quarter of the rolling annual fiscal year(X = 6)

X = Count Multiplication Factor

NOTE: It is recognized that double, triple or even 10X counting may occur for one event. This is acceptable since accumulative counting appropriately reflects the significance of the event.

TOTAL COUNT	COLOR
$C = 2$	Blue
$2 \leq C \leq 5$	Green
$6 \leq C \leq 10$	Yellow
$C \geq 11$	Red

3. Authorization Basis Document Management Index

- Number of overdue requirements/commitments to DOE associated with 10CFR830 on the last day of each quarter of the fiscal year.

TOTAL COUNT	COLOR
$N \leq 2$	Blue
$3 \leq N \leq 5$	Green
$6 \leq N \leq 8$	Yellow
$N \geq 9$	Red

Each Level 2 metric will be evaluated annually and the Level 1 roll-up will also occur annually

The hierarchy of safety significance of issues and their associated weights for the color codes is:

Nuclear Safety Issue Management Index	0.3
Significant Nuclear Safety Incidents Index	0.5
Authorization Basis Document Management Index	0.2

RESULT	COLOR
$0.0 \leq R < 1.4$	Blue
$1.5 \leq R < 4.1$	Green
$4.2 \leq R < 7.8$	Yellow
$R \geq 7.9$	Red

$$R = (S * 0.3) + (C * 0.5) + (N * 0.2)$$