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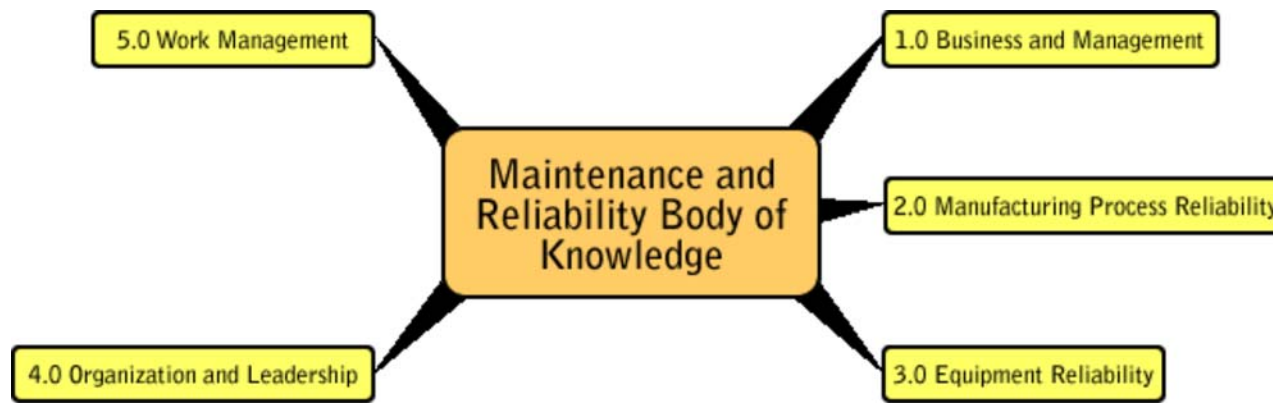


## Introduction

The Society for Maintenance & Reliability Professionals (SMRP) has partnered with American Productivity Quality Center (APQC), the premier benchmarking company recognized worldwide for their benchmarking expertise. SMRP and APQC have jointly developed the Maintenance and Reliability Benchmarking Survey to provide a means for companies to compare their maintenance and reliability performance to others in the same or similar industry. Survey participants receive a report that compares their performance to other companies who complete this survey. All responses are sent electronically to APQC and treated as strictly confidential. In the survey report, only the respondent's data will be identified. The data for other companies will be blinded and normalized; consequently participants will not be able to identify any individual site or company.

## Survey Scope

The survey scope coincides with SMRP's Maintenance and Reliability Body of Knowledge, shown in the diagram below.



1. Business & Management
  - a. Create strategic direction and plan for M&R operations

- b. Administer strategic plan
  - c. Measure performance
  - d. Manage organizational change
  - e. Communicate with stakeholders
  - f. Manage environmental-health-safety risk
2. Manufacturing Process Reliability
    - a. Understand the applicable processes
    - b. Apply process improvement techniques
    - c. Manage effects of change to processes and equipment
    - d. Maintain processes in accordance with applicable standards and regulations
3. Equipment Reliability
    - a. Determine equipment reliability expectations
    - b. Evaluate equipment reliability and identify improvement opportunity
    - c. Establish a strategic plan to assure reliability of existing equipment
    - d. Establish a strategic plan to assure reliability of new equipment
    - e. Cost-justify selected plans for implementation
    - f. Implement selected plans to assure equipment reliability
    - g. Review reliability of equipment and adjust reliability strategy
4. Organization & Leadership
    - a. Determine organizational requirements
    - b. Analyze organizational capability
    - c. Develop the organization structure
    - d. Develop personnel
    - e. Lead and manage people
5. Work Management
    - a. Identify, validate, and approve work
    - b. Prioritize work
    - c. Plan work
    - d. Schedule work
    - e. Execute work
    - f. Document work
    - g. Analyze work and follow-up
    - h. Measure work management performance
    - i. Plan and execute projects
    - j. Use information technologies effectively
    - k. Manage resources and materials

**Included in the survey scope:**

- Maintenance of production equipment
- Maintenance of facilities and utilities

- Maintenance activities
- Operations maintenance activities
- Reliability and related activities
- Assessment/reporting of performance

This survey is designed to be used for a single facility (e.g., plant, site or campus). Aggregating and submitting data for multiple sites will distort the results.

Responses should reflect activity for the most recent fiscal year and should cover the entire fiscal year.

