

## **Management Control Procedure**

## **Inspection for Conformance**

**Idaho  
Cleanup  
Project**

CH2M ♦ WG Idaho, LLC is the Idaho Cleanup Project contractor for the U.S. Department of Energy

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Quality Assurance	Management Control Procedure	For Additional Info: <a href="http://EDMS">http://EDMS</a>	Effective Date: 06/13/12
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\*The current revision can be verified on EDMS.

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## 1. INTRODUCTION

### 1.1 Purpose

This document's purpose is to ensure that inspections are planned, performed, and documented to achieve the necessary level of rigor and assurance that the designated activities, items, materials, and/or equipment meet specified features and/or characteristics, thereby providing the basis for acceptance.

### 1.2 Scope and Applicability

This procedure begins with the review of *design output documents* (see def.) to determine the required inspections and ends with the final review of inspection documentation.

This procedure is applicable to *inspections* (see def.) performed by *independent* (see def.) personnel for acceptance of Quality Level 1, 2, 3, or 4 structures, systems, and components (SSCs; see def.) and Quality Level 1, 2, 3, and 4 items whose governing codes, standards, and regulations require independent inspection, test, or nondestructive examination.

This procedure is applicable during manufacturing, preventative/corrective maintenance, modification, installation, construction, in-service inspection, including subcontractor-furnished materials. Any activities that impact the fit, form, or function, or change, or add to an SSC, must be inspected per the requirements of this management control procedure (MCP).

**NOTE:** *This procedure is supplemented by Technical Procedures (TPR)-6416, "Construction Receipt Inspections Procedure," and TPR-4960, "Receiving Inspection."*

This procedure is not applicable to *monitoring* (see def.) activities performed by operations or maintenance. Examples of monitoring activities would be routine checks of systems, structures, or components to safety basis criteria, including any operator rounds and/or maintenance activities that do not affect fit, form, or function.

This procedure is not applicable to the source or receipt inspection of direct purchased materials and services. Source and receipt inspection of materials and services is defined in MCP-3491, "Acceptance of Procured Materials and Services."

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This procedure is not applicable to the inspections specified by the Owner/User Pressure Vessel Quality Program Manual per Program Requirements Document (PRD)-5, “Boilers and Unfired Pressure Vessels.”

## 2. RESPONSIBILITIES

Performer	Responsibilities
Quality Assurance (QA) Directorate	Ensure a process is in place for developing inspection plans, instructions, and checklists. Provide qualified personnel to perform inspections and tests for conformance.  Ensure certified and qualified inspection personnel are available for a particular work activity or project.
<i>Responsible Engineer (RE)</i> (see def.)	Assist the <i>inspection planner</i> (see def.) or quality engineer (QE) in the preparation of inspection planning packages (IPPs; see def.). Perform and document inspections as indicated on the IPPs.
Cognizant Quality Engineer (hereafter referred to as QE)	Develop and implement inspection plans, instructions, or checklists as required. Prepare and review the IPP. Update electronic databases.
Inspection Planner	Plan inspection work controls, obtaining input from Quality, Operations, Engineering, and Maintenance.
Quality Inspector (QI)	Perform and document inspections on plans and checklists. Ensure all certifications are maintained. Update electronic databases.
<i>Reviewer</i> (see def.)	Review and validate completed documentation.

## 3. PREREQUISITES

3.1 Personnel performing inspections must be independent of the work being inspected, as follows:

Quality Level (Inspection Organization)	Non-Nuclear Facility	NRC-Licensed Facility/Installation or Nuclear Facility (See MCP-2446, Controlling Lists of Nuclear Facilities and Nuclear Facility Managers)
QL-1, 2, 3, or 4	Cannot have performed or directly supervised the work being inspected.	The inspections must be performed by personnel other than those who performed or directly supervised the item being inspected, and who are independent of the organization directly responsible for that item.  These personnel cannot report directly to the immediate supervisor responsible for the item being examined.

