**CONSTRUCTION**

**MANAGEMENT**

**MASTER SPECIFICATIONS**

**DIVISION 1**

**Quality Assurance Requirements for Construction Projects**

|  |
| --- |
| **Level of Use: Reference** |

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| **ISSUE HISTORY** |
| Issue | Date | Pages Affected | Comments |
| 002 | 01/03/05 | All | Format changes only. |
| 003 | 03/10/05 | All | General change. |
| 004 | 07/06/05 | 2 | 1.1.A. 1.1.C |
| 005 | 11/05/05 | 15 | 1.12, 1.12.A, add Exhibit 1, PX-4785 “Contractor Daily Construction Log” |
| 006 | 01/19/06 | All | Replaces previous Index No’s 01400, 01405, 01410 |
| 007 | 11/28/06 | 2 & 3 | Editor Note, Note, 1.3.B, 1.3.C, 1.3.D |
| 008 | 07/03/07 | All | Clarification of NQA-1 versus Non-NQA-1 requirements |
| 009 | 08/17/11 | 4 | Requirement to be on the QSL for “Special Processes” including welding, heat treating, non-destructive examinations, etc. |
| 010 | 11/10/11 | 3, 5, 6, 7, 8, 9, &14 | Update NQA-1 Requirements |
| 011 | 06/21/12 | 5, 9 | Add QSL requirement for Contractor in Section 1.6, clarification of requirement in Part 1 and Extent of Condition reviews for NCR.  |
| 012/U-51129 | 1/10/13 |  | Add new requirement for B&W to conduct review prior to hold point verification. (PER-2013-0849.6) |
| 013/U-51345 | 4/1/14 | 6 | Subcontract individuals authorized to perform independent inspections and sign the inspection forms shall be identified by title in the project specific key personnel organization chart approved by B&W Pantex.  |
| 014U-55430 | 6/23/16 | All | Clarify NQA-1 Project Requirements. Change QSL to QASL. |
| 015U-57343 | 08/11/2017 | 10, 11, 16, 19, 20, 21, 22, 23  | Implement DOE 422.1. Update 2 Section J, Conduct of Operations Requirements |
| **ISSUE HISTORY** |
| Issue | Date | Pages Affected | Comments |
| 016 U-58152  | 01/08/2019  | All  | Clarifications added to most sections. Quality Manager and Quality Representative requirements added. Language on QA and QC added.  |
| 017 U-001158 | 02/28/2020 | All | Address: actions from PER-2019-0039, actions related to E‑PROC-3047 (photos of hidden attributes), Quality representative requirements, hold point for NQA-1 purchases, PSQAP requirements |
| 018U-003108 | 11/23/2020 | All | Address actions from PER-2019-0401; changes related to mitigating the sharing of safety class information (per NEA) and changes in CGD language. |
| 019U-003763 | 05/03/2021 | 6, 9, 10 | Clarification on code weld inspector requirements; Address actions from PER-2021-0033 - changes related to requesting documentation of Supplier’s quality representative be submitted for review and approval |
| 020U-006350 | 09/22/22 | 10 | Added bullet to F 1.: Test results and documentation of the approval of the test results by the responsible authority. |

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# Acronyms List

ACWI Associate Certified Welding Inspector

ASME American Society of Mechanical Engineers

AWS American Welding Society

CGD Commercial Grade Dedication

CMTR Certified Material Test Report

CNS Consolidated Nuclear Security

CWI Certified Welding Inspector

DOE Department of Energy

EOC Extent of Condition

HDPE High Density Polyethylene

M&TE Measuring and Test Equipment

NCR Non-Conformance Report

NQA Nuclear Quality Assurance

PM Project Manager

PSQAP Project-Specific Quality Assurance Plan

QA Quality Assurance

QAP Quality Assurance Plan

QC Quality Control

QASL Quality Approved Suppliers List

RFI Request for Information

S/CI Suspect/Counterfeit Items

SC Safety Class

SCWI Senior Certified Welding Inspector

SME Subject Matter Expert

SOW Statement of Work

SQA Software Quality Assurance

SS Safety Significant

SSC Structures, Systems, and Components

STR Subcontract Technical Representative

SECTION **01400** ‑ **QUALITY ASSURANCE REQUIREMENTS FOR CONSTRUCTION PROJECTS**

[EDITOR:This document is intended for use as a template for projects of any size or classification.]

