

Make Best Practices Your Practices<sup>SM</sup>

# NACE Corrosion Management Practices Survey 2015

### Instructions:

This survey is being conducted by APQC and DNV GL on behalf of NACE International, the Worldwide Corrosion Management Authority. The purpose of this survey is to gather corrosion management practice data across industries and geographies to better understand the cost of corrosion. The survey is structured into sections. Demographics, followed by questions about the Entire Asset Lifecycle (the heaviest question set), Design, Manufacturing and Construction, Operations and Maintenance, and Retirement.

The survey may take some time to complete. Please take as much time as you need. You may save your responses should you need to exit the application and come back to it another time by clicking on the "SAVE" button.

You may print the questions in advance by using the mouse right click button. If you do not know the answer to a question, please leave it blank. For those respondents wishing to remain anonymous you will require a Partner alpha code (see the Glossary link below), plus a numeric code per respondent assigned by your Partner.

There is a "PRINT" icon at the end of the survey that will allow you to print a record of your survey answers prior to submitting the survey online. Do not forget to accept the survey terms at the bottom and press the "SUBMIT" button in order to submit your completed, online response to APQC. Thank you for your participation! The confidentiality of information provided is protected by NACE & APQC's <u>Benchmarking Code of Conduct</u>

For questions about the survey content, please contact Elaine Bowman at <u>Elaine.Bowman@nace.org</u>. For questions about the online survey tool or submission, please contact APQC at NACEImpactStudy@apqc.org.

We have created a Glossary of Terms for this survey, <u>here</u>. It will open in a new window allowing you to reference these definitions while you complete the survey. It is recommended you open the Glossary now.

### **Demographics**

**Note:** Fields marked with an asterisk (\*) are required. All company and personal information will be held confidential. Please use your corporate or business e-mail address for this survey as confidential organization data cannot be sent to anonymous web-based e-mail services. If you wish for your responses to be blinded to the researchers, please enter your Partner code from the "Glossary of Terms", plus the numeric code your Partner assigns you. Thanks for participating.

\* Organization Name or ID Number:

Organization's primary industry? Select one...

What region is your organization located within?

\* What is your corrosion management role within your organization?

 $\checkmark$ 

First name:

Last name:

Work E-mail:

Phone Number:

# Entire Asset Lifecycle

I. Does your corrosion management system ultimately result in the lowest total corrosion cost over the intended life of the asset? (See definition of "total cost" in the glossary.)

- $\Box$  No, little understanding of lifecycle costs
- $\Box$  Yes, but our system is more reactive than proactive (corrosion control is "as needed" vs. "designed in")
- $\Box$  Yes, but improvement is required for complete understanding
- $\Box$  Yes, our system is robust
- Don't know

I.a. If you responded "Yes" to the previous question, please indicate the elements of the asset lifecycle where you are able to measure the cost of corrosion (check all that apply).

- Design
- □ Manufacturing/Construction
- Operations/Maintenance
- □ Retirement
- 2. Does your organization have a corrosion management policy?
  - O No
  - Yes, for part of the asset lifecycle
  - $\bigcirc$  Yes, for part of the organization
  - $\bigcirc$  Yes, for the entire organization and asset lifecycle
- 3. If yes, would you be willing to provide a copy of your corrosion management policy?
  - O Yes
  - O No
- 4. Does your organization have a corrosion management strategy?
  - O No
  - $\bigcirc$  Yes, for part of the asset lifecycle
  - $\bigcirc$  Yes, for part of the organization
  - $\bigcirc$  Yes, for the entire organization and asset lifecycle
- 5. If yes, is your corrosion management strategy linked to your organization's overall strategy?
  - O No
  - $\bigcirc$  Yes, but to technical requirements only
  - $\bigcirc$  Yes, but to business performance only
  - O Yes, comprehensively
- 6. Are your corrosion management plans linked across the entire asset lifecycle (as opposed to stand-alone)?
  - $\bigcirc$   $\qquad$  We do not have corrosion management plans across the entire asset lifecycle
  - $\bigcirc$  We have stand-alone corrosion management plans
  - $\bigcirc$  We have integrated, linked corrosion management plans
- 7. How is your corrosion management performance monitored and reported?
  - $\bigcirc$   $\quad$  Locally, by a corrosion technical professional
  - $\bigcirc$   $\quad$  Locally, by corrosion management and organization management
  - 0

