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練習題

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Exam : API-SIRE

**Title : Source Inspector Rotating
Equipment**

Version : DEMO

1. During a Factory Acceptance Test (FAT) for a centrifugal pump, it was observed that the pump was vibrating at higher amplitudes than specified. Upon investigation, it was determined that the misalignment between the motor and the pump was the cause. As a source inspector, what should be your next step to ensure the issue is resolved properly before acceptance?

- A. Recommend stopping the test and ask the vendor to realign the equipment.
- B. Document the issue and proceed with the test to analyze other parameters.
- C. Request recalibration of the vibration sensors.
- D. Approve the equipment as it is, since misalignment is a minor issue.
- E. Suggest replacing the motor with a new one immediately.
- F. Insist on proceeding with the test to check if the issue resolves itself.

Answer: A

Explanation:

As a source inspector, ensuring the equipment meets the specified performance criteria is crucial. Misalignment can lead to excessive wear and premature failure, making it imperative to address before proceeding with further testing. By recommending stopping the test and realigning the equipment, you ensure the issue is corrected, thus avoiding further complications. Documenting and addressing the problem also emphasizes the importance of adhering to quality standards and ensures the equipment operates within acceptable limits.

2. Which of the following strategies is most effective in minimizing erosion in rotating equipment used in slurry pumping applications?

- A. Reducing the slurry concentration
- B. Applying thermal insulation to the pump casing
- C. Installing vibration dampeners
- D. Increasing the rotational speed of the pump
- E. Using harder materials for the pump components
- F. Increasing the diameter of the impeller

Answer: E

Explanation:

Using harder materials for pump components is a highly effective strategy for minimizing erosion in slurry pumping applications. Harder materials can better withstand the abrasive action of solid particles in the slurry, reducing the rate of material loss and extending the lifespan of the components. While other strategies, such as reducing slurry concentration or changing operational parameters, can also help, selecting materials with higher hardness and wear resistance provides a direct solution to the problem of particle-induced erosion. This approach addresses the root cause by enhancing the component's ability to resist abrasive wear.

3. During a routine inspection closeout for a high-speed turbine, the source inspector notices that one of the components was replaced with an alternative part not originally specified in the design. This part has a slightly different specification but is claimed to be equivalent by the supplier. The inspector is required to document this deviation before finalizing the inspection report.

What is the most appropriate action for the inspector to take to ensure compliance with the API SIRE guidelines?

- A. Document the deviation and proceed without further action.

- B. Accept the component if the supplier provides a verbal assurance.
- C. Ignore the discrepancy if the turbine passed the functional tests.
- D. Request and review a formal deviation approval from engineering.
- E. Reject the part immediately and request the original component.
- F. Replace the part if it is not visually identical to the original.

Answer: C

Explanation:

When faced with a deviation from the original specifications, the source inspector should adhere to the established protocols and ensure that any changes are formally approved. Requesting a formal deviation approval from engineering ensures that all parties are informed and that the substituted part meets the necessary criteria for performance and safety.

4. When conducting an inspection, maintaining impartiality is essential to avoid conflict of interest. The API SIRE code of ethics requires inspectors to prioritize over personal or professional relationships.

- A. Profit
- B. Personal advancement
- C. Safety and quality
- D. Client satisfaction
- E. Industry recognition
- F. Innovation

Answer: C

Explanation:

Prioritizing safety and quality above personal or professional relationships is fundamental to the role of an inspector. This focus ensures that inspections are conducted without bias, and that the outcomes reflect the true condition and safety of the equipment. By adhering to these principles, inspectors uphold the integrity of the inspection process and ensure compliance with industry standards. This approach not only protects the end-users but also reinforces the trust between the inspection body and the client, fostering a culture of quality and safety.

5. During the documentation review phase of a rotating equipment inspection, an inspector is responsible for verifying that all calibration certificates for measuring instruments used during manufacturing are current and valid.

- A. False
- B. True

Answer: B

Explanation:

During the documentation review phase, it is indeed the inspector's responsibility to verify that all calibration certificates for measuring instruments used during the manufacturing of rotating equipment are current and valid. Calibration certificates ensure that the instruments used for measurements during manufacturing are accurate and reliable, which is crucial for maintaining the quality and performance of the equipment. Ensuring the validity of these certificates helps confirm that the equipment has been manufactured to the required specifications and is safe for operation. This step is a vital part of the documentation review process, contributing to the overall integrity of the inspection.