1. Sections 1.0 through 1.4 apply to all Projects.
2. Paragraph 1.5 applies to Projects affecting nuclear safety Structures, Systems, and Components (SSCs) classified as Safety Class (SC) or Safety Significant (SS). These paragraphs should be reserved, if the scope of the project does not affect SC or SS structures, systems or components.
3. For projects where failure of Contractor activities could result in significant detriment to system, security, safety, personnel, or the environment, the Contractor must be on the Pantex Quality Approved Supplier List (QASL); this includes all safety class/safety significant projects. The decision whether the Contractor should be considered for inclusion on the QASL or not based on the Contractor activities is determined by the Project Team and should be documented.
4. A special process is “a process, the results of which are highly dependent on the control of the process or the skill of the operations, or both, and in which the specific quality cannot be readily determined by inspection or test of the product” (such as welding, metal fabrication).

**[Please contact: Projects Quality for review and/or assistance.]**

## GENERAL

### **[EDITOR:If determined applicable in 3 above]** The Contractor shall be on the Quality Approved Supplier List (QASL) for the scope of work being performed prior to execution of activities.

### **[EDITOR**:**If special processes (as defined in 4 above) are included in this project]** The Contractor must be evaluated and approved by Consolidated Nuclear Security (CNS) Pantex to perform the special processes. Approval must be obtained by the applicable CNS Pantex authority prior to the work being performed. Contractor and/or sub-tier Subcontractor shall be evaluated by the means of an onsite visit at the supplier’s facility and approved by CNS (Supplier Quality) to perform special processes prior to work being performed. Special processes are considered to be welding, brazing, bonding, plating, chemical machining, heat treating, radiographic inspection, ultrasonic testing, and pressure leak testing. These processes shall be performed in accordance with detailed written procedures specifically describing the exact manner in which the processes are to be performed. Code welds shall be inspected to the code requirements by an American Welding Society (AWS) Senior Certified Welding Inspector (SCWI), a Certified Welding Inspector (CWI), or an Associate Certified Welding Inspector (ACWI) working under the direct supervision of a SCWI or CWI.

### The Contractor shall submit a Project-Specific Quality Assurance Plan (PSQAP) to be approved by CNS prior to the start of work. If the Contractor revises the approved PSQAP to address changes in quality requirements, the PSQAP shall be re-submitted with changes indicated for approval. The PSQAP shall clearly illustrate how the Contractor will implement their approved quality program to meet the contract requirements while incorporating the following:

* + - 1. Quality Assurance (QA)/Quality Control (QC) personnel verifying activities affecting quality shall be independent of field construction management and be directly accountable to their senior management. QA/QC personnel shall also have full access to work to perform required QA/QC activities. Therefore, Quality Representatives shall not report to the Construction Project Manager, Superintendent or other any other personnel assigned responsibility for project cost and schedule.
			2. The organizational structure, functional responsibilities, levels of authority, and lines of communications shall be documented and depicted in an organizational chart. The content related to the organization shall align with any other contractor-provided plans (e.g., Construction Management Plan).
			3. The Quality Assurance Plan (QAP) shall include criteria on nonconformance reporting and the Extent of Condition process (See Appendix A) for addressing nonconforming items and/or conditions. The prescribed activities shall address prevention of further processing, delivery, installation, or inadvertent use of nonconforming items until affected organizations are notified and the proposed item disposition, remedial and corrective actions are approved.
			4. Description of QA/QC activities for quality oversight as required by contract requirements and approved quality program. Quality oversight is a tool for ensuring that the work product meets specified requirements and should be embedded in the work processes for optimal effectiveness. Being embedded means that quality oversight is designed into all aspects of work planning, management, performance, validation, verification, documentation, close-out, and product delivery. Therefore, delimiting the quality oversight roles to minimal single points of inspection/evaluation during the work life cycle (i.e., QC) does not meet the intent of providing quality oversight (i.e., QA).
			5. Project-specific Contractor templates/forms which will be used to address contract specification requirements for QA/QC (e.g., field quality control reports, inspection reports, torque verifications).
			6. Describe implementation of the graded approach to quality process as related to the awarded scope of work.