- Within the general/corporate management organization
- At all management levels
- 8. How is corrosion management performance integrated into organizational performance metrics?
  - Corrosion management performance is not integrated into organizational performance metrics (e.g., stand-alone reporting of corrosion management)
  - O Corrosion management is integrated into local reports or dashboards
  - O Corrosion management is integrated into reports or dashboards at all levels
- 9. How is corrosion management compliance with standards, procedures, and regulations monitored?
  - O Corrosion management compliance is not monitored
  - O Corrosion management compliance is monitored at your local organization level only
  - O Corrosion management compliance is monitored at all levels of the organization
  - O Corrosion management compliance is monitored at all levels of the organization and other stakeholders

10. How is corrosion management non-compliance with standards, procedures, and regulations resolved?

- O Corrosion management non-compliance is not tracked to resolution
- O Corrosion management non-compliance is managed by local corrosion management
- O Corrosion management non-compliance is tracked and resolved by the corrosion management organization
- O Corrosion management non-compliance is tracked and resolved by local business management
- O Corrosion management non-compliance is resolved by organization-wide management

11. Are corrosion management responsibilities for the entire asset lifecycle clearly linked to the organizational structure?

- O No
- O Yes

12. How are interactions reflected in the organization structure for those having responsibility for corrosion management defined? (Check all that apply)

- Interactions are informal
- □ Interactions are defined and documented (e.g. RACI charts)
- □ A matrix management scheme is in use
- $\Box$  The matrix extends to external suppliers, vendors, and stakeholders

13. Does a corrosion management group exist to support the asset lifecycle phases across the entire organization?

- A corrosion management group does not exist
- O We have local corrosion management groups only
- A corrosion management group exists and reports to another discipline (e.g., safety, integrity, etc.)
- A corrosion management group exists and reports to the executive team
- 14. Does the corrosion management organization have a role managing suppliers and vendors?
  - O No
  - O Yes, but on an ad hoc basis
  - Yes, as part of our standard practice

#### 15. Are corrosion management roles and responsibilities clearly defined?

- O Few or no corrosion management roles and responsibilities are clearly defined
- O Some corrosion management roles and responsibilities are clearly defined
- O Most or all corrosion management roles and responsibilities are clearly defined

- 16. Are corrosion management roles and responsibilities clearly documented?
  - O No
  - $\bigcirc$  Corrosion management roles and responsibilities are identified, but not fully documented
  - O Corrosion management roles and responsibilities are fully documented
  - O Documentation is available and current
- 17. Are corrosion management roles and responsibilities clearly communicated?
  - $\bigcirc$   $\qquad$  Few or no corrosion management roles and responsibilities are clearly communicated
  - $\bigcirc$   $\qquad$  Some corrosion management roles and responsibilities are clearly communicated
  - $\bigcirc$   $\quad$  Most or all corrosion management roles and responsibilities are clearly communicated
- 18. Are corrosion management roles and responsibilities integrated into work processes?
  - $\bigcirc$  No, corrosion management roles and responsibilities are only integrated into corrosion management processes
  - O Corrosion management roles and responsibilities are referenced from work processes
  - $\bigcirc$   $\quad$  Corrosion management roles and responsibilities are embedded into work processes
- 19. Is there an organizational understanding of corrosion management roles and responsibilities?
  - O There is no organizational understanding of corrosion management roles and responsibilities
  - C There is an organizational understanding of corrosion management roles and responsibilities mostly in the corrosion management organization
  - $\bigcirc$  There is an organizational understanding of corrosion management roles and responsibilities only locally
  - There is an organizational understanding of corrosion management roles and responsibilities across the organization (horizontally and vertically)
- 20. Does your organizational leadership take ownership and engage in corrosion management (check all that apply)?
  - $\hfill\square$  Organizational leadership delegates corrosion management
  - $\hfill\square$  Organizational leadership has limited engagement in corrosion management
  - $\Box$  Organizational leadership is actively involved in corrosion management

21. Are there dedicated corrosion management points of contact for external stakeholder (e.g., regulators, the public, etc.) engagement?

