Fire Protection Essentials

QA/QC Plan Sample

Good for smaller projects and bid qualifications

*Has All the Essential Elements of a well-founded Quality Control Plan*

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# PROJECT-SPECIFIC FIRE PROTECTION QUALITY PLAN

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B. **KEY ELEMENTS OF THE FIRE PROTECTION QUALITY PLAN**

Key elements of the [CompanyName] Quality Assurance/Quality Control Plan include:

**Quality Management and Responsibilities.** [CompanyName] fully integrates its quality management system into the organizational structure and performance management systems for each project. We:

- Maintain a documented quality system consisting of a quality manual with policies and procedures.
- Tightly control exceptions to the quality system so company standards are applied uniformly to every project.
- Systematically maintains quality system documents and records.

**Quality Control Personnel.** [CompanyName] fully integrates its quality management system into the organizational structure and performance management systems for each project. We:

- Appoint a Quality Manager, Superintendent, and Project Manager to each project, each with well-defined quality responsibilities and the authority to carry them out.
- Have well-defined quality responsibilities for every employee with specific quality responsibilities for key job positions.
- Plan project quality records and documentation that will be maintained.
- Tightly control exceptions to the quality system so company standards are applied uniformly to every project.
- Enforce policies that monitor work conditions before and during work so that quality results are assured.

**Project Quality Coordination and Communication.** [CompanyName] tightly controls the construction process to ensure quality results. We:

- Plan quality communications through meetings, reporting requirements, and points of contact.
- Have a project startup meeting to communicate project goals and expectations.
- Conduct preparatory meetings in advance of each scheduled work task to communicate requirement details and coordinate work activities.

**Quality Assurance Surveillance.** [CompanyName] audits the quality system to assure it is operating effectively. We:
**COMPLIANCE WITH INDUSTRY FIRE PROTECTION STANDARDS**

Codes that may apply to this project include those listed below.

<table>
<thead>
<tr>
<th>Division</th>
<th>Description</th>
<th>Reference Standard No.</th>
<th>Reference Standard Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Flush the piping system with potable water</td>
<td>NFPA 14</td>
<td>Standard for the Installation of Standpipes and Hose Systems</td>
</tr>
<tr>
<td>21</td>
<td>Disinfection of water mains</td>
<td>AWWA C651</td>
<td>Standard for Disinfecting Water Mains</td>
</tr>
<tr>
<td>21</td>
<td>Sprinkler system installation</td>
<td>NFPA 13</td>
<td>Standard for the Installation of Sprinkler Systems</td>
</tr>
<tr>
<td>21</td>
<td>Control and fire alarm wiring installation</td>
<td>NFPA 70</td>
<td>National Electrical Code</td>
</tr>
<tr>
<td>21</td>
<td>Installation of underground piping and fittings</td>
<td>NFPA 24</td>
<td>Standard for the Installation of Private Fire Service Mains and Their Appurtenances</td>
</tr>
<tr>
<td>21</td>
<td>Joints anchoring</td>
<td>NFPA 24</td>
<td>Standard for the Installation of Private Fire Service Mains and Their Appurtenances</td>
</tr>
<tr>
<td>21,22</td>
<td>Installation of High Density Polyethylene (HOPE) Piping</td>
<td>PIP PNSC0036</td>
<td>Installation of High Density Polyethylene (HOPE) Piping</td>
</tr>
<tr>
<td>21,22</td>
<td>Site Preparation, Excavation, and Backfill Specification</td>
<td>PIP CVS02100</td>
<td>Site Preparation, Excavation, and Backfill Specification</td>
</tr>
</tbody>
</table>
I. FIRE PROTECTION WORK TASK QUALITY INSPECTIONS

[CompanyName] identifies a list of work tasks, phases of production, which will be quality controlled.

WORK TASKS SERIES OF INSPECTIONS

Each work Task is subject to a series of inspections; before, during, and after the work is complete. Each inspection verifies compliance with full scope of the relevant specifications; not limited to checkpoints for heightened awareness.

- The initial task-ready inspection occurs when crews are ready to start work and ensures that work begins only when it does not adversely impact quality results.
- Incoming material inspections verify that materials are as specified and meet all requirements necessary to assure quality results.
- Work-in-process inspections continuously verify that work conforms to project specifications and workmanship expectations. Work continues only when it does not adversely impact quality results.
- At completion of the Task an inspection verifies that work, materials, and tests have been completed in accordance with project quality requirements. When appropriate, functional tests are performed.

Inspection results are recoded and maintained as part of the project files.

SPECIAL PROCESS INSPECTIONS

The Quality Manager identifies special processes where the results cannot be verified by subsequent inspection or testing and determines if continuous work in process inspections are required. For these special processes, a qualified inspector continuously inspects the work process.

MATERIAL QUALITY INSPECTION AND TESTS

Material quality inspections and tests ensure that purchased materials meet purchase contract quantity and quality requirements. The Superintendent inspects or ensures that a qualified inspector inspects materials prior to use for conformance to project quality requirements.

The Superintendent ensures that each work task that uses the source inspected materials proceed only after the material has been accepted by the material quality inspection or test.