### The Contractor shall implement the PSQAP under the leadership of a QA Manager. The education and experience of the Contractor QA Manager shall be submitted to CNS for documentation, verification and approval of qualifications. The Contractor QA Manager shall:

* + - 1. Be identified by title in the PSQAP;
			2. Be responsible for Quality of the full scope of the project (services, material, installation, documentation and testing);
			3. Have quality control inspection/testing experience which includes:
* planning quality control inspections and tests;
* setting up tests, including preparation and setup of related equipment, as appropriate;
* supervising or maintaining surveillance over inspections and tests;
* supervising and certifying lower level personnel; and
* evaluating the validity and acceptability of inspection and test results.

###  **[EDITOR: For non-SC/SS projects]**

##### AND

##### Meet one of the following:

* High school graduation plus 3 years of related experience managing similar quality assurance and/or quality control program activities, or
* Completion of College level work leading to an associate degree in related discipline plus 1 year of related experience managing similar quality assurance and/or quality control program activities, or
* Graduation from a 4-year college plus 6 months of related experience managing similar quality assurance and/or quality control program activities.

**[EDITOR: For SC/SS** **Projects]**

##### Have work experience with NQA-1 and/or DOE O 414.1D programs/projects which would provide the QA Manager with a fundamental understanding of quality assurance and quality control and their related processes in a nuclear project environment;

##### AND

##### Meet one of the following:

* High school graduation plus 8 years of related experience managing similar quality assurance and/or quality control program activities with at least 2 years associated with relevant nuclear facility quality program, or
* Completion of college level work leading to an associated degree and 5 years of related experience managing similar quality assurance and/or quality control program activities with at least 1 year associated with relevant nuclear facility quality program, or
* Graduation from a 4-year college plus 3 years of related experience in managing similar quality assurance and/or quality control program activities with at least 6 months associated with relevant nuclear facility quality program.

### Onsite/field Quality Representative(s) shall be approved by CNS prior to starting work. Submittals provided by the Contractor shall address the personnel project-specific education, training / qualification and experience required for the roles, responsibilities, and scope of work. The Contractor onsite/field Quality Representative shall:

* + - 1. Be identified by title in the PSQAP.
			2. Have experience commensurate with the project scope, complexity and any special aspect of the project activities to provide reasonable assurance for quality task and oversight responsibilities.
			3. Have requisite knowledge, training, required certification, experience, and skills to successfully comprehend and implement assigned quality roles and responsibilities for the project scope of work.
			4. Maintain independence as appropriate for their responsibilities.
			5. Have knowledge and training on the Contractor’s Quality Program including the requirements for their roles and responsibilities.
			6. Include responsibilities, not limited to, conducting inspections, identifying quality deficiencies, initiating nonconformances, and enforcing quality requirements for Contractor and sub-tier personnel.
			7. Have experience with Measuring and Test Equipment (M&TE) use, calibration, certification and records as applicable for the awarded scope of work.
			8. Have experience and understanding of non-conformance quality contract requirements.
			9. Have graduated high school.

### **[EDITOR: For non-SC/SS projects]**

* + - 1. Have performed 6 months of satisfactory quality control implementation and documentation of inspections or tests that are required to be performed in accordance with documented procedures, acceptable standards, and/or industry practices.
			2. Have knowledge, education and/or experience with implementation of 10 CFR 830 and/or DOE O 414.1D quality standard.