- O There are no dedicated corrosion management points of contact for external stakeholder engagement
- O There are dedicated corrosion management points of contact for external stakeholder engagement, but with multiple points of responsibility (for each stakeholder)
- O There are dedicated corrosion management points of contact for external stakeholder engagement with single point of responsibility (for each stakeholder)

22. Are appropriate and achievable corrosion management staffing levels identified?

- $\bigcirc \qquad \mathsf{Appropriate and achievable corrosion management staffing levels are not identified}$
- O Appropriate and achievable corrosion management staffing levels are identified on an ad hoc, on-demand basis
- $\bigcirc \qquad \mathsf{Appropriate and achievable corrosion management staffing levels are planned}$
- $\bigcirc \qquad \mathsf{Appropriate and achievable corrosion management staffing levels are planned and funded}$
- 23. Is budget for the following allocated to support corrosion management staffing levels (check all that apply)?
  - Training
  - $\Box$  Conference attendance
  - $\Box$  Certifications
  - □ Employee compensation
  - Other

Describe "Other":

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24. Are corrosion management competencies clearly defined?

- O Corrosion management competencies are not clearly defined
- O Clearly-defined corrosion management competencies are part of job descriptions
- O Clearly-defined corrosion management competencies are part of career paths
- 25. Are corrosion management resources (professionals) assigned based on position requirements?
  - O Corrosion management resources are not assigned based on position requirements
  - O Corrosion management resources are assigned based on position requirements on an ad hoc basis
  - O Corrosion management resources are planned
  - Corrosion management resources are periodically reviewed and balanced based upon skills, requirements, and career paths

26. Are required corrosion management competencies specified within work processes?

- $\bigcirc \qquad \mathsf{Corrosion\ management\ competencies\ are\ not\ specified\ within\ work\ processes}$
- O Corrosion management competencies are specified within corrosion management processes only
- O Corrosion management competencies are embedded in work processes (e.g., job aids, work instructions, etc.)

27. Is professional corrosion management and technical training provided?

- O Corrosion management and technical training is not provided
- O Corrosion management and technical training is provided only for internal resources
- O Corrosion management and technical training is provided only for external resources
- O Corrosion management and technical training is provided for both internal and external resources

28. Corrosion management organizational knowledge is captured and transferred via the following mechanisms (check all that apply).

- □ There is no formal approach for corrosion management organizational knowledge capture and transfer
- □ Mentoring programs
- □ Job shadowing
- □ Job rotation
- □ Networking/community of practice
- □ Corporate procedures/standards/work practices
- Other

#### Describe "Other":

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$\checkmark$	

29. Do corrosion management communications within the organization promote the importance of corrosion management practices?

- O Corrosion management communications within the organization rarely or never promote the importance of corrosion management practices
- Corrosion management communications within the organization sometimes promote the importance of corrosion management practices
- Corrosion management communications within the organization frequently or always promote the importance of corrosion management practices

30. Does a process exist to capture employee corrosion concerns and make them visible to decision-makers (vertical communications)?

- O No
- O Yes

31. Are communications between organizational groups responsible for corrosion management actively encouraged?

- O No
- O Yes

32. Is a process for capturing corrosion lessons learned in place?

- O No
- O Yes

33. Are Key Performance Indicators (KPIs) established to demonstrate effectiveness and improvement of corrosion management?

- O No, no KPIs are established to demonstrate effectiveness and improvement of corrosion management
- O Yes, KPIs are established to demonstrate effectiveness of corrosion management
- O Yes, KPIs are established to demonstrate improvement of corrosion management
- O Yes, KPIs are established to demonstrate both effectiveness and improvement of corrosion management

34. Is a process in place to communicate corrosion management practices to external stakeholders (e.g., regulators, vendors, suppliers, etc.)?

- O No
- O Yes

35. Are corrosion management processes well-defined?

- O No
- O Yes

36. Are corrosion management processes well-documented?

- O No
- O Yes

37. Are corrosion management processes well-communicated?

- O No
- O Yes

38. Are corrosion management processes and tools aligned to and embedded in other disciplines (e.g., Health Safety and Environmental, quality, risk, maintenance, integrity, engineering, etc.)?

