Revision 0

PPA AP-907-001-001
Procedure Performance Metrics

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PPA AP-907-001-001, Revision 0, Procedure Performance Metrics

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Approved By Bruce Mills, PPA Chairman

Notice

REVISION SUMMARY
DESCRIPTION
New PPA document taken from a White Paper developed in 2013. This document supplements PPA AP-907-001, Procedure Process Description.

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1.0 PURPOSE

1. This standard establishes a risk based set of Procedure Program Key Performance Indicators (KPIs) and Key Performance Measures (KPMs) in support of efficiently developing and maintaining quality procedures.

2.0 SCOPE

1. This document supports PPA AP-907-001, Procedure Process Description and provides a standard set of measures to be applied by all adopting facilities along with basis for the measures presented.

3.0 DEFINITIONS

1. **Emergent:** A request for a procedure change or new procedure that is identified within 30 days of when the procedure is needed.

2. **Key Performance Indicators (KPIs) - Procedures:** A measure of how well a facility is doing on achieving excellence in procedure development and maintenance. These indicators provide the management team with important performance information and allow stakeholders to understand the performance level of the Facility Procedure Group.

3. **Key Performance Measures (KPMs) - Procedures:** A measure that provides additional supporting information at the facility, department, or group level in support of the KPIs and overall procedure program health.

4. **Library:** A specific grouping of facility procedures.

5. **Performance Measure:** Standards of measurement by which efficiency, performance, progress, or quality of a plan, process, or product can be assessed.

6. **Priority Backlog:** Total quantity of Procedure Change Requests (PCRs) of Priority 1a, 1b, 2a, and 2b.

7. **Priority Level:** The designator used for ranking a procedure change request (PCR) based on risk.

8. **Procedure Change Request (PCR):** A request to alter or develop a procedure (includes technical and administrative procedures).

9. **Risk:** The effect of uncertainty on objectives, whether positive or negative.

10. **Total Backlog:** Total quantity of uniquely identified change request (PCRs) within a single tracking System.

4.0 DESCRIPTION

4.1 Background Information

1. Procedures are one of the key tools used by management and personnel to manage, operate, monitor, and maintain facilities, equipment, and personnel.

    a. Procedures are a major investment and are treated as an asset on company ledgers.

2. Personnel are trained to implement procedures to achieve safe reliable conduct of daily business.

    a. Procedures provide the instructions necessary for an inexperienced and qualified user to successfully complete the intended task with no direct supervision.

3. A procedure process is established to develop and maintain a facilities procedures. PPA AP-907-001, Procedure Process Description, outlines the standard elements of a good procedure program.

4. The quality of a procedure can be measured by its ability to direct performance of task(s) in a reliable and predictable manner for successful execution.

    a. Measures are derived from many different feedback mechanisms (e.g., lessons learned from usage, user input, reviews, training, project requirements).

    b. The resulting measures are tools for continuous improvement that permit assessing key aspects of procedure quality and process efficiency.

    c. For unfavorable trends, action plans are developed to correct an adverse trend.

5. Depending upon complexity, a large quantity of procedures may be needed to maintain and operate a facility or business unit.

    a. Maintaining a large library of procedures requires an effective change process that implements the required changes in risk informed sequence.

    b. The process must be sensitive to the needs of the business and respond to those needs in a timely manner.

6. A measures system for a procedure program aids in accomplishing development and maintenance of quality procedures. A key goal of a measures system should be to focus efforts toward risk significant work.

a. The measures system provides the management team with tools for routinely assessing procedure program health.

b. Well-designed measures allow for determination of effective and efficient corrective actions in a proactive manner to make program adjustments as needed.

7. Cause based measures assist in evaluating factors that drive the need for potential procedure changes.

a. This will assist in identifying programmatic adjustments that improve procedure quality, reduce rework, improve efficiency, and provide trending of program effectiveness.