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### **Instructions**

In exchange for completing this survey, you will receive a custom performance report. Information provided to APQC via this survey will be used in accordance with the [Benchmarking Code of Conduct](#), meaning that all information you provide will remain strictly confidential to other benchmarking participants and non-participants alike. This benchmarking study is initiated and sponsored by SMRP, which will be an active participant, but neither they nor any other participant will be able to link survey responses to any specific organization.

### **Cookies, One Browser**

The APQC survey tool uses a "cookie" to associate you to a particular survey instance. Your "cookie" is unique to the computer you used to start the survey, and is the only key that you have to access your data. Should you lose your "cookie", you will be unable to complete the survey and will need special assistance from APQC. Do not delete your APQC cookies until after you have submitted your survey data.

Because this "cookie" is unique to the computer you used to start the survey, other users will be unable to contribute results and data to the survey unless they have physical access to the browser which you used to start the survey.

Visit the [Browser Setup](#) page for more information about configuring your browser to use cookies.

### **JavaScript**

The APQC survey application uses JavaScript for enhanced validation and usability features. In order to complete these surveys, you must use a browser that supports JavaScript, and you must have JavaScript enabled. Visit the [Browser Setup](#) page for more information.

### **Printing**

To print a copy of the entire survey, you should use the "Preview" version of the survey. This view consolidates all of the questions associated with the particular survey onto a single printable browser page. No answers or personal data are contained on the "Preview" version of the survey.

As you navigate through the survey, you may print each page to record your answers. There is no facility to review all of your answers on one page.

### **Definitions**

Each survey has a set of definitions associated with it that are unique to the process grouping covered by the survey. Throughout the survey, questions may have links to survey definitions.

Accurate results depend on a common understanding of the terminology used across survey respondents, so take special care to review the definitions in the glossary thoroughly. Common terms may be defined differently than you expect. When in doubt, contact APQC for guidance.

**Reasonable Numbers**

The survey asks for a number of detailed pieces of information. If you do not have the exact information that a question asks for, please provide a reasonable approximation. If you cannot provide a reasonable approximation, please leave the answer blank. If you are not sure, contact APQC for guidance.

**Reporting period**

All questions in the survey, unless expressed otherwise, request data from the last complete fiscal year of your facility's or business entity's operations. Please be sure to provide the end-date of the fiscal year for which you are providing data.

**Contacting APQC with Questions**

For any questions regarding the survey mechanics, the survey content, or general survey inquiries, please contact Travis Colton via telephone at +1.800.776.9676 (toll free, US only) ext 4722 or +1.713.685.4722, or via Email on [tcolson@apqc.org](mailto:tcolson@apqc.org).

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**General Background Questions**

Where noted, responses in this section pertain to the business entity where the single facility (e.g., building or campus/plant/site) you are covering in this survey resides. For survey purposes, a business entity is defined as an organization that (1) performs significant aspects of the processes for the surveys identified, or (2) is part of a cost or revenue center within the company. The business entity could be either an operating unit or the total enterprise.

Information in this section will provide a means to create relevant peer groups and analysis.

Please enter the name of your organization.

1. Functional position of primary respondent (consider the title most descriptive of the work performed). *(Select only one.)*

2. Please identify the industry for which this survey is being completed. Industries as used in this survey are classified according to the NAICS coding system as defined by the US Census Bureau. Use 4 digit designations by way of the drop down menu.

3. What is the age of plant, site or campus *(in years)*?

4. Please select the item that applies to you or your company.

5. Please indicate the currency (e.g. U.S. Dollar, Euro, Japanese Yen, etc.) used for monetary responses in this survey. This question must be answered to continue the survey.

6. What is your entire organization's total annual revenue? (Note that this question refers to the business entity rather than the facility defined for purposes of this survey.)

7a. What is the total number of all employees (temporary/contracted, part time, and full time—excluding suppliers) at your business entity? This number must be a headcount total not a FTE calculation.

Employee Type	# of Employees
Full-time (internal)	<input type="text"/>
Part-time (internal)	<input type="text"/>
Contractor/temporary	<input type="text"/>
Total	<input type="text"/>

7b. What is the total FTEs at your business entity? To calculate the number of full-time equivalents employed during the year, you must prorate the number of employees and the hours spent performing each process/activity. Assume that a full-time worker represents 40 hours per week. Provide the average number of full-time equivalents employed during the year. Include full-time employees, part-time employees, and temporary workers hired during peak demand periods.

