Risk Based Inspection Professional

1. Rbi may include methodologies to assess the effectiveness of the management systems in maintaining

A. Mechanical integrity

B. Total asset integrity

C. Plant integrity

Answer(s): A

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2. Equipment reliability is especially important if leaks can be caused by

A. Secondary failures, such as loss of utilities

B. Primary failures such as leak due to severe corrosion

C. Tertiary failures due to valve gland packing leak

Answer(s): B

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3. Reliability efforts, such as reliability centered maintenance (rem), can be linked with rbi, resulting in an integrated program to

A. Reduce downtime in an operating unit

B. Reduce operating time of a unit

C. To reduce risk by mitigation activities

Answer(s): A

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4. In jurisdictions that permit the application of the API Inspection Codes and standards

A. Rbi should be an acceptable method for setting inspection plans.

B. Rem should be an acceptable method for setting the inspection plans

C. Pha

Answer(s): A

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5. _____to be established to judge acceptability of risk could he an objective of the rbi assessment if such criteria do not exist already within the user's company.

A. Risk criteria

B. Risk plan

C. Risk analysis

Answer(s): A

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6. _____is usually not the primary objective of a rabi assessment, but it is frequently a side effect of optimization.

A. Reducing inspection costs

B. Increasing inspection costs

C. Increasing frequency of inspection programs

Answer(s): A

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7. When the inspection program is optimized based on an understanding of risk, one or more of the following cost reduction benefits may be realized. Except one

A. Ineffective, unnecessary or inappropriate inspection activities may be eliminated

B. Effective, necessary or appropriate inspection activities may be eliminated

C. On-line or non-invasive inspection methods may be substituted for invasive methods that require equipment shutdown

D. More effective infrequent inspections may be substituted for less effective frequent inspections

Answer(s): B

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8. The following are the risks identified by rbi assessment that may be managed by actions other than inspection. Except one

A. Modification of the process to eliminate conditions driving the risk

B. Modification of operating procedures to avoid situations driving the risk

C. Chemical treatment of the process to reduce deterioration rates/susceptibilities

D. Identifying and detecting deterioration and predicting future deterioration states with advanced inspection technique(s)

Answer(s): D

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9. For qualitative rbi analysis it us important to establish a set of rules to assure consistency in

A. Categorization or classification

B. Segregation

C. Ranking

Answer(s): A

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10. Generally, a qualitative analysis using broad ranges requires a _____from the user than a quantitative approach.

A. Higher level of judgment, skill and understanding

B. Lower level of judgment, skill and understanding

Answer(s): A

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11. The models are evaluated _____to provide both qualitative and quantitative insights about the level of risk and to identify the design, site, or operational characteristics that are the most important to risk

A. Probabilistically

B. Statistically

C. Linearly

D. Logically

Answer(s): D

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12. Potential source of errors in rbi analysis regarding data quality are the following except

A. If the base line thickness were not performed the nominal thickness may be used for the original thickness

B. If original thickness not available, averaged ut thickness readings may be used

C. If the original thickness not available, maximum ut thickness readings may be used

Answer(s): A

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13. The following assumption can be made that significantly impact the calculated corrosion rate early in the equipment life

A. If the base line thickness were not performed the nominal thickness may be used for the original thickness

B. If original thickness not available, averaged ut thickness readings may be used

C. If the original thickness not available, maximum ut thickness readings may be used

Answer(s): A

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14. _____may result in the calculated corrosion rate appearing artificially high or low.

A. Clerical error

B. Measurement error

C. Inspector error

D. Ut scanning

Answer(s): B

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15. The data validation step stresses the need for a knowledgeable individual.

A. To comparing data from the inspections to the expected deterioration mechanism and rates

B. To compare the results with previous measurements on that system

C. Similar systems at the site or within the company or published data

D. All of the above

Answer(s): D

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16. The amount and type of codes and standards used by a facility can have

A. Significant impact on rbi results

B. No impact on rbi results

C. Less significant impact on rbi results

Answer(s): A

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17. Who should be consulted to define the equipment deterioration mechanisms, susceptibility and potential failure modes?

A. A metallurgist or corrosion specialist

B. A metallurgist and corrosion specialist

C. A metallurgist only

D. Corrosion specialist only

Answer(s): A

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18. _____are the primary inputs into the probability of failure evaluation.

A. The deterioration mechanisms, rates and susceptibilities

B. Loss of containment f fluid

C. Fluid toxicity and its concentration

D. Damage mechanisms and its severity

Answer(s): A

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19. Is key to performing deterioration mechanism identification

A. Understanding equipment operation and the interaction with the chemical and mechanical environment

B. Understanding equipment operation and process upsets

C. Understanding equipment operation and its safety protective measures

Answer(s): A

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20. Who can provide useful input (such as the spectrum of process conditions, injection points etc.) To aid materials specialists in the identification of deterioration mechanisms and rates

A. Process specialists

B. Plant operation specialists

C. Asset integrity experts

D. Inspection engineers

Answer(s): A