- O No, corrosion management processes and tools are not aligned to and embedded in other disciplines
- O Yes, corrosion management processes and tools are aligned to other disciplines
- O Yes, corrosion management processes are embedded in other disciplines
- Yes, corrosion management processes are aligned to and embedded in other disciplines

39. Do corrosion management processes include risk management (e.g., identification, assessment, and mitigation of both likelihood and consequences)?

- O No
- O Yes

40. Are corrosion management improvements identified, assessed, and prioritized?

- O Corrosion management improvements are not identified, assessed, and prioritized
- $\bigcirc$  Corrosion management improvements are identified, assessed, and prioritized on an ad hoc basis
- O Corrosion management improvements are identified, assessed, and prioritized as part of our standard process

- 41. Are selected corrosion management improvements funded, staffed, and measured for intended results?
  - O Selected corrosion management improvements are not funded, staffed, and measured for intended results
  - Selected corrosion management improvements are funded, staffed, and measured for intended results on an ad hoc basis
  - Selected corrosion management improvements are funded, staffed, and measured for intended results as part of our standard process
- 42. Do formal organizational management of change processes exist?
  - $\bigcirc$  Formal organizational management of change processes do not exist
  - O Formal organizational management of change processes exist on an ad hoc basis
  - O Formal organizational management of change processes exist as a part of our standard process
- 43. If yes, do your corrosion management improvements comply with the organizational management of change (MOC) process?
  - O Corrosion management improvements do not comply with the organizational MOC process
  - O Corrosion management improvements comply with the organizational MOC process on an ad hoc basis
  - Corrosion management improvements comply with the organizational MOC process is a standard part of our process

44. Does your organization track the following performance measures (check all that apply)?

- □ Failure history
- □ Near miss history
- Cost vs. lifetime
- Total cost
- □ Non-conformance (to corrosion management policies, processes, and standards)
- □ Resolution of incidents
- □ Impact of resolution or improvements
- □ Other

#### Describe "Other":



### Design

- 45. Which of the following does your asset design strategy address with respect to corrosion (check all that apply)?
  - □ Regulatory
  - 🗌 Legal
  - □ Health, Safety, and Environmental (HSE)
  - Societal
  - Design for manufacture/construction
  - $\Box$  The intended life of the asset
  - □ Functional requirements
  - □ Other
  - $\Box$  No asset design strategy exists

#### Describe "Other":

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46. Do you have a corrosion management plan to guide the design for corrosion control and/or mitigation?

- $\bigcirc$  We do not have a corrosion management plan to guide the design for corrosion control and/or mitigation
- O We have a stand-alone corrosion management plan to guide the design for corrosion control and/or mitigation
- The design for corrosion control and/or mitigation is part of the overall design plan

47. Is your corrosion management plan integrated with the overall design plan?

- O The corrosion management plan is not integrated with the overall design plan
- O The corrosion management plan is incorporated and blended into the overall design plan
- O The corrosion management plan is integrated with the overall design plan by reference
- C The corrosion management plan is integrated with the overall design plan via chapter, appendix, or attachments to the overall design plans

48. How do corrosion professionals interact with the design organization?

- Corrosion professionals do not interact with the design organization; we have a stand-alone corrosion management function
- O A central corrosion management professional is allocated to the team
- O Corrosion management is part of the design team
- $\bigcirc$  It is a blend of central and embedded

49. Are corrosion professionals involved in supplier/vendor selection and review processes?

- O Corrosion professionals are not involved in supplier/vendor selection and review
- O Corrosion professionals are involved in supplier/vendor selection and review on an ad hoc basis
- O Corrosion professionals' involvement in supplier/vendor selection and review is part of our standard practice

50. Are corrosion professionals involved in supplier/vendor oversight and management?

- O Corrosion professionals are not involved in supplier/vendor oversight and management
- O Corrosion professionals are involved in supplier/vendor oversight and management on an ad hoc basis
- Corrosion professionals' involvement in supplier/vendor oversight and management is part of our standard practice
- 51. Who is accountable for corrosion design approval?