Employee Type	# of FTEs
Internal (full-time and part-time)	<input type="text"/>
External (contractor/temp)	<input type="text"/>
Total	<input type="text"/>

8. Describe the current market conditions in which your business entity has experienced during the most recent fiscal year (*Select only one.*)

- Relatively new, emerging market

- Growth market (expansion)
- Mature market (static)
- Generally in decline (reduction)
- Other (please specify)

9. Provide the end date of the twelve-month period for which your business entity will be providing data. (All questions in the survey, unless expressed otherwise, request data from the last complete fiscal year of your organization's or business entity's operations. Pro-rata data are not acceptable, only actual data should be submitted. Please be sure to provide the end-date of the fiscal year for which you are providing data. Use the date format MM/DD/YY)



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## Section 2: Maintenance Operation Demographics

Please answer all following questions relative to the single facility (e.g., building or campus/plant/site) you are covering in this survey unless directed otherwise.

10. Please indicate percentages of your responses that relate to following maintenance categories (total to 100%). Enter the percentage as a whole number without a percent sign. For example, 80.7% would be entered as 80.7.

Category	Percentage
Production equipment	<input type="text"/>
Facilities	<input type="text"/>
Utilities	<input type="text"/>
Total	<input type="text"/>

11. Which of the following best describes the equipment condition of your facility over the previous three years? (*Select only one.*)

- Improving
- Stable
- Declining

12. Please rank the top three business objectives (shown in the columns) for your facility during the most recent fiscal year.

	Reduced unit cost	Reduced overall maintenance cost	Improved quality	Innovation	Increased capacity	Increased unit volume	Increased <a href="#">Availability</a>	Reduced cycle time	Increased customer responsiveness/service	Smaller batch sizes flexible manufacturing	Other
<b>Rank 1</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Rank 2</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Rank 3</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you selected 'Other', please describe:

13. Which of the following best describes the physical environment of the business entity? *(Select only one.)*

- Multiple facilities globally
- Multiple facilities within a region
- Single facility

14. Which of the following best describes the physical environment of the facility? *(Select only one.)*

- Multiple buildings/units within a campus
- A single building/unit

15. Which of the following best captures the lines of reporting for maintenance resources? *(Select only one.)*

- to corporate maintenance
- to corporate production
- to site maintenance
- to site production
- Other (please specify)

16. What percentage of your production/utility/facility equipment fall into the following age ranges? (Total to 100 percent.)

Age Range	% of Equipment
Less than 5 years old	<input type="text"/>
6 to 15 years old	<input type="text"/>
16 – 25 years old	<input type="text"/>
Greater than 25 years old	<input type="text"/>
Total	<input type="text"/>

17. Please answer the following questions pertaining to the schedule of your production operation?

a. Average # of days per week

b. Average # of hours per shift

6

8

10

12

Other (please describe):

c. Average # of shifts per day

18. How does the total production hours of operation per week compare to 2 years ago? (*Select only one.*)

Same

Less

Greater

19. Please answer the following questions pertaining your maintenance hours of operation?

a. Average # of days per week

Choose one

b. Average # of hours per shift

 6 8 10 12 Other (please describe): 

c. Average # of shifts per day

Choose one

20. Workforce Breakdown (full time equivalents - include salary, hourly and contract employees). In column A., please provide the total number of employees (headcount) for each staff category. In column b., provide the FTE allocation based on the single facility (e.g., building or campus/plant/site) you are responding about in the survey. The totals for column A. must be less than or equal to the total in Question 7a, and the total for column B, must be less than the total in Question 7b.

Work Type	A. # of Employees	B. # of FTEs
Production	<input type="text"/>	<input type="text"/>
Maintenance	<input type="text"/>	<input type="text"/>
Other (Engineering, HR, and etc)	<input type="text"/>	<input type="text"/>
Total	<input type="text"/>	<input type="text"/>

21. What percentage of your maintenance employees are unionized.

Percentage Unionized (%)

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### Section 3: Business and Management

Please provide the following information for your facility as defined in question 14.

Please provide your value responses with no currency marks, thousands separator, or other formatting. Also, a period should be used for a decimal mark, not a comma (e.g., 1325.23, not \$1,325.23).