### **[EDITOR: For SC/SS projects]**

### 10. Have experience implementing NQA-1 quality requirements in a field construction quality role.

### 11. Have 2 years of construction quality assurance/quality control field experience implementing and documenting the results of oversight, surveillances, inspections, or tests that are required to be performed in accordance with documented procedures, acceptable standards, and/or industry practices. (NOTE: Submittal shall include evidence of Testing or Capability Demonstration.)

### Contractor submittals shall include turnover of Quality Records (i.e., “Turnover Records”), including a UCN-26580, “Certificate of Conformance,” that attests all contractual requirements were successfully performed by the Contractor. Turnover Records include official records documenting evidence of compliance and completion. Records include Quality Assurance activities and are traceable to associated requirements, items, and activities. Records also include information that changed or altered the base requirements (i.e., Request for Information (RFI), Non-conformance Report (NCR), etc.). Any requirements omitted or otherwise not performed shall also be identified.

* + - 1. The Turnover package shall include records related to:
* Receiving Inspection reports
* Certificate of Conformance
* M&TE
* Training / Qualifications
* Nonconformances
* Procurement of contract-specific materials and equipment (e.g., receiving, transfer, suspect/counterfeit items)
* Inspection Points
* Hold Points
* QA/QC activities required by contract specifications (e.g., field quality control reports)
* Test results and documentation of the approval of the test results by the responsible authority
	+ - 1. The Turnover package is to be sectioned and correlated to contractual requirements / specifications identified (i.e., project DIV specification, project specific specification, commercial graded dedication (CGD), drawing requirements) and reference the documentation/evidence location in the Turnover package. Each document/evidence shall reference the associated specification/requirement. The records shall be authenticated and paginated by Contractor.
			2. The Turnover package may be electronic. Electronic submittals must:

##### Be legible for identifying signatures and information presented,

##### Be in PDF format,

##### Have a minimum 300 dpi x 300 dpi resolution,

##### Be complete, accurate, and oriented so they appear “right reading” to the user when the file is opened, and

##### Be quality-checked to compare to source record for errors.

## MATERIALS AND EQUIPMENT

### Contractor shall procure, inspect, manage, and install/test (as applicable), all materials and equipment per the project-specific, contract requirements. (e.g., items per specification, required pedigree). All purchased materials and equipment shall be endorsed on the Turnover Certification of Conformance.

### For material and equipment having performance specifications or pedigree or testing requirements, the Contractor shall provide objective evidence of compliance of the items to the contract requirements.

### All materials and equipment shall be inspected by the Contractor and verified to be free of known classes of Suspect/Counterfeit Items (S/CI) as defined by the Department of Energy (DOE) and described on their web site for this purpose.

[**http://energy.gov/ehss/policy-guidance-reports/databases/suspectcounterfeit-and-defective-items**](http://energy.gov/ehss/policy-guidance-reports/databases/suspectcounterfeit-and-defective-items)

## INSPECTION POINTS

### The designer of record and/or the applicable CNS function(s) shall list, in the following table, required inspections and associated completion criteria for specific points of quality assurance and/or control.

### The Contractor shall provide 48-hour advance notice in writing for Inspection Points.

### Inspection Points occur at significant junctures during the project but are different from Hold Points. For Inspection Points, the Contractor may proceed without approval from Pantex, provided the Contractor has notified Pantex in writing 48 hours in advance of the Inspection Point.

### Inspection Points are listed in the Table of Inspection Points. Other completion criteria may be identified in project specifications/scope of work and are not exempt from completion if not listed on this table.