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**NOTE 1:** *Quality levels are defined in detail in MCP-540, “Assigning Quality Levels.” Personnel performing inspections must be certified in accordance with MCP-1309, “Inspection Personnel Certification,” MCP-535, “NDE Personnel Certification,” or other approved program/procedures meeting the requirements from PRD-5072, “Personnel Training and Qualification,” and PRD-5081, “Inspection.”*

**NOTE 2:** *Personnel supporting inspection activities by performing data recording or equipment operations under the guidance of a qualified inspector (see def.) are not required to be certified inspectors.*

**NOTE 3:** *When the design code requires a Registered Professional Engineer (RPE) inspection, the RPE is exempt from the requirements of MCP-1309.*

3.2 QE/Inspection Planner: Ensure inspection plans not associated with TPRs or design output/safety basis documents have been approved by the principal inspection/nondestructive examination (NDE) Level III examiner for the inspection discipline addressed.

3.3 QI: Ensure status indicators, such as markings, labels, stamps or tags, or other means (such as travelers, work orders, or inspection records), are used. Tagging, when used, must be in accordance with Steps 4.4.4 and 4.4.5.

3.4 QI: Ensure no inspections are performed without an approved IPP, design drawing, specification, or design change document.

3.5 QE: For subcontractor work activities, ensure the following:

3.5.1 Ensure Potential Issue Reports (PIRs) initiated against the subcontractor’s work activities are forwarded to Project Management or Construction Management for development and implementation of the corrective action plan in accordance with MCP-598, “Corrective Action System.”

3.5.2 Ensure nonconformance reports (NCRs) initiated for nonconformances are assigned to Project Management for disposition in accordance with MCP-598.

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## 4. INSTRUCTIONS

### 4.1 *Inspection Planning* (see def.)

4.1.1 QE/Inspection Planner/RE: Provide applicable codes/standards, inspection and acceptance criteria in design output (see def.) documents and procedures for inclusion in the IPP.

4.1.1.1 Review the *work control documents* (see def.) to determine if a separate IPP is needed, or if the inspection steps can be included in the work control documents.

4.1.1.1.1 IF a separate IPP is required, THEN prepare the IPP Form 414.81, “Inspection Planning Package”; 414.81A, “Inspection Planning Package General Notes”; and/or Form 434.17, “Manufacturing Inspection Record Sheet” (MIRS).

4.1.2 QE: Incorporate all identified activities, items, material, and/or equipment subject to acceptance inspection into the IPP. See Appendix A, “Inspection Planning Guidance,” for further guidance.

4.1.2.1 Consider in-process, in-service, and final inspections required to meet the applicable codes, standards, regulations, permits, orders, and design requirements.

4.1.3 Assign a unique inspection planning number to each IPP. If the IPP is associated with a work order, reference the work order number and retain the IPP with the work order.

4.1.3.1 Check the appropriate box on the IPP (Form 414.81) for Construction, Operations, Maintenance, DOE/RW-0333P, or Other.

**NOTE:** *DOE/RW-0333P refers to a document entitled “Quality Assurance Requirements and Description.” (See References section.)*

4.1.3.2 Identify inspection planning numbers as follows:

Project File No.—discipline code—sequential plan number, for example: 99864-C-01.

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4.1.3.3 Assign discipline codes based on the inspection activity as follows:

**NOTE:** *The discipline code assigned to the IPP has no correlation to the discipline qualifications defined in MCP-1309.*

Civil	C
Utilities	U
Structural	S
Architectural	A
Piping	P
Fire Protection	FP
Mechanical	M
Heating	H
Ventilation	V
Electrical and LSS	E
Instrumentation	I
Receipt	R
Multi-Discipline	X
Source	SO
Telecommunication	T
INTEC Projects	QA

**NOTE:** *Planning for tasks/activities that do not relate to a specific project number (that is, Master Task Agreement) must incorporate the purchase order/requisition/delivery order number/work order or other unique identifier.*

4.1.4 Update the Project QA Log Database with planner identification, requester identification, IPP control number(s), IPP revision, project/task title, and subcontract/purchase order (PO)/work order (WO) number, etc.