22. Please provide the following numbers for your operation

Measure	Value
Total Maintenance Costs (in \$)	<input type="text"/>
Replacement Asset Value (RAV) (in \$)	<input type="text"/>
Craft-Wage Headcount (# of people)	<input type="text"/>
Stocked MRO (in \$)	<input type="text"/>

23. Please select the option that best reflects your organization's usage of the following measures:

	Not Used	Only utilized for special studies	Adopted on selected operations (e.g., specific business units/operations representing this survey responses)	Widely adopted (e.g., across most business units/operations representing this survey responses)
Maintenance Unit Cost <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Maintenance Budget Compliance <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

24. For each of the initiatives listed, indicate if it is not being used in your organization (select the 'Not used' button), and if it is being used indicate the level of impact you believe it will have on improving your maintenance performance over the next three years.

	Not Used	1 - No Impact	2 - Little Impact	3 - Moderate Impact	4 - Moderately High Impact	5 - High Impact
Apprenticeship or Technical Skills Training <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Higher Expectations/Better Goals <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improved MRO Management <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improved Preventive (PM) and Predictive Maintenance (PdM) <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

<a href="#">In-sourcing Maintenance</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Knowledge Management System</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Lean Initiatives</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Maintenance/Operation Teamwork</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Maintenance/Operations Training</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>More Capital Improvement</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>More efficient use of current <a href="#">Computerized Maintenance Management System (CMMS)</a></b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Multi-craft Environment</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>New/Modern Equipment/Machines/Automation</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Operations Performing Routine Maintenance</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Outsourcing Maintenance</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Quality Management Initiatives</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Reliability Improvement</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Reliability Information Systems</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Self-directed Work Teams</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Senior Management Support</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Six Sigma</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Upgrade <a href="#">CMMS</a></b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Vendor/Contractor Alliances</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

**Other, Please Specify below:**

[remove answer](#)



If you selected 'Other' above, please give a brief description:

25a. Does your organization use operators to perform equipment maintenance? *(Select only one.)*

Yes

No

25b. If yes, what percentage of your organization's maintenance is performed by operators?

percentage performed by operators (%)

25c. If yes, is this effort captured and recorded as a maintenance cost?

Yes

No

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## Section 4: Manufacturing Process Reliability

Please provide the following information for your facility as defined in question 14.

26. Please provide the following numbers for your operation during the most recent fiscal year:

Measure	Value
<a href="#">Lost Time Incident Rate</a> (# per 200,000 hrs)	<input type="text"/>
<a href="#">OSHA Recordable Rate</a> (# per 200,000 hrs)	<input type="text"/>
Fatalities (#)	<input type="text"/>
<a href="#">First Aids (only if tracked)</a> (# per 200,000 hrs)	<input type="text"/>

27. Please select the option that best reflects your organization's usage of the following measures:

	<b>Not Used</b>	<b>Only utilized for special studies</b>	<b>Adopted on selected operations (e.g., specific business units/operations representing this survey responses)</b>	<b>Widely adopted (e.g., across most business units/operations representing this survey responses)</b>
<a href="#">OOE</a> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">TEEP (Total Effective Equipment Performance)</a> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Availability</a> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Uptime</a> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Idle Time</a> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Utilization Rate</a> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

28. Which of the following maintenance management methodologies does your organization practice and for how long?

<b>Methodology</b>	<b>Methodology Used? (Y or N)</b>	<b>If Yes, # of Years</b>
Traditional Maintenance	<input type="text"/>	<input type="text"/>
<a href="#">Total Productive Maintenance (TPM)</a>	<input type="text"/>	<input type="text"/>
Reliability Centered Maintenance (RCM)	<input type="text"/>	<input type="text"/>
Other (please describe below)	<input type="text"/>	<input type="text"/>

If you selected 'Other' above, please describe:

29. How many environmental regulatory compliance issues (citations) did your facility have last year?

# of citations

## Section 5: Equipment Reliability

Please provide the following information for your facility as defined in question 14.