### Results of inspections shall be documented, maintained and submitted as project records.

### Inspection points shall include inspections to verify that completed work matches drawings and/or specifications.

[EDITOR: Review Drawings, Technical Specifications and Statement of Work (SOW) to ensure all Inspection Points are identified and listed in the table below.]

| Table of Inspection Points\*\*Work May Proceed After 48 hour Written Notice to CNS\*\* |
| --- |
| **Spec. Section** | **Description** | **Method/Completion Criteria** |
|  |  |  |
|  |  |  |

## HOLD POINTS

### The designer of record and/or applicable CNS function(s) shall list, in the following table, required Hold Points and completion criteria for specific points of quality assurance and/or control.

### Hold Points occur at significant junctures during the project to allow CNS or CNS Representatives (at its option) to witness, review, or conduct inspections or tests for Hold Point activities.

### Hold Points do not relieve the Contractor from its obligation to meet requirements, including acceptance testing and/or inspections cited in project specifications.

### Contractor shall NOT proceed past Hold Points without signature approval by CNS on the Hold Point.

### Hold Point signature approvals shall be documented, maintained and submitted as project records.

### The Contractor shall request a Hold Points meeting be scheduled with the CNS Project Manager (PM), Subcontract Technical Representative (STR), Quality Representative, System Engineering and Engineering/Subject Matter Experts (SME) to assure common understanding of task(s) to be performed. At a minimum, the meeting(s) shall address:

### Personnel performing the task and specific responsibilities associated with the Hold Points.

### The verification method(s) that will confirm completion of the Hold Points (i.e., testing, visual, third party analysis, photographic evidence, etc.).

### The documentation required to provide objective evidence of completion of the Hold Points (i.e., Test Inspection Report, Certified Material Test Report (CMTR), Acceptance Forms, Factory Acceptance Test, photographic evidence, etc.).

### Specifications applicable to the Hold Points.

### Impact to Hold Points from (a) revisions to submittals, (b) changes in CGD requirements and (c) changes resulting from Installation Change Requests and Request for Information.

### When CGD is applicable to the scope of work, review of the CGD requirements facilitated by Nuclear Procurement Engineering to discuss CGD requirements, expectations, how to implement, etc.

### The meeting shall be conducted prior to executing any Hold Points. Delays, damages, or time extensions will not be allowed if the Contractor fails to make this notification.

Meetings for multiple Hold Points may be combined when/if mutual agreement is reached. Multiple Hold Point meetings may be conducted based on the phasing of work activities.

The Contractor shall provide a record of the meeting that will be included in the Project file. This documentation shall include date/time of meeting, location of meeting, names of personnel attending, identification of Hold Points discussed and mutual agreements.

### Hold Points for this project are listed in the Table of Hold Points and or identified in the contract / specifications. Some Hold Points are contingent upon the work activities conducted for the project. The following will be Hold Points as applicable to the awarded work.

**[EDITOR: These items need to be included as applicable to the work. Remove those which are not applicable to the contract. For the items remaining, Hold Points shall be added to the table.]**

### During implementation of the statement of work per accompanying drawings/design specifications, items fabricated by the Contractor that are not qualified by an existing acceptance test (i.e., High Density Polyethylene (HDPE) pipe, Trim Components, etc.), and do not have detailed specification requirements, will require CNS inspection prior to installation. The inspection(s) will be performed to ensure the fabricated items meet the design specifications presented in the contract documents. Criteria for the inspection would be defined based on the requirements for the item as detailed in the contract documents. There is no list of items to be fabricated (unless the Contractor already knows which items it intends to fabricate to the design specifications). If no items are fabricated by the contractor in performance of the contracted work, the hold point referenced in Section 1.3.B need not be performed.

### Hold Points shall be established for systems that require Software Quality Assurance (SQA). The Hold Points will be determined by the software quality level of the system which is documented in Software Manager (SMan).

### Prior to contractor procurements of NQA-1 items to be used in project installations, CNS requires the review and approval of NQA-1 items and the suppliers and/or sources. Contractor shall provide (through the submittal process) a list of NQA-1 items to be purchased (detail as specified in specifications/drawings requirements) and the associated NQA-1 suppliers (supplier and location) for CNS approval.