8. To assist in creating and maintaining quality procedures, well designed measures monitor and quantify quality issues associated with the procedure program and procedure library.

a. They also demonstrate how well the procedure change process functions to ensure the end user has a quality procedure when needed.

9. A key objective of this standard is to provide a more diverse set of measures for assessing a procedure program than just total backlog. Historically, total backlog has been the sole indicator that management teams turn to in analyzing procedure program performance. While total backlog can be useful in assessing the full scope of work that the organization has identified and that could be performed against facility procedures, not all proposed work will ultimately be deemed cost effective. Procedures must be developed and maintained in a fiscally responsible manner. Toward that end, this standard focuses on Priority Backlog and Project Backlog as the risk significant work identified through the measures program. Enhancements form a significant percentage of most facility backlogs and while the desire to address the enhancement backlog should remain strong, it is tempered by the need to focus on Priority and Project backlogs.

4.2 Procedure Change Request (PCR) Priority Descriptions

1. The descriptions in this section expand the four levels of PCR priority that are described in PPA AP-907-001, Procedure Process Description.

2. These four fundamental levels establish a risk based approach to PCR management. The enhancements described here provide additional granularity on this risk based approach.

a. P1 - Technically Inadequate or human factors deficiency (procedure needs to be revised to complete the task) and poses a risk to personnel, facility, or regulatory requirements.

(1) If performed as written, would result in violation of regulatory requirements, permits or licenses, damage to critical components, serious personnel injury.

(2) If performed as written, would result in an unplanned entry into a compensatory action (e.g., Technical Specification action statement, operating permits)

(3) If performed as written, would result in a condition with significant adverse consequence or reduction in reliability of components important to facility operation.

(4) If performed as written, would result in a significant adverse impact on facility operations.

(a) P1a - Required immediately

(b) P1b - Not required immediately (must be fixed before next use)

b. P2 - Procedure issues that need to be corrected or resolved and do not meet the definition for P1.

(1) Examples are conditions adverse to quality, modifications, outage changes, and testing program changes, as well as procedure issues that provide a tangible benefit (e.g., time savings, dose savings).

(a) P2a

- Technically inadequate (procedure needs to be revised to complete the task) but does not pose a risk to personnel, facility, or regulatory requirements
- A request for a new procedure that is emergent and was not planned
- A request for a temporary change to a procedure that is emergent and was not planned

(b) P2b - Items that need to be completed to improve the procedure's usability or quality that could result in job delays or brief work stoppages until resolved, but should not result in an error being made (e.g., conditions adverse to quality, time savings, dose savings).

(c) P2c - Procedure changes that are tied to a specific process or date and generally depend upon another approved change being implemented (e.g., engineering change/modification, Technical Specification change, project driven outage changes, test program changes).

c. P3, Enhancement - Items which do not meet the criteria for P1, P2 or P4 that add value but are not required and are not addressing conditions adverse to quality.

d. P4, Editorial - Alteration of the procedure which maintains the original intent, does not change the technical content, and does not alter the method of performance of the procedure.

(1) Examples include correcting titles, names, phone numbers, references, and misspelling.

(2) Alterations to setpoints, or quantitative acceptance criteria shall not be considered editorial changes.

4.3 PCR Assessment Of Drivers

1. Section 4.2 established PCR priorities that are risk based to allow management to focus on the issues that can challenge facility operations.

2. This section continues this focus on risk significant PCRs by outlining a method for evaluating the drivers behind why individual PCRs are needed.

3. Understanding these drivers individually and in aggregate assist in establishing action plans to improve program effectiveness, efficiency, and quality.

4. Assessing these drivers for a specific KPI, arms management with a better understanding of the organizational inputs that impact the procedure library.

a. This creates an opportunity to align either the organizational inputs or the procedure development efforts to achieve the best overall result for the facility.