30. Please provide the following numbers for your operation: (as described in question 14)

Measure	Percentage
<a href="#">Total Downtime (percentage)</a>	<input type="text"/>
<a href="#">Scheduled Downtime (percentage)</a>	<input type="text"/>
<a href="#">Unscheduled Downtime (percentage)</a>	<input type="text"/>

31. Please select the option that best reflects your organization's usage of the following measures:

	Not Used	Only utilized for special studies	Adopted on selected operations (e.g., specific business units/operations representing this survey responses)	Widely adopted (e.g., across most business units/operations representing this survey responses)
<a href="#">MTBF (Mean Time Between Failures)</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">MTTR (Mean Time To Repair)</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">MTBM (Mean Time Between Maintenance)</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">MDT (Mean Downtime)</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">MTTF (Mean Time To Failure)</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

32. Which types of predictive maintenance (PdM) technologies and practices does your organization utilize? In column A, please enter the number of continuous years the technology/practice has been in use. In column B, enter the percentage of applicable equipment that is covered by the technology/practice. In column c, enter the percentage of critical equipment covered. Please enter percentages as a whole number without a percent sign. For example, 80.7% would be entered as 80.7. Please enter a zero (do not leave blank) to indicate that the technology or practice is not used in column A.

Technology/Practice	A. # of Years of Continuous Use	B. % of Applicable Equipment Covered	C. % of <u>Critical Equipment</u> Covered
<a href="#">Infrared Monitoring</a>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<a href="#">Vibration Monitoring</a>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<a href="#">Sound Monitoring (audible)</a>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<a href="#">Airborne ultrasonic</a>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<a href="#">Contact Ultrasonic</a>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<a href="#">Temperature Monitoring</a>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<a href="#">Lube Oil Analysis</a>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<a href="#">Motor Current Analysis</a>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<a href="#">Motor testing (hi-pot, insulation)</a>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<a href="#">Non-destructive Testing (NDT)</a>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<a href="#">Statistical Process Control</a>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<a href="#">Equipment Repair History</a>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<a href="#">Performance Trending</a>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Visual Inspection (no tools)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Other (Please describe below)	<input type="text"/>	<input type="text"/>	<input type="text"/>

If you selected 'Other' above, please describe:

33. What percentage of the following tasks is performed by unit process operators?

Task	Percentage Performed by Unit Process Operators
Lubrication (%)	<input type="text"/>
Cleaning (%)	<input type="text"/>

Equipment Inspections/ Walk-a-rounds (%)	<input type="text"/>
Adjustments (%)	<input type="text"/>
Repairs (%)	<input type="text"/>
Data Collection & Documentation (%)	<input type="text"/>
Other, Please Specify:	<input type="text"/>

34. Which of the following practices/tools does your organization utilize? Please enter the percentage in column B as a whole number without a percent sign. For example, 80.7% would be entered as 80.7.

<b>Tools/Practice</b>	<b>A. Is this Tool Used? (Y or N)</b>	<b>B. % of <u>Critical Systems</u> Covered</b>
Include specific reliability and/or precision maintenance standards in the procurement process	<input type="text"/>	<input type="text"/>
Routine acceptance testing at commissioning or restart after a major overhaul	<input type="text"/>	<input type="text"/>
Routine verification of proper alignment and balancing	<input type="text"/>	<input type="text"/>
Formal maintenance plans and checklists	<input type="text"/>	<input type="text"/>
<a href="#">Reliability Analysis</a> (e.g., Weibull, Reliability Growth)	<input type="text"/>	<input type="text"/>
<a href="#">Root Cause Failure Analysis (RCFA)</a>	<input type="text"/>	<input type="text"/>
<a href="#">Failure Modes and Effects Analysis (FMEA)</a>	<input type="text"/>	<input type="text"/>

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## Section 6: Organization and Leadership

Please provide the following information for your facility as defined in question 14.

35. Please provide the total Maintenance Training Hours (MHRs) for maintenance employees (provided in question 20) for your operation during the past fiscal year: (as described in question 14)

MHRs (# of hours)

36a. Please indicate whether your organization tracks [Rework](#) Percentage.

- Yes
- No

36b. If your organization answered "Yes" to question 36a, please indicate your organization's [Rework](#) Percentage.

rework percentage (%)

37a. Your maintenance organization (including in-house and contractors) at the plant level can be characterized as: *(Select only one.)*

- [Centralized](#)
- [Decentralized](#)
- [Combination](#)

37b. What percentage of your maintenance organization is outsourced?

Maint. Org.	Percentage Outsourced (%)
Centralized	<input type="text"/>
Decentralized	<input type="text"/>

38. Please identify the percentage of employees and contractors performing the following functions in maintenance: (Total to 100 percent.)