### Hold points shall include photographic documentation of hidden safety class/safety significant attributes to verify that completed work matches drawings and/or specifications. CNS shall be responsible for collecting photographic evidence unless otherwise stated.

[EDITOR: Review Drawings, Technical Specifications and SOW to ensure all Hold Points are identified and listed in the table below.]

| Table of Hold Points\*\* STOP WORK ACTIVITY – PROCEED ONLY AS DIRECTED BY CNS\*\*48-Hour Written Notification to CNS Required |
| --- |
| **Spec. Section** | **Description** | **Method/Completion Evidence** |
|  |  |  |
|  |  |  |

## MINIMUM QUALITY EXPECTATIONS FOR ALL PROJECTS

### The purpose of this section is to provide the Contractor with the minimum requirements for the implementation of DOE Order 414.1D as it applies to services provided to Pantex Projects. The PSQAP implementation shall be to an approved quality program and shall address the following requirements.

| DOE O 414.1D | Description |
| --- | --- |
| Program  | Specify organizational structure, functional responsibilities, levels of authority, processes, and interfaces for activities affecting quality. Identification of external sub-tiers and related scope of work and quality program requirement flow down.Description of graded approach to quality program and implementation as applicable to the scope of work. |
| Personnel Qualification and Training | Assure qualified/certified personnel perform and oversee work. |
| Quality Improvement | Specify method of review, identification, control, and correction of items, services and/or processes that do not meet requirements (i.e., nonconformance) in Project Specifications. A Nonconformance Report (NCR) shall document all non‑conformances. At a minimum, NCR shall contain:* Unique Id, description of issue, Contractor proposed disposition and prevention of recurrence
* SME / Design Agency documented approval of disposition
* Closure and where applicable, Extent of Condition per Appendix A
* Review and Concurrences of completed NCR by QA (Contractor and CNS)

Contractor shall submit an NCR log with new NCRs issued. |
| Documents and Records | Preparation, use, maintenance, and submittal of completed documents/records.No blocks or signature lines shall be left blank. If no signature or information is required, “NA” must be noted in the block or signature line. In addition, the “NA” must be accompanied by the inserter’s initials.Completed documentation shall be submitted by the Contractor in accordance with Division 1 Spec 01030 (Submittal Requirements). |
| Work Processes | Identification and control of correct and validated items to assure safe and proper usage and that only correct and accepted items are installed. Specify performance of work using approved instruction or procedures.Maintenance of items to prevent damage, loss, or deterioration. Calibrated equipment shall be used for process monitoring or data collection. |
| Design: *(If applicable)* | 1. Sound engineering/scientific principles and appropriate standards are used in design.
2. Incorporate applicable requirements and design bases in design work and design changes.
3. Identify and control design interfaces.
4. Verify or validate the adequacy of design products using individuals or groups other than those who performed the work.
5. Incorporate applicable requirements for temporary/non‑permanent structures (e.g., scaffolding) if not qualified for design activities.
 |
| Procurement | Procure and verify/validate items and services that meet requirements and perform as specified in the Project Specifications, CGD requirements and Statement of Work. Specify how suppliers are evaluated and/or the process implemented to ensure acceptable items and services are provided. |
| Inspection and Acceptance Testing | 1. Inspect and test specified items, services, and processes as specified in Project Specifications, Statement of Work, and/or Procedures.
2. Use and maintain calibrated equipment used for tests, inspections, and process monitoring or data collection.
 |
| Management Assessment  | Assure managers assess their management processes and identify and correct problems that hinder the organization from achieving its objectives.  |
| Independent Assessment  | 1. Plan and conduct independent project assessments to measure item and service quality, to measure the adequacy of work performance, and to promote improvement.
2. Establish and monitor sufficient authority and freedom from line management for independent assessment teams.
3. Ensure persons who perform independent assessments are independent from production activities, technically qualified and knowledgeable in the areas to be assessed.
 |

## SC/SS CONSTRUCTION Projects

### The purpose of this section is to provide the Contractor with requirements and guidance for the implementation of Projects affecting SSC classified as SC or SS.

