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연습 문제

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1년간 무료 업데이트 제공

Exam : CCQM

**Title : Certified Construction
Quality Manager**

Version : DEMO

1.Which of the following approaches would best assess the alignment of permanent work specifications with a project's quality plan?

- A. Evaluating the integration of technology in the construction processes
- B. Conducting periodic inspections of work progress for adherence to specifications
- C. Reviewing compliance reports against the quality plan
- D. Reviewing corrective actions implemented from previous quality audits

Answer: C

Explanation:

To effectively assess the alignment of permanent work specifications with a project's quality plan, reviewing compliance reports against the quality plan is the best approach. Compliance reports provide documented evidence of whether construction activities meet specified quality requirements.

These reports typically include:

Inspection results

Non-conformance reports (NCRs)

Corrective actions

Material test results

Conformance checklists

Periodic inspections (option B) are important for monitoring progress, but they only capture a snapshot of adherence and may not provide a full compliance picture over time. Similarly, reviewing corrective actions (option D) focuses on past mistakes rather than a comprehensive alignment assessment.

Evaluating technology integration (option A) is more relevant to efficiency rather than quality conformance.

Reference from CQM Documents:

CQM Student Study Guide (USACE/NAVFAC, 2020) – Module 6.3: Documentation (Discusses compliance reports, tracking deviations, and ensuring alignment with quality plans).

Quality Management in Construction Projects (Rumane, 2018) – Chapter 5: Quality Assurance & Quality Control (Emphasizes compliance reports as a tool for verifying adherence to specifications).

DCS QA Manual – Section 4.4: Documents and Records (Details compliance reporting as a key element of quality assurance in construction).

2.What is a key benefit of outsourcing quality control processes to third-party services?

- A. Reducing the need for internal training
- B. Gaining access to specialized expertise
- C. Reducing the responsibilities of the internal quality team
- D. Streamlining processes by minimizing oversight from internal quality teams

Answer: B

Explanation:

Outsourcing quality control (QC) processes to third-party services provides construction companies with significant advantages, primarily by allowing access to specialized expertise. Third-party QC services typically employ highly trained professionals with extensive experience in quality management, testing, and compliance with industry regulations. This expertise can lead to improved accuracy in inspections, adherence to the latest industry standards, and better defect detection, ultimately enhancing construction quality.

Additionally, outsourcing can improve project efficiency and reduce overhead costs associated with

maintaining an internal quality control team. Companies that outsource QC can focus more on core construction activities while ensuring that independent and unbiased quality checks are conducted. These third-party services also help meet regulatory and contractual quality requirements, mitigating the risk of project delays and costly rework.

ASQ Construction Quality Management (CQM)

Reference: Quality Management in Construction Projects explains how external audits and third-party assessments enhance compliance and reduce defects.

CQM Student Study Guide highlights the benefits of an effective QC system in reducing unnecessary costs and improving project outcomes.

DOE & NAVFAC Standards emphasize independent quality assessments as part of ensuring high construction standards.

Would you like more insights on specific third-party quality control certifications and compliance requirements?

3.How does the prequalification process impact the project's risk management strategy?

- A. It provides a framework for emergency responses.
- B. It increases the likelihood of contractor preparedness in supporting project outcomes.
- C. It enables faster implementation of change orders and continuous assessment of project risks.
- D. It facilitates the allocation of resources across project phases.

Answer: B

Explanation:

The prequalification process is a crucial step in construction project management that helps mitigate risks by ensuring that only competent and capable contractors are selected for the project. This process directly contributes to risk management strategies by ensuring that contractors have the necessary experience, financial stability, safety records, and technical expertise to successfully execute the project.

Key Impacts of Prequalification on Risk Management

Enhances Contractor Preparedness and Reliability:

The prequalification process evaluates contractors based on past performance, technical qualifications, and compliance with industry standards.

This reduces the chances of project failures due to contractor incompetence, poor workmanship, or financial instability.

The QA Library on Project Risk Management states that "contractor selection plays a major role in risk mitigation as prequalified contractors bring reliability, financial stability, and compliance with safety and quality requirements".

Reduces Project Delays and Cost Overruns:

Prequalified contractors are more likely to adhere to project schedules and budgets, thereby reducing risks associated with delays and financial overruns.

The Quality Management in Construction Projects guide highlights that risk management in construction projects must focus on delivering work as per the originally accepted scope, schedule, and budget.

Improves Safety and Compliance with Regulations:

Contractors undergo safety performance evaluations, ensuring that they meet required OSHA and industry safety standards.

The Construction Safety Requirements Manual states that subcontractors must comply with the SLAC Injury and Illness Prevention Program (IIPP), which ensures a safe and compliant working environment.

Mitigates Legal and Contractual Risks:

The prequalification process includes a legal and financial assessment to prevent disputes, breaches of contract, and liability issues.

Contractors with a history of contract disputes or litigation can be identified and excluded from the bidding process.

Why Other Options are Incorrect:

Option A (Emergency Response Framework): While risk management includes emergency preparedness, the prequalification process is not primarily focused on this aspect.

Option C (Faster Change Order Implementation): Change order implementation is managed through contract administration and project controls, not through prequalification.

Option D (Resource Allocation Across Phases): Prequalification does not directly affect resource allocation across different project phases, which is typically handled through project planning and scheduling.

ASQ Construction Quality Management (CQM)

Reference: QA Library on Risk Management and Contractor Selection

Quality Management in Construction Projects on Risk Management Strategies

Construction Safety Requirements Manual on Contractor Safety Compliance

4.What is the primary purpose of applying verification processes to design outputs in construction projects?