Maintenance Function:	Percentage Performing Specific Function (%)
Management (%)	<input type="text"/>
<a href="#">Supervision</a> (%)	<input type="text"/>
Engineering & Technical Support (%)	<input type="text"/>
<a href="#">Planner</a> and Scheduler (%)	<input type="text"/>
<a href="#">Administrative</a> Support (%)	<input type="text"/>
<a href="#">Craft</a> (%)	<input type="text"/>

Total	<input type="text"/>
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39. What percentage of your **maintenance staff** receives formal documented training on an annual basis?

Maintenance Staff Training	Percentage (0-100%)
Management	<input type="text"/>
Supervision	<input type="text"/>
Engineering & Technical Support	<input type="text"/>
<a href="#">Planner</a> and Scheduler	<input type="text"/>
<a href="#">Administrative</a> Support	<input type="text"/>
Craft	<input type="text"/>

40. What percentage of your **operations staff** receives formal documented training on an annual basis?

Maintenance Staff Training	Percentage (0-100%)
Management	<input type="text"/>
Supervision	<input type="text"/>
Engineering & Technical Support	<input type="text"/>
<a href="#">Planner</a> and Scheduler	<input type="text"/>
<a href="#">Administrative</a> Support	<input type="text"/>
Operator	<input type="text"/>

41. How many hours per year of basic skills training in equipment maintenance, reliability and operation does your organization's maintenance [craft workers](#) and operators receive annually?

Basic Skills Training for Equipment Operation and Reliability	# of Maintenance Training Hours Per Year	# of Operations Training Hours Per Year
Maintenance <a href="#">Craft Workers</a>	<input type="text"/>	<input type="text"/>
<a href="#">Supervisors</a>	<input type="text"/>	<input type="text"/>

Engineering & Technical Support	<input type="text"/>	<input type="text"/>
<a href="#">Administrative</a> Support	<input type="text"/>	<input type="text"/>
Operators	<input type="text"/>	<input type="text"/>

42a. Is there a formal functioning skills training and/or apprenticeship program? *(Select only one.)*

- Yes
- No

42b. If yes to above, how many employees complete the program per year?

Employee Discipline	# of Employees
Mechanical crafts	<input type="text"/>
Electrical/Instrumentation crafts	<input type="text"/>
Multi-craft	<input type="text"/>

43. Please indicate whether your organization tracks maintenance turnover rate (attrition) in the following categories? Enter the percentage in column B as a whole number without a percent sign. For example, 80.7% would be entered as 80.7.

Maintenance Function	A. Track? (Y or N)	B. Annual Attrition Rate (as a %)
Management	<input type="text"/>	<input type="text"/>
Supervision	<input type="text"/>	<input type="text"/>
Engineering & Technical Support	<input type="text"/>	<input type="text"/>
<a href="#">Planner</a> and Scheduler	<input type="text"/>	<input type="text"/>
Administrative Support	<input type="text"/>	<input type="text"/>
Craft	<input type="text"/>	<input type="text"/>

44. Is there a succession plan in place for your maintenance staff?

	Yes	No
<b>Management</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>
<b>Supervision</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>
<b>Engineering &amp; Technical Support</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>
<b>Planner and Scheduler</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>
<b>Administrative Support</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>
<b>Craft</b> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>

45. Which certifications or licenses are held by employees at this location?

Certification	# of Employees
SMRP - Certified Maintenance & Reliability Professional (CMRP)	<input type="text"/>
State - Professional Engineer (PE. or P.Eng)	<input type="text"/>
ASQ - Reliability Engineer (CRE)	<input type="text"/>
ASQ - Six Sigma Black Belt (SSBB)	<input type="text"/>
ASQ - Six Sigma Green Belt (SSGB)	<input type="text"/>
ASQ - Certified Manager of Quality (CMQ)	<input type="text"/>
ASQ - Quality Process Analyst (CQPA)	<input type="text"/>
ASQ - Quality Inspector (CQI)	<input type="text"/>
ASQ - Quality Engineer (CQE)	<input type="text"/>
ASQ - Quality Technician (CQT)	<input type="text"/>
ASQ - Calibration Technician (CCT)	<input type="text"/>
STLE - Lubrication Specialist (CSL)	<input type="text"/>
STLE - Oil Monitoring Analyst (OMA)	<input type="text"/>
ICML - Laboratory Lubricant Analyst (LLA I or II)	<input type="text"/>