5. The drivers assigned to a PCR can be broken down a number of different ways. The following are example categories to consider.

a. Procedure Development Issues

(1) Procedure Scoping

- Improperly Identified Change or Missed Procedure Impact for a Modification

(2) Procedure Input Error

- Data Given for Procedure Change was Incorrect from Outside Department

(3) Procedure Writer or Reviewer Error

- Problem with Procedure should have been Corrected by Writer or Reviewer Before Issuing. Inadequate Peer Check or Review

(4) Processing Error

- Procedure did not make it through Electronic Document Management System (EDMS) correctly.

(5) Change Management

- Procedure Conflicts - Correction required because one or more procedures conflict or differ incorrectly from another.
- Overdue or Untimely completion - Procedure Change required for a project, fixed deliverable, or milestone and Not Completed within expected time frame.
- Inadequate Change Management - Procedure Issue identified after implementation due to inadequate Change Management

b. Enhancement Request

(1) Level of Detail and Clarification

- Upgrades, Additional Information, or New Procedure Request

(2) Lessons Learned and Operating Experience (OE)

- Results of Critiques, Training Feedback, Industry Operating Experience

(3) Improved or Changed Methods

- Improvements from Feedback Items including Process Efficiencies
- Temporary Conditions - Equipment Deficiencies, Temp Mod, Special Temporary Situations

c. Process Driven Items

(1) Regulatory Commitments

(2) Voluntary Commitments

(3) Regulatory Requirements

(4) Industry Guidelines

(5) Corrective Actions

- Corrective Action to Prevent Reoccurrence (CAPRs) from Root Cause or Apparent Cause, or other Corrective Actions

(6) Configuration Changes

- Design, License Basis, Process or Programmatic Changes
- Engineering Correspondence or New Procedure Request
- Setpoint, In-Service Inspection (ISI), In-Service Test (IST) changes

4.4 Measures

4.4.1 General Discussion

1. The measures in this procedure are proposed as a standard to be applied by all adopting facilities.

   a. KPIs are the minimum set of measures that should be consistently applied at all adopting facilities. This will allow for a basic level of like comparison of procedure programs across similar facilities.

   b. Adopting as many of these KPMs as apply is recommended. This facilitates a broad exchange of information and learning between facilities.

   c. Each facility should evaluate the measures provided and may need to establish more specific criteria for each threshold. Facility measures should remain consistent with the overall intent of each priority and supporting KPI/KPM.

2. A facility may add Unit or Group level measures for special processes or unique considerations.

3. Each measure should be reviewed monthly and compared to previous months to provide additional information on performance trends.

4. For KPIs, refer to Attachment 1, Procedure Program KPIs.

5. For KPMs, refer to Attachment 2, Procedure Program KPMs.

4.5 Key Elements For Implementing A Procedure Process Measures Program

1. A Procedure Process Measures Program establishes a consistent and standardized process for developing, reviewing, and approving goals, objectives, and measures that support the facilities business plan. This includes the following attributes:

   a. Define responsibilities and accountabilities for developing measures, reporting actual results, and reviewing performance.

   b. Provide guidance for establishing goals or performance levels (Target, Minimum, and Maximum).

   c. Establish a process to initiate corrective actions and develop recovery plans for measures that are not meeting nor are projected to meet target level performance.

   d. Establish a process to identify performance weaknesses and gaps.

   e. Establish a process for periodic oversight reviews of actual results, year-end projections and recovery plans.

   f. Define responsibilities for monthly reporting of Short Term Performance Plan results.

5.0 REFERENCES AND COMMITMENTS

1. Online Business Dictionary - www.businessdictionary.com

2. PPA AP-907-001, Procedure Process Description

Procedure Program KPIs

These KPIs are provided as basic set of measures that all implementing facilities should include in their program. Thresholds provided are examples. Individual facilities will need to set challenging thresholds that drive improvement.