4.1.4.1 Designate the IPP status as UNRELEASED.

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- 4.1.5 QE: Consider in-process, in-service, and final inspections required to meet the applicable codes, standards, regulations, permits, orders, and design requirements.
- 4.1.5.1 Incorporate the codes and standards, inspection criteria, and acceptance criteria for inspection of each activity, item, material, and/or equipment.
- 4.1.5.2 Prepare an “Inspection Record Copy” of sketches or drawings for documenting inspections, as applicable.
- 4.1.5.2.1 Maintain this “Inspection Record Copy” in the WO for inspection purposes.
- 4.1.5.2.2 IF, during the work activity, the drawing/sketch is subsequently revised, THEN issue a new “Inspection Record Copy.”
- 4.1.5.2.3 QI: Use the current drawing/sketch for performing the inspection.
- 4.1.5.2.4 QE: Note the IPP number on each of the Inspection Record Copy documents.
- 4.1.5.3 QE: Ensure inspection personnel are provided adequate inspection information, direction, and criteria in documentation provided by other organizations (such as work packages) that will be readily available during inspection activities.
- 4.1.5.4 Ensure inspector(s) are qualified/certified for the inspection(s) to be performed.
- 4.1.5.5 Coordinate with the RE to ensure all requirements are identified and incorporated into inspection planning.
- 4.1.5.6 Specify acceptance criteria by specific reference to a source requirement document.
- 4.1.5.7 WHEN utilizing a specific code or standard for inspection instructions, THEN state the attributes verbatim (including specific code section numbers) or as attached from the code or standard requirement document. Do NOT edit, paraphrase, or interpret source requirements in the planning documentation.

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4.1.6 Identify the inspection method (visual/verify/witness) and procedure/design document to be utilized for each inspection, as applicable.

4.1.6.1 Identify controlling procedures (such as TPRs) or consensus standards [such as American Society for Testing and Materials (ASTM), American National Standards Institute (ANSI), and American Concrete Institute (ACI)] and the following information as applicable:

- A. The organization and personnel to perform inspection(s)
- B. Implementing documents pertinent to the inspections
- C. Inspection HOLD POINTS/WITNESS POINTS (as required)
- D. The work control document containing inspection instruction and/or references to the applicable technical inspection procedure(s) (see definition of *Type 2 procedures*)
- E. Specific documentation required to be present at the time of inspection (such as subcontractor test reports or procedures) and inspection documentation required of each inspection or series of inspections performed
- F. Resolution of nonconformances identified by prior inspections
- G. Inspections for suspect/counterfeit items per MCP-9110, “Suspect/Counterfeit Item Identification and Control”
- H. Material control, traceability, and storage per MCP-9436, “Identification, Control, and Transfer of Item Traceability”
- I. Commercial Grade Item Dedication (CGD) forms per MCP-3772, “Use of Commercial Grade Items in Safety Structures, Systems, and Components”

**NOTE:** *If the IPP is issued strictly for a CGD Plan, the CGD number is entered in the Project QA Log Database as the specification (SPC) number. The SPC number, if applicable, can also be entered.*

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- J. Inspection on electrical equipment items (such as equipment, assemblies, bang boards, extension cords) for nationally recognized testing lab (NRTL) labeling/listing or an “authority having jurisdiction” (AHJ) record
- K. The basis (recognized standard or method) of the sampling process, when a sample is used to verify acceptability of a group of items
- L. Minimum frequency (that is, 100%, random), duration, or intervals (in-process, final) for required inspections
- M. The work control document identification number including, as applicable:
  - 1. Work order
  - 2. Project number
  - 3. Routing or production number
  - 4. Purchase order/Subcontract number
  - 5. Work plan number
  - 6. Work description or title
  - 7. Drawing/sketch number(s)
  - 8. Specification number(s)
  - 9. Quality Level and Quality Level Determination (QLD) number.
- N. Any attributes on this inspection plan can be marked “N/A,” clarified, or revised provided the entry is processed in accordance with the requirements of Section 4.2, “Inspection Planning Changes,” or 4.3, “Revisions,” as applicable.
- O. Identify inspections required when upgrading non-safety SSCs to QL-3 per MCP-540, “Assigning Quality Levels.”