- A. To confirm that design outputs comply with the specified quality objectives before constructing
- B. To ensure that the design meets all aesthetic requirements set by the client
- C. To validate projects that have high public visibility or critical infrastructure
- D. To accelerate the project timeline by minimizing detailed reviews

Answer: A

Explanation:

The primary purpose of applying verification processes to design outputs in construction projects is to ensure that the design outputs comply with the specified quality objectives before the actual construction phase begins. This process is critical in preventing errors, ensuring regulatory compliance, and maintaining the integrity of the construction project.

Design Verification Process in Construction

Ensuring Compliance with Project Requirements:

Design verification ensures that the project design aligns with the owner's requirements, regulatory codes, and industry best practices.

According to DOE guidelines, "Design verification is a documented process for ensuring that the design and the resulting items comply with the project requirements. Design verification should be performed by technically knowledgeable persons separate from those who performed the design".

Review and Independent Evaluation:

Design verification includes structured, independent reviews by individuals not directly involved in the initial design process. This reduces the risk of overlooked errors or assumptions.

The QA Library states that "design verification should be conducted using design reviews, alternate calculations, qualification testing, and peer review of experimental design".

Documentation and Configuration Control:

Design verification involves maintaining detailed records of design inputs, calculations, design analyses,

and approvals. These records serve as a reference throughout the project lifecycle.

Risk Mitigation and Quality Improvement:

Verification ensures that design assumptions are reasonable and that the appropriate design methods and materials are selected.

The DOE G 413.3-1 guidelines emphasize the importance of “a formalized, structured approach to ensure the reviews are comprehensive, objective, and documented”.

Constructability Review and Value Engineering:

Design verification also assesses whether the design is constructible within the given constraints of time, budget, and material availability.

The Quality Management in Construction Projects guide highlights the importance of reviewing constructability and ensuring that all design aspects are technically and financially viable before proceeding with construction.

Why Other Options are Incorrect:

Option B (Aesthetic Requirements): While aesthetics may be a consideration in some projects, the primary function of verification is to ensure compliance with technical, safety, and regulatory standards.

Option C (High Visibility/Critical Infrastructure): Although verification is particularly important for high-profile projects, it is a standard requirement for all construction projects.

Option D (Accelerating Timeline): While minimizing design errors can improve efficiency, the main goal of verification is quality assurance rather than timeline acceleration.

ASQ Construction Quality Management (CQM)

Reference: DOE O 413.3A & G 414.1-2A on Design Verification

QA Library on Independent Design Review and Verification Process

Quality Management in Construction Projects on Constructability and Value Engineering

5.How should periodic reports be evaluated to ensure they effectively identify quality trends and support waste elimination efforts in a construction project?

- A. By assessing whether the reports are consistently referenced during decision-making meetings to justify strategy changes
- B. By focusing on the number of reports generated each month to ensure continuous monitoring
- C. By verifying whether the reports are easily accessible to the project team and external auditors
- D. By determining whether reports identify areas of waste and inefficiency that can be targeted for improvement

Answer: D

Explanation:

To effectively evaluate periodic reports for quality trends and waste elimination efforts in construction projects, it is crucial to assess their ability to identify inefficiencies and areas for improvement. Reports should not merely serve as documentation but must contribute actionable insights that lead to corrective measures and process enhancements.

Key Evaluation Criteria for Periodic Reports:

Trend Analysis & Waste Identification:

Reports should highlight recurring defects, process inefficiencies, and non-conformances, allowing for targeted interventions.

Effective reports should use run charts, control charts, and histograms to visualize trends and deviations.

Decision-Support & Continuous Improvement:

Reports should inform project management decisions by identifying waste reduction opportunities such as excess material use, rework, and labor inefficiencies.

The Plan-Do-Check-Act (PDCA) cycle and Six Sigma methodologies should be incorporated to improve project quality and cost efficiency.

Comprehensive Data Utilization:

Reports must include updated execution programs, submittal status, procurement logs, and RFI logs, enabling stakeholders to track quality deviations and their impact on project performance.

Assessment of cost implications of defects and rework should be included in periodic reports.

Verification through Independent & Management Assessments:

Quality audits should verify that reports correctly capture trends and areas for corrective actions.

Reports should document process changes implemented due to audit findings, ensuring lessons learned are applied to future projects.

Stakeholder Accessibility & Usability:

Reports should be structured to facilitate easy interpretation by the project team, ensuring that quality concerns and inefficiencies are addressed in real time.

Integrating reports into weekly coordination meetings ensures immediate response to quality issues.

Why Other Options Are Incorrect:

Option A (Decision-Making Meetings Focus):

While referencing reports in meetings is beneficial, the true measure of effectiveness is whether they drive actual process improvements.

Option B (Number of Reports Generated):

The quantity of reports does not equate to quality—only reports that offer meaningful insights and corrective action plans add value.

Option C (Accessibility to Team & Auditors):

Accessibility is important, but effectiveness is judged by the reports' ability to drive improvement, not just availability.

CQM Reference & Standards Applied:

Three-Phase Control System ensures periodic quality evaluation throughout the project lifecycle.

DOE & NAVFAC Quality Management Standards emphasize identifying nonconformities and driving quality improvements based on periodic reports.

QA/QC Best Practices include corrective action tracking, lessons learned integration, and leveraging historical data for future planning.

By ensuring reports actively contribute to waste reduction and process improvements, construction projects can achieve higher quality, reduced costs, and improved efficiency.