Title	Description	Calculation	Target	Rational	Factors that influence outcome	Activities that will help achieve the target
Procedure Quality - Technical or Human Factor Errors	Description - Indicator of PCRs which represent a high risk to personnel, facility, or regulator requirements.					
	Priority 1 PCRs Generated	(Number of Pri 1 in last 6 months/ 6 months) / # of Units (Note 2)	6 mo rolling average of P1s per unit: ≤1 (GREEN) >1 and ≤2 (WHITE) >2 and ≤3 (YELLOW) >3 (RED)	Low threshold for sustaining quality and ensuring minimal risk to the plant and personnel.	Procedure users proactively identify procedure issues	High quality standards are consistently reinforced through writer's guide. Technical reviews are effective in identifying and correcting inaccuracies.
Procedure Quality - Priority Backlog	Description - Indicator of overall program quality and accomplishes this by summing the percentage of the procedure library that has high or moderate risk pending changes that can be worked without constraints. Priority backlog excludes items that are schedule driven and cannot be worked to completion now. Effective workdown of scheduled items is tracked by milestone driven measures. Items that are Engineering Change or project driven do count as Priority Backlog.					
	Percentage of Total Procedures With Open P1, P2a, and P2b PCRs	(Procedures with P1, P2a, and P2b PCRs / Total Procedure Library) x 100	≤12% of total procedure inventory (GREEN) >12 and ≤18% (WHITE) >18 and ≤25% (YELLOW) >25% (RED)	To ensure backlogs are within manageable inventory.	Adequate procedure writing staff to keep up with demands.	Sufficient procedure support from departments using procedures. Well developed Corrective Actions.
Timeliness - Priority Backlog	Description - Provides an indication of how effective the facility is at addressing Priority Backlog items in a timely manner.					
	Percentage of Total Procedures With Open Priority 1b, 2a, and 2b PCRs exceeding age threshold.	(Procedures impacting Procedure Quality Backlog that have at least 1 P1, P2a, or P2b PCR that is >180 days) / Procedure Library) x 100	<5% of total procedure inventory (GREEN) >5 and ≤10% (WHITE) >10 and ≤15% (YELLOW) >15% (RED)	Timely response to procedure issues promotes strong nuclear safety culture	Timeliness of reviews, staffed to accommodate volume (Note 3)	Support departments aligned to goals

NOTE 1: Any variations on application of Priority Definitions will impact results and make comparisons more difficult.

NOTE 2: Sites that have a common procedure for all units would not levelize this indicator by unit.

NOTE 3: If experiencing issues with timeliness, a site may want to consider adding a timeliness KPI for P1a items until performance improves.

Procedure Program KPMs

The following KPMs are indicators for assessing the procedure process. The KPMs are provided and intended to be used as a menu of analytical tools to be selected by process owners when performing self-assessments of the procedure processes. The expectation is that KPMs will be selected based on the need of the organization. It is a good business practice to have a minimum set of diagnostic measures for each major process area. It is recognized that some current systems may not support measurement of all the diagnostic measures suggested.

Title	Describe the measure that will be used to assess performance	Calculation	Target	What was the rationale for selecting this target value?	Identify factors that significantly influence the outcome of the KPM	Describe activities that will help achieve the target
Input - PCR Generation	PCRs generated in the last month. It is just a volume indicator. No threshold needed. There is no set good value. A low value can be an indication of lack of engagement by users in the PCR process.	Straight count of all PCRs generated in the last month.	Info only	NA - Tracking only	Procedure users proactively identify procedure issues	Reinforcement of procedure use and adherence with users
Output - PCR Completions	PCRs completed in the last month. This is a basic volume indicator to assist in predicting resource allocation when coupled with the other inputs, outputs, and backlog.	Straight count of all PCRs completed in the last month.	Info only	NA - Tracking only	Staffed to accommodate volume, minimize process inefficiencies and wasted effort	Timely reviews and approvals by support departments
Total - Pri 2c Routine Work Tied to a Project or Milestone Date(Projects)	All Priority 2c Open PCRs. Priority 2c items are tied to Engineering Changes, Tech Spec Changes, etc.	Straight count of open P2c PCRs.	Info only	NA - Tracking only	NA - Tracking only	NA - No target