ICML - Machine Lubricant Analyst (MLA I or II )	<input type="text"/>
ICML - Machine Lubrication Technician (MLT I or II )	<input type="text"/>
VI - Certified Vibration Analyst (CVA I, II, III or IV)	<input type="text"/>
VI - Certified Balancing Technicians (CBT I)	<input type="text"/>
AFE - Certified Plant Engineer (CPE)	<input type="text"/>
AFE - Certified Plant Maintenance Manager (CPMM)	<input type="text"/>
AFE - Certified Plant Superintendent (CPS)	<input type="text"/>
SMRP - Certified Industrial Maintenance Mechanics (CIMM)	<input type="text"/>
ISA - Certified Control Systems Technicians (CCST)	<input type="text"/>
APS - Certified Purchasing Professional (CPP)	<input type="text"/>
APS - Certified Professional Purchasing Manager (CPPM)	<input type="text"/>
IFMA - Certified Facility Manager	<input type="text"/>
IFMA - Facilities Management Professional	<input type="text"/>
Other	<input type="text"/>

If you selected 'Other', please describe:

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## Section 6: Work Management

Please provide the following information for your facility as defined in question 14.

46. Please provide the following values for your operation for the most recent fiscal year for each of the following topics:

Measure	Value
<a href="#">Reactive Work</a> (%)	<input type="text"/>
<a href="#">Proactive Work</a> (%)	<input type="text"/>

<a href="#">Supervisor to Craft Ratio</a> (#)	<input type="text"/>
<a href="#">Planner to Craft Worker Ratio</a> (#)	<input type="text"/>
<a href="#">Total Maintenance Labor Hours</a> (# of hrs)	<input type="text"/>
<a href="#">Overtime % of Maintenance Hours</a> (%)	<input type="text"/>
<a href="#">Stock Outs (Zero Stock)</a> (%)	<input type="text"/>
<a href="#">Maintenance Materials Cost</a> (\$)	<input type="text"/>
Contractor Cost (\$)	<input type="text"/>
<a href="#">Corrective Maintenance Cost</a> (\$)	<input type="text"/>
<a href="#">Preventive Maintenance Cost</a> (%)	<input type="text"/>
<a href="#">Preventive Maintenance Hours</a> (# of hrs)	<input type="text"/>
<a href="#">Condition Based Maintenance Cost</a> (%)	<input type="text"/>
<a href="#">Maintenance Shutdown Costs</a> (\$)	<input type="text"/>
<a href="#">Planned Work</a> (%)	<input type="text"/>
<a href="#">Unplanned Work</a> (%)	<input type="text"/>

47. Please select the option that best reflects your organization's usage of the following measures:

	<b>Not Used</b>	<b>Only utilized for special studies</b>	<b>Adopted on selected operations (e.g., specific business units/operations representing this survey responses)</b>	<b>Widely adopted (e.g., across most business units/operations representing this survey responses)</b>
<a href="#">Actual Cost to Planning Estimate</a> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Actual Hours to Planning Estimate</a> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Planning Variance Index</a> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Planner Effectiveness</a> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<a href="#">Schedule Compliance Hours</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Schedule Compliance Work Orders</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">PM &amp; PdM Compliance</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Standing Work Orders</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Work Order Aging</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Work Order Cycle Time</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Planned Backlog</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Ready Backlog</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">PM &amp; PdM Work Order Backlog</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">PM &amp; PdM Work Orders Overdue</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">PM &amp; PdM Yield</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">PM &amp; PdM Effectiveness</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Indirect to Direct Maintenance Personnel</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Craft Workers on Shift</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Vendor Managed Inventory</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Inactive Stock</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Stock Outs (requested but not available)</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Wrench Time</a> <a href="#">remove answer</a>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<a href="#">Continuous Improvement Hours</a> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Work Distribution by Priority</a> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Annual Labor Hours in Maintenance</b> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Annual labor Hours of Operations Personnel used on Maintenance Activities</b> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>Percentage of Hours Charged to Standing Workorders</b> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Percentage of Work Orders with Kitted Materials</a> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Return On Net Assets (RONA)</a> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Stores Inventory Turns</a> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Corrective Maintenance Hours</a> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<a href="#">Condition Based Maintenance Hours</a> <small>remove answer</small>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

48. Please provide information for the following work practices. In column A indicate if you organization is using the work practice (Y or N). If yes, in column B indicate the number of years the practice has been used.