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- A corrosion professional is NOT accountable for corrosion design approval
- O A corrosion professional is accountable for corrosion design approval
- 52. Is there a communication plan that explicitly addresses corrosion-related information transfer to external stakeholders?
  - C The communication plan does not explicitly address corrosion-related information transfer to external stakeholders
  - C The communication plan addresses corrosion-related information transfer to external stakeholders on an ad hoc basis
  - C The communication plan explicitly addresses corrosion-related information transfer to external stakeholders as part of our standard practice

53. Are corrosion control practices designed into systems and solutions?

- O Corrosion control practices are not designed into systems and solutions
- O Corrosion control practices are sometimes designed into systems and solutions
- O Corrosion control practices are frequently or always designed into systems and solutions

54. Are supplier/vendor corrosion control practices reviewed and approved by a technically qualified corrosion professional?

- O No
- O Yes

55. Do corrosion control practices include design for economics/cost effectiveness?

- O Corrosion control practices do not include design for economics/cost effectiveness
- O Corrosion control practices sometimes include design for economics/cost effectiveness
- O Corrosion control practices frequently or always include design for economics/cost effectiveness

# Manufacturing/Construction

56. Which of the following does your corrosion manufacturing and construction strategy address (check all that apply)?

- □ Regulatory
- 🗌 Legal
- $\Box$  Health, Safety, and Environmental (HSE)
- □ Societal
- Functional requirements
- Total cost
- □ Other
- Does not exist

### Describe "Other":

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57. Do you have a corrosion management plan to guide manufacturing and construction for corrosion control and/or mitigation?

- $_{\bigcirc}$  ~ We do not have a corrosion management plan to guide manufacturing and construction for corrosion control and/or mitigation
- O We have a stand-alone corrosion management plan to guide manufacturing and construction for corrosion control and/or mitigation
- O The plan to guide manufacturing and construction for corrosion control and/or mitigation is part of another manufacturing and construction plan

58. Is your corrosion management plan integrated with all other manufacturing and construction plans?

- $\bigcirc$  The corrosion management plan is not integrated with all other manufacturing and construction plans
- O The corrosion management plan is incorporated and blended into all other manufacturing and construction plans
- $\odot$  The corrosion management plan in integrated with all other manufacturing and construction plans by reference
- $\odot$  The corrosion management plan is integrated with all other manufacturing and construction plans via chapter, appendix, or attachment to the overall manufacturing and construction plan

59. How do corrosion professionals interact with the manufacturing and/or construction organization?

- Corrosion professionals do not interact with the manufacturing and/or construction organization; we have a stand-alone corrosion management function
- $\bigcirc$  A central corrosion management resource is allocated to the manufacturing and/or construction team
- $\bigcirc$   $\quad$  Corrosion professionals are part of the manufacturing and/or construction team
- $\bigcirc$  It is a blend of central and embedded

60. Is a corrosion professional accountable/responsible for commissioning (start-up) approval?

- Accountability for corrosion management acceptance and commissioning approval is not defined
- A corrosion management professional is accountable for corrosion management acceptance and commissioning approval
- O The Corrosion Management group is accountable for corrosion management acceptance and commissioning approval
- 61. Is there awareness and implementation of corrosion control practices by manufacturing/construction groups?
  - There is little to no awareness and implementation of corrosion control practices during manufacturing/construction.
  - 0

There is awareness and implementation of corrosion control practices during manufacturing/construction on an ad hoc basis

 There is awareness and implementation of corrosion control practices during manufacturing/construction as part of our standard practice

### **Operations/Maintenance**

62. Which of the following does your operations and maintenance strategy address with respect to corrosion (check all that apply)?

- □ Regulatory
- 🗌 Legal
- □ Health, Safety, and Environmental (HSE)
- Societal
- □ Asset integrity
- □ Life extension
- Total Cost
- □ Other
- Does not exist

#### Describe "Other":

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63. Do you have a corrosion management plan for operations and maintenance activities?