Procedure Program KPMs

Title	Describe the measure that will be used to assess performance	Calculation	Target	What was the rationale for selecting this target value?	Identify factors that significantly influence the outcome of the KPM	Describe activities that will help achieve the target
Total - Pri 3 (Enhancements)	Straight count of all P3 PCRs. This measure provides a indication of the total volume of 'optional' work that has been identified. Often P3 items are tracking tools for organizing procedure work. The total number provides an indicator of potential work scope but is not a reflection of library quality.	Straight count of Priority 3 Open PCRs.	Info only	NA - Tracking only	NA - Tracking only	NA - No target
Total - Pri 4 (Editorial)	This KPM provides a count of low priority editorial items that have been identified. While editorial changes must be tracked to completion they can often be bundled with other higher priority work.	Straight count of Priority 4 Open PCRs	Info only	NA - Tracking only	NA - Tracking only	NA - No target
Total Backlog	All PCRs in system.	Straight count of all PCRs in the system.	Info only	NA - Tracking only	NA - Tracking only	NA - No target
Total Priority Backlog	This KPM provides a count of all high and medium risk significant PCRs in the system.	Straight count of all P1a, P1b, P2a, and P2b PCRs in system.	Info Only.	NA - Tracking only	NA - Tracking only	NA - No target
Total - Emergent Work	Procedure revision required within 30 days of identification.	Straight count of all PCRs identified as emergent in the month.	4 (GREEN) 8 (WHITE) 12 (YELLOW) >12 (RED)	Impacts scheduled work and Procedure Group resource allocation.	NA - Tracking only	NA - No target

Procedure Program KPMs

Title	Describe the measure that will be used to assess performance	Calculation	Target	What was the rationale for selecting this target value?	Identify factors that significantly influence the outcome of the KPM	Describe activities that will help achieve the target
Work Execution Procedure Readiness	Procedures with previously identified issues that impact work execution.	Straight count of Condition Reporting issued identified.	0 (GREEN) 1 (WHITE) 2 (YELLOW) 3 (RED)	In line with online schedule adherence (Verify) Working Group recommendation is to track procedures on hold against work schedule requirements.	Schedule stability, minimal emergent work	Participation by Procedure Leads scheduling process to ensure integration
Work Planning Procedure Readiness - Online	Number of work orders on hold for procedure issues Measure of the integration of the work planning process with the procedure change request processes	Straight weekly count of procedures that will hold up work if not fixed prior to work execution (Procedures with P1b or P2a PCRs at 4 weeks before work in Online Schedule) averaged for the month.	0 (GREEN) 1 (WHITE) 2 (YELLOW) 3 (RED)	Ensure procedures are ready to support scheduled surveillances, maintenance, or plant modifications (e.g., review four weeks prior to work)	NA - Tracking only	NA - No target

Procedure Program KPMs

Title	Describe the measure that will be used to assess performance	Calculation	Target	What was the rationale for selecting this target value?	Identify factors that significantly influence the outcome of the KPM	Describe activities that will help achieve the target
Work Planning Procedure Readiness - Outage Remaining	This KPM works off of the burndown curve measures that are set up to track outage preparation. The percentage of deviation from the burndown curve will provide a measurable indicator for outage readiness.	Percentage of deviation from the published burndown curve for the next refueling outage.	0 (GREEN) +5% (WHITE) +10% (YELLOW) >+10% (RED)	Ensure procedures are ready to support the scheduled outage by the milestone date.	NA - Tracking only	NA - No target
Timeliness - Priority Backlog	Average Age of Procedure Priority Backlog (1a, 1b, 2a, and 2b)	Sum of all P1, P2a, P2b PCR Age in days / Total # of P1, P2a, P2b PCRs	≤90days Green >90 and ≤120 White >120 and <180 Yellow ≥180 Red	Provide a reasonable timeline for completion of this priority of PCR. Time restraints help to drive completion of the related work.	Timely response to procedure issues promotes strong nuclear safety culture	Timeliness of reviews, staffed to accommodate volume

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