### SC and SS systems have been identified and designated in the specifications and on drawings provided as part of the project contract.

### The Contractor shall have and implement a quality assurance program that is based upon the American Society of Mechanical Engineers (ASME) Nuclear Quality Assurance (NQA)‑1 2008, with ASME NQA-1a 2009 and ASME NQA-1b 2011 Addenda, *Quality Assurance Requirements for Nuclear Facility Applications*. The requirements applicable to this contract scope of work include:

**[EDITOR: Identify the applicable NQA-1 requirements as applicable to the work. The Project Team shall determine the applicable Requirements for the scope. Remove the Requirements (both Part I and II) which are not applicable.]**

| **NQA-1 2008, NQA-1a-2009 and NQA-1b-2011 addenda** | **Title** |
| --- | --- |
| Part I, Introduction | Introduction |
| Requirement 1 | Organization |
| Requirement 2 | Quality Assurance Program |
| Requirement 3 | Design Control |
| Requirement 4 | Procurement Document Control |
| Requirement 5 | Instruction, Procedures, and Drawings |
| Requirement 6 | Document Control |
| Requirement 7 | Control of Purchased Items and Services |
| Requirement 2 | Identification and Control of Items |
| Requirement 9 | Control of Special Processes |
| Requirement 10 | Inspections |
| Requirement 11 | Test Control |
| Requirement 12 | Control of Measuring and Test Equipment |
| Requirement 13 | Handling, Storage, and Shipping |
| Requirement 14 | Inspection, Test, and Operating Status |
| Requirement 15 | Control of Nonconforming Items  |
| Requirement 16 | Corrective Action |
| Requirement 17 | Quality Assurance Records |
| Requirement 18 | Audits |
| Part II, Introduction | Introduction |
| Subpart 2.1 | Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components for Nuclear Power Plants |
| Subpart 2.2 | Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Nuclear Facilities |
| Subpart 2.3 | Quality Assurance Requirements for Housekeeping for Nuclear Power Plants |
| Subpart 2.4 | Installation, Inspection, and Testing Requirements for Power, Instrumentation, and Control Equipment at Nuclear Facilities |
| Subpart 2.5 | Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete, Structural Steel, Soils, and Foundations for Nuclear Power Plants |
| Subpart 2.7 | Quality Assurance Requirements for Computer Software for Nuclear Facility Applications |
| Subpart 2.8 | Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Items for Nuclear Power Plants |
| Subpart 2.14 | Quality Assurance Requirements for Commercial Grade Items and Services |
| Subpart 2.15  | Quality Assurance Requirements for Hoisting, Rigging, and Transporting of Items for Nuclear Power Plants |
| Subpart 2.18 | Quality Assurance Requirements for Maintenance of Nuclear Facilities |
| Subpart 2.20 | Quality Assurance Requirements for Subsurface Investigations for Nuclear Facilities |

### The Contractor PSQAP shall include language addressing the requirements identified in 1.5.B above.

### The Contractor shall incorporate the CGD requirements which are provided via contract documents.

### All CGD documentation must meet the following requirements:

* + - 1. If measurements or other verification data is pre-printed, the verifier’s initials and date, checkmarks or any other marking is not sufficient as verification documentation. All measurements or other obtained field data must be written and accompanied by the verifiers, initials or signature and date.
			2. Field verification data cannot be transferred from original field verifications forms to a “clean” form. The form completed during installation is the only official record.
			3. All paperwork, including forms developed only for use as an installer aid, must be submitted as part of the project verification documentation.
			4. No blocks or signature lines shall be left blank. If no signature or information is required, “NA” must be noted in the block or signature line. In addition, the “NA” must be accompanied by the inserter’s initials.