<b>Work Practice</b>	<b>A. Use? (Y or N)</b>	<b>B. If Yes, # of Years</b>
<a href="#">Autonomous Work Teams</a>	<input type="text"/>	<input type="text"/>
<a href="#">Self-directed Work Teams</a>	<input type="text"/>	<input type="text"/>
<a href="#">Operator Maintenance</a>	<input type="text"/>	<input type="text"/>
Other	<input type="text"/>	<input type="text"/>

49. What percentage of your planned work falls into the following? (Total should equal 100%.)

Task	Percentage of Planned Work (%)
<a href="#">Corrective Work</a>	<input type="text"/>
Preventive not including <a href="#">Corrective Work</a> from PM	<input type="text"/>
Predictive not including <a href="#">Corrective Work</a> from PdM	<input type="text"/>
<a href="#">Continuous improvement</a>	<input type="text"/>
Other	<input type="text"/>
Total	<input type="text"/>

50. How often are both maintenance and operations personnel involved with the scheduling of equipment (for both maintenance and production)? *(Select only one.)*

- Daily
- Weekly
- Monthly

51. What percentage of your maintenance work is planned by the following persons using a formal planning process? (last minute/reactive planning should not be included) (Total to 100 percent.)

Staff Category:	Percentage Planned Using a Formal Planning Process (%)
Maintenance <a href="#">Planner</a>	<input type="text"/>
Maintenance <a href="#">Supervisor</a>	<input type="text"/>
<a href="#">Production Planner</a>	<input type="text"/>
<a href="#">Group Leader</a>	<input type="text"/>
Crafts Person	<input type="text"/>
Other	<input type="text"/>
Total	<input type="text"/>

If you selected 'Other' above, please describe:

52. Please provide the following information regarding stores – inventory:

Measures	Percent
Percentage of inventory line items that are critical spares inventory (based on dollar value) (%)	<input type="text"/>
Percentage of inventory line items that are slow moving or <a href="#">Inactive</a> (i.e., items unused for over three years, based on dollar value) (%)	<input type="text"/>

53. Please provide the following information regarding [line items in inventory](#) :

53a. Total number of line items in inventory.

53b. Please provide the following percentages by category:

Measure	Percent
Percentage of inventory line items you manage (i.e., have on your books) (%)	<input type="text"/>
Percentage of inventory line items on-site that are <a href="#">Vendor Managed Inventory</a> (%)	<input type="text"/>
Percentage of inventory line items you have off-site (%)	<input type="text"/>
Percentage of inventory items that are consignment (vendor owned inventory) (%)	<input type="text"/>

54. What tools do you use to manage maintenance storeroom inventory ([MRO](#))? (Select all that apply.)

- [ABC Classification](#)
- [Economic Order Quantity \(EOQ\)](#)
- Bar Coding Technology
- Inventory Management Reports (system generated)
- Repairable Spares Management Process

- Formal Policies and Procedures
- Storeroom Security (i.e. controlled entry)
- Off-hours Access Process
- Cycle Counting (i.e., periodic random inventory counting)

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You have completed the 2009 SMRP survey. In the spirit of continuous improvement, the remaining four questions are regarding your experience taking the survey. Your responses will help us to provide enhancements to the 2010 survey, so please take a few minutes to provide your input. Once completed, to finalize your submission, you must click the 'Submit' button below. Once submitted, you will not be able to view or change your survey data. Please take a few minutes to review your entry by clicking the 'Previous' and 'Next' buttons to navigate your survey. Thank you for participating.

55. Please indicate the total number of staff hours utilized to gather data and complete the SMRP survey.

Total staff hours

56. From 0 to 100%, indicate the percentage of your responses that were based on 'hard' numbers and not estimates.

% based on hard numbers

57. Which questions in the survey were extremely difficult to answer? For example, data were not readily available and required extensive staff time to gather, or definitions were not clear or different than your organization's definition and required manual manipulation to provide an answer. Please provide a list of question numbers separated by commas (34, 43, 50).

58. Please provide any additional input about the survey that you'd like to share with SMRP.

Previous

Save

Next

Submit

50% complete