4.1.7 QE: Obtain RE review and approval of the original planning package.

**NOTE:** *RE approval can be obtained electronically and attached to the IPP and to the database.*

4.1.7.1 File the concurrence with the inspection plan and attach to the applicable file in the Project QA Log Database.

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4.1.8 RE: Verify on the IPP/work control document that the design document inspection and acceptance criteria have been incorporated into the plan, and that the correct organization has been indicated for performing the inspection.

4.1.8.1 Approve the IPP and forward to the QE.

4.1.9 QE: Sign and date the IPP/work control document. The QE approval may be a typed name in the approval box in lieu of a signature.

4.1.9.1 Issue the IPP, or include as part of the work control document.

4.1.9.2 Stamp the approved IPP with “RED ORIGINAL-BLACK COPY” or “MASTER.”

**NOTE:** *The IPP can be maintained as a part of the work control document at the discretion of each facility or project.*

4.1.10 QE: Forward the work control document or the IPP to the appropriate organization.

4.1.11 QE: Update the Project QA Log Database by attaching an electronic copy of the inspection planning document and any attachments and approval emails, documenting the assigned QI, and indicating the IPP is “RELEASED.”

#### **4.1.12 Inspection Plan Distribution and Control**

4.1.12.1 QE: Forward the approved original IPP to the work order planner, or if the IPP is a stand-alone document, forward the original to the inspector. For subcontractor work activities, forward the approved original IPP to the inspector and a copy to either the work order planner or to Project Management for inclusion in the project work order/field files.

4.1.12.2 Inspector: Assume responsibility for the safekeeping of the inspection plan while possessing it.

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## 4.2 Inspection Planning Changes

### 4.2.1 Field Changes

- 4.2.1.1 Inspector: Make field changes (adding a reference to an approved design change document) to approved and released IPPs by initialing and dating the entry, and indicating the new entry adjacent to the original information.
- 4.2.1.2 Obtain the required signatory approval of the QE and RE for an in-process deletion or waiver of a planned inspection criteria or attribute which has no design change document authorizing it. An e-mail (electronic media) may be used to approve the change.
- 4.2.1.3 QE/QI: When an inspection attribute is deleted (such as a field design change [FDC], or a drawing revision that either deletes or clarifies a previously specified inspection), document all deletions by noting "DELETED" in the "complete" column of the inspection plan, and initialing and dating the entry, along with the number of the design change document that authorized the deletion.

## 4.3 Revisions

- 4.3.1 QE: Review design change document.
- 4.3.2 QE/RE: IF inspection plan changes are necessary as a result of the design change, THEN mark on the design change document whether the inspection plan should be revised or a new inspection plan created. Enter the inspection plan identifier on the design change document.
- 4.3.2.1 IF a new inspection plan is required, THEN refer back to Step 4.1 and issue a completely new inspection plan for the work activity per this procedure.
- 4.3.2.2 IF a revision is necessary, THEN obtain a revision number from the database.
- 4.3.2.3 Update the Project QA Log Database indicating this plan is a revision.

**NOTE:** *The system will generate a new inspection plan entry that contains the original plan number with the added "Rev. X."*

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4.3.2.4 Make the changes on an IPP sheet (additions or deletions) and process as a revision.

**NOTE:** *The original inspection plan will remain in place along with the revised IPP.*

4.3.2.5 Update the Project QA Log Database.

4.3.2.6 Notify all inspectors of the changes made to the inspection planning before they conduct the inspection.

4.3.3 QE: Obtain the approval of the RE and process the new IPP as an original.

**NOTE:** *RE approval can be obtained electronically.*

4.3.3.1 Attach an electronic copy of the revised IPP and the RE electronic approval to the Project QA Log Database for reference.

4.3.4 QI: Review and compare all changes in the design documents and the changes made to the inspection planning documents prior to conducting inspections.