### Contractor CGD implementation activities shall be planned, documented and submitted via the submittal process. The Contractor documents shall be approved by CNS prior to procurement and installation of commercial grade items for dedication.

## DEFINITIONS

### **Assembly** – The act or process of building up a complete unit using parts which already in themselves are finished manufactured products.

### **Authenticated Records**

### **Hold Points:**  Contractor certified and CNS verified records documenting activities.  Documents shall be considered authenticated records only if stamped, initialed, or signed by the Contractor’s authorized QA representative(s) identified in the PSQAP and initialed and dated by the project-designated CNS representative verifying the performance of the activity.

### **All Other QA Records:**  Contractor certified records documenting QA activities (including SC/SS installation documentation) in accordance with the approved PSQAP.  Documents shall be considered authenticated records only if stamped, initialed, or signed by the Contractors authorized representative(s) identified in the PSQAP.

### **Commercial Grade Dedication (CGD)** – A process of approving a "commercial quality" item(s) for a nuclear safety-related application using guidelines verifying established critical characteristics by Special Tests and Inspections for acceptance.

### **Fabricate** – To form a manufactured part or component from raw material or stock.

### **Hold Point** – Hold Points occur at significant junctures during the project to provide CNS Pantex or CNS Pantex Representatives (at its option) to witness, review, or to conduct inspections or tests. Hold Points require CNS signature approval to proceed.

### **Inspection Point** – Inspection Points occur at significant junctures during the project but are different from Hold Points in that the Contractor may proceed without approval from CNS Pantex, provided the Contractor notifies CNS Pantex in writing 48 hours in advance of the Inspection Point.

### **Nonconformance** – A deficiency in characteristic, documentation, or procedure that renders the quality of an item or activity unacceptable or indeterminate.

### **Quality Records** – Records containing information regarding how an item, facility or process is designed, manufactured, constructed, installed, operated, or maintained and provides verification these activities were performed in accordance with the applicable requirements or specifications.

## REFERENCES

1. Governing Documents

**[EDITOR: Specify governing documents.]**

1. <https://webapps.cns.doe.gov/LinksMgr/linksMgr?docStatus=APPROVED&docType=DIV&docNum=DIV-01400>
2. ASME-NQA-1A-2008, “Quality Assurance Requirements for Nuclear Facility Applications,” including 2009 and 2011 addenda
3. 10 CFR 830, “Nuclear Safety Management”
4. DOE O 414.1D, “Quality Assurance”
5. Authorizing Documents

**[EDITOR: Specify authorizing documents.]**

1. DIR-0001, “Roles and Responsibilities for the Management and Operation of Pantex Plant”
2. Related Documents

**[EDITOR: Specify related documents.]**

1. Quality Approved Suppliers List
2. Contractor Quality Assurance Plan
3. Forms
4. Generated Forms
5. Related Forms
6. Records
7. Project records documenting CNS signature approval of Hold Points
8. Forms documenting work performance
9. Submittals required by DIV-01400 (e.g., project-specific QAP)
10. Project Turnover Records

# Appendix A

The following is guidance when conducting an Extent of Condition (EOC) review.

1. The EOC review should be tailored to fit the significance of the issue. This is determined while performing a cause analysis, whether that is the Eight Questions for Insight, An Apparent Cause Determination, or an in-depth Cause Analysis using the Causal Factors Chart or other techniques.

2. Review the background and circumstances of the issue.

3. Evaluate for uniqueness, recurrence, and potential or actual consequences.

4. Determine the breadth of facilities and activities that might have similar set-up factors.

5. Consider what might have been inadequate in earlier investigations if this is repetitive.

6. Identify applicability to other activities, processes, equipment, programs, facilities, operations, and organizations.

7. Assure appropriate managers and SMEs are involved in the evaluation.

8. Document findings and any appropriate actions taken or needed.

9. Re-evaluate as necessary.