- O We do not have a corrosion management plan for operations and maintenance activities
- O We have a stand-alone corrosion management plan for operations and maintenance activities
- $_{\bigcirc}$   $_{\rm maintenance}$  The corrosion management plan for operations and maintenance activities is part of another operations and maintenance plan

64. Is your corrosion management plan integrated with all operations and maintenance plans?

- O The corrosion management plan is not integrated with all operations and maintenance plans
- O The corrosion management plan is incorporated and blended into the overall operations and maintenance plans
- O The corrosion management plan is integrated with all operations and maintenance plans by reference
- $\odot$  The corrosion management plan is integrated with all operations and maintenance plans via chapter, appendix, or attachment to overall operations and maintenance plans

65. How do corrosion professionals interact with the operations and maintenance organization?

- O Corrosion professionals do not interact with the operations and maintenance organization; we have a stand-alone corrosion management function
- O A central corrosion management professional is allocated to the operations and maintenance team
- O Corrosion professionals are part of the operations and maintenance team
- It is a blend of central and embedded

66. Who is accountable for corrosion control monitoring, maintenance scheduling, and performance?

- O Accountability for corrosion control monitoring, maintenance, scheduling, and performance is not defined
- A corrosion management resource has accountability for corrosion control monitoring, maintenance, scheduling, and performance
- $_{\bigcirc}$   $_{\bigcirc}$  Corrosion management has accountability for corrosion control monitoring, maintenance, scheduling, and performance
- Operations management has accountability for corrosion control monitoring, maintenance scheduling, and performance
- 67. Are corrosion control practices effectively applied?
  - O Corrosion control practices are rarely or never effectively applied within our organization

 $\bigcirc$  Corrosion control practices are frequently or always effectively applied within our organization

68. Are there supplier/vendor corrosion control practices audited and overseen?

- O Supplier/vendor corrosion control practices are not audited and/or overseen
- $\bigcirc \qquad {\sf Supplier/vendor\ corrosion\ control\ practices\ are\ sometimes\ audited\ and/or\ overseen}$
- $\odot$  Supplier/vendor corrosion control practices are frequently or always audited and/or overseen

69. Do you rely on industry consensus standards for corrosion-related practices?

- O No
- O Yes

# Abandonment, Decommissioning, or Mothballing (ADM)

- 70. Does your company have corrosion management asset ADM strategy (check all that apply)?
  - Does not exist
  - □ Regulatory
  - Legal
  - $\hfill\square$  Health, Safety, and Environmental (HSE)
  - Mothball
  - □ Recycle
  - Other

### Describe "Other":



71. Do you have a corrosion management plan for asset retirement (re: safety)?

- We do not have a corrosion management plan
- $\bigcirc$   $\quad$  We have a stand-alone corrosion management plan
- $\bigcirc$   $\quad$  The guidance for corrosion management for ADM is part of another ADM plan

72. Is your corrosion management plan integrated with all asset ADM plans?

- $\bigcirc$   $\quad$  The corrosion management plan is not integrated with all asset ADM plans
- $\bigcirc$  The corrosion management plan is incorporated and blended into the overall asset ADM plans
- O The corrosion management plan is integrated with all asset ADM plans by reference
- O The corrosion management plan is integrated with all asset ADM plans via chapter, appendix, or attachment to the overall ADM plans

73. How do corrosion professionals interact with those responsible for asset ADM activities?

- O Corrosion professionals do not interact with those responsible for asset ADM activities; we have a stand-alone corrosion management function
- $\bigcirc$   $% \ensuremath{\mathsf{A}}$  A central corrosion management professional is allocated to the ADM team
- $\bigcirc$   $\quad$  A corrosion professional is part of the asset ADM team
- $\bigcirc$  It is a blend of central and embedded

74. Who is accountable for corrosion management in preparation for ADM?

- Accountability for ADM is not defined
- O A corrosion management professional is accountable for approval of corrosion management activities in preparation for ADM approval
- A corrosion management group is accountable for approval of corrosion management activities in preparation for ADM approval

75. Does your organization apply corrosion control practices for ADM effectively?

- $\bigcirc$   $\quad$  The organization frequently or always applies corrosion control practices effectively
- $\bigcirc$   $\quad$  The organization sometimes apples corrosion control practices effectively
- $\bigcirc$   $\quad$  The organization rarely or never apples corrosion control practices effectively
- 76. Does the organization audit and oversee suppliers/vendors with respect to corrosion-related ADM issues?
  - O No
  - O Yes

# Additional Items

77. Would your organization be interested in participating in a follow-up discussion with APQC and NACE to discuss corrosion management practices and total cost of corrosion-related practices (resources allocated, etc.) in more detail?

- O Yes
- O No

st Please indicate your acceptance of these terms by clicking the box below.

#### Survey Terms of Use

 $\Box$  Yes, I accept these terms of use.

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