Implementing Performance Measures

Introduction. Performance Measures are receiving increased attention and importance by all levels of DOE. This paper provides a suggested methodology for implementing performance measures. This methodology follows the development of three tiers:

1. Mission and Vision(assumed to be in place)
2. Business Objectives(big picture - outcome/results oriented)
3. Performance Measures (detailed and process oriented).

1. Develop Business Objective(s) for the organization

- Based upon current Mission and Vision statement
- Identify PRODUCTS and CUSTOMERS
- May include ratios such as productivity (output to input), cost per unit, time per unit; differences such as profit (selling price minus input cost); or a series of individual terms such as quantity produced, rework costs, rework time, and reject/defect rate.
- State and define underlying "values" and quality factors such as safety, rework, environmental soundness, customer satisfaction.
- State optimal direction (Maximize, Minimize)
- DO NOT list activities, processes, or numerical quotas

2. Define Performance Measures for processes within each Business Objective.

Each performance measure should reflect a process. Understanding the performance measure data AND the underlying process is necessary in order to optimize the Business Objective.

Collect performance measure data:

a. If data to support the performance measure already exists:

- Document source of data
- Define parameters for the retrieval of performance data
- Review the source data and clean up anomalies
- Add new parameters to data collection if needed

b. If data to support the performance measure does not exist:

- Explicitly define data to be collected
- Create consistent and verifiable system to input and store data
- Task person(s) to collect data
- Definitions for data collection and processing should be thorough and documented such that ANYONE at ANYTIME in the future should be able to regenerate the performance measure data and get the same results.

3. Analyze the Performance Measure data for trends and significant changes

a. Use Statistical Process Control as the criteria to determine if trends and changes are occurring.

If no significant changes are occurring (the process is stable), determine if the performance measure is at an acceptable stable value. Management Theories / Criteria to apply:

- Continual Improvement
- "Zero Defects"
- Risk vs. Benefit Analyses (Taguchi Loss Curve, Probability Risk Assessment)
- Cost-Benefit Analysis
- Comparison against Benchmark (other companies, INPO guideline)

If a statistically significant change occurs, determine "WHY". Based upon the "why" and costs of action vs. inaction, take corrective actions (if the performance measure change was in a negative direction), reinforcing actions (if performance measure change was positive), or no action.

b. If a current process is stable, and a performance change is needed, the PROCESS must be changed.

- Study the process and performance measure data
- Using process improvement tools, root cause analyses, re-engineering, value engineering; develop changes to be made, and the implementation plan.
- Predict the benefits to be gained from the implementation. This prediction MAY be used as a "goal".
- Following implementation, assess for impact of the process change in the performance measure.
- Use Statistical Process Control and/or comparison against the goal as the criteria to determine success of the implementation.
- Review the Business Objective for impact of the change

4. Continual re-evaluation of Business Objectives and their Performance Measures is needed.

Business Objectives need to be changed if the customer's needs change, or if the product can be replaced with a superior product.