#### **4.4 Inspection Performance**

4.4.1 QA Directorate: Ensure inspectors are independent of the responsible work process organization and are properly certified/qualified as prescribed in Step 3.1 to perform the assigned inspections.

**NOTE:** *Personnel supporting inspection activities by performing data recording or equipment operations under the guidance of a qualified inspector are not required to be certified inspectors and may document in ink their observations, verifications, and findings on an approved IPP, by using their initials/date and Data Recorder. Concurrence and acceptance by a certified inspector can be completed at a later time.*

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4.4.2 QI: Perform and document the assigned inspection(s) in accordance with the work control document, technical inspection procedure(s), or *inspection checklist(s)* (see def.). See Appendix A, “Inspection Planning Guidance.”

4.4.2.1 Inspect finished items for completeness, markings, calibration, adjustments, protection from damage, or other characteristics as required to verify the quality and conformance to the specific requirements.

4.4.2.2 The attributes on the inspection plan are minimum inspection requirements. Ensure full compliance with codes, specifications, drawings, and so forth, by performing additional inspections as necessary.

4.4.2.3 If multiple signatures are required on a form or checklist to verify one inspection plan attribute, initial and date or mark “N/A” each box of the form or checklist (see Step 4.4.2.4) as appropriate.

4.4.2.4 If a continuation line is used/drawn, initial and date that line to indicate acceptance of those attributes.

4.4.3 QI: Document the inspection results on the appropriate form (see Step 4.4.3.1.1) immediately following the inspection as required by the inspection plan or work control document. Sign all completed inspections on the original IPP (see Step 4.4.2.3).

4.4.3.1 Identify the following on the inspection forms, as applicable to the inspection activity:

- A. Item inspected
- B. Date of inspection
- C. Results indicating acceptability of characteristics inspected
- D. Name of the inspector, or the inspector’s unique identifier, who documented, evaluated, and determined acceptability
- E. Name of the data recorder, as applicable
- F. Type of observation or method of inspection
- G. Inspection criteria, sampling plan, or reference documents (include revision levels) used to determine acceptance

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- H. Measuring and test equipment (M&TE) information, serial number (S/N), and calibration due date
  - I. Any NCRs issued during the performance of the inspection activities.
- 4.4.3.1.1 Complete the following forms, as applicable for the activity being inspected:
- A. “Quality Inspection Report” (QIR) (Form 414.03)
  - B. “Visual Examination Report” (VER) (Form 414.04)
  - C. “Liquid Penetrant Examination Report” (Form 414.08)
  - D. “Magnetic Particle Examination Report” (Form 414.A37)
  - E. “Bubble Leak Testing Examination Report” (Form 414.A39)
  - F. “Pressure Change Leak Test Report” (Form 414.A81)
  - G. “Ultrasonic Thickness Measurement Report” (Form 416.21)
  - H. “Material Identification Report” (Form 414.A94).
- 4.4.3.1.2 Document all inspections performed, and attach the completed forms to the IPP, unless the inspection activity is recorded on other documents that provide the inspection status, such as, weld records, stand-alone IPP attributes, or subcontractor test reports.
- 4.4.3.1.3 IF the inspection report identifies an in-process activity or circumstance that requires a review/evaluation by the QE or RE, THEN forward the QIR to the appropriate individual, or for subcontractor work activities, document the item on the “Project Deficiency Status Report” (PDSR), Form 432.68, for Project Management action.

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4.4.3.1.4 WHEN the QIR has been evaluated, answered, and returned, THEN complete the “report closure date” box in the Project QA Log Database.

**NOTE:** *MCP-538, “Control of Non-Conforming Items,” not the PDSR, must be used upon presentation for final inspection or reinspection.*

4.4.3.1.5 Project Manager: Correct and have the PDSR items re-inspected before completing the project, or before the item becomes inaccessible for inspection.

4.4.3.1.6 QI: Attach an electronic copy of the QIR/VER forms, as applicable, to the Project QA Log Database for reference.

4.4.3.1.6.1 IF the report does not require response