DAILY QUALITY CONTROL REPORT
J. QUALITY CONTROL OF CORRECTIONS, REPAIRS, AND NONCONFORMANCES

Should a problem occur in the quality of work, we systematically contain the issue and quickly make corrections. Our first action is to clearly mark the item by tape, tag, or other easily observable signal to prevent inadvertent cover-up.

Then we expedite a corrective action that brings the workmanship or material issue into conformance by repair, replacement, or rework. Previously completed work is reinspected for similar nonconformances. In the event that we cannot correct the item to meet contract specifications, the customer will be notified and customer approval of corrective actions is required before proceeding.

Fixing problems found is not sufficient. [CompanyName] systematically prevents recurrences to improve quality. First enhanced controls and management monitoring are put into place to assure work proceeds without incident. Then using a structured problem solving process, [CompanyName] identifies root causes and initiates solutions. Solutions may involve a combination of enhanced process controls, training, upgrading of personnel qualifications, improved processes, and/or the use of higher-grade materials. Follow-up ensures that a problem is completely resolved. If problems remain, the process is repeated.

Nonconformances and their resolution are recorded on a Nonconformance Report form. A Nonconformance Report form exhibit is included in this subsection.
## Nonconformance Report

<table>
<thead>
<tr>
<th>Nonconformance Report</th>
<th>Project ID</th>
<th>Project Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control ID [ProjectNumber]</td>
<td>ProjectName [ProjectName]</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Preparer Signature/ Submit Date</th>
<th>Quality Manager Signature / Disposition Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Description of the requirement or specification

### Description of the nonconformance, location, affected area, and marking

### Disposition

- Replace
- Repair
- Rework
- Use As-is

Approval of disposition required by customer representative? Yes [ ] No [ ]

Customer approval signature /date: __________________________

### Corrective Actions

Corrective actions completed Name/Date: __________________________

Customer acceptance of corrective actions required? Yes [ ] No [ ]

Name/Date: __________________________

### Preventive Actions

Preventive actions completed Name/Date: __________________________
LIST OF INCLUDED INSPECTION FORMS FOR FIRE PROTECTION

FROM CSI DIVISIONS

- Fire Suppression - 21
- Plumbing - 22
- Utilities – 33

FORMS:

- Suppression Water Service Piping
- Fire Pumps
- Fire-Suppression Sprinkler Systems
- Fire-Suppression Standpipes
- Fire-Suppression Water Storage
- Facility Water Distribution
- Plumbing Insulation
- Water Utility Distribution Equipment
### Compliance Verification

| Compliance with initial job-ready requirements |
| Compliance with material inspection and tests |
| Compliance with work in process first-article inspection requirements |
| Compliance with work in process inspection requirements |
| Compliance with Task completion inspection requirements |
| Compliance with inspection and test plan |
| Compliance with safety policies and procedures |

Reported Nonconformances and incomplete items:

- Piping pitched to allow complete drainage
- Piping not placed above electrical panels or switchgear
- Firestops installed at penetrations through fire partitions/fire walls/smoke partitions/or floors
- Penetrations through floor/exterior wall and roof sealed and made watertight
- Piping secured to prevent movement and chafe
- Piping bends and fittings restrained
- System pressure tested and without leaks
- Valves provided with tamper-proof seals
- Wet piping not exposed to freezing conditions
- Fire department connection type verified with Local Fire Department prior to product ordering and installation

### FTQ 2TQ Heightened Awareness Checkpoints

- Piping pitched to allow complete drainage
- Piping not placed above electrical panels or switchgear
- Firestops installed at penetrations through fire partitions/fire walls/smoke partitions/or floors
- Penetrations through floor/exterior wall and roof sealed and made watertight
- Piping secured to prevent movement and chafe
- Piping bends and fittings restrained
- System pressure tested and without leaks
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- Wet piping not exposed to freezing conditions
- Fire department connection type verified with Local Fire Department prior to product ordering and installation

### FTQ Scores and Completion Sign-off

#### Field Mgmt.-91.45.01

**Quality** | 5 | 4 | 3 | 2 | 1 | Notes:
---|---|---|---|---|---|---
**On-Time** | 5 | 4 | 3 | 2 | 1 | Notes:
**Safety** | 5 | 4 | 3 | 2 | 1 | Notes:

Sign and date*: Cell # / ID #: Signed: Date: 

Task has been verified complete and in compliance with contract drawings and specifications except for non-conformances and incomplete items reported above.

### Scale Definitions

- **Quality Score**
  - 5 = 100% NO problems
  - 4 = 1 minor problem
  - 3 = Hotspot or 2-3 minor
  - 2 = 6+ or major problems
  - 1 = Excessive problems

- **On-Time Score**
  - 5 = On Time
  - 4 = Late
  - 3 = Late by 1 day
  - 2 = Late by 2 days
  - 1 = Late more than 2 days

- **Safety Score**
  - 5 = 100% NO problems
  - 4 = 1 minor problem
  - 3 = Hotspot or 2-3 minor
  - 2 = 4+ or major problem
  - 1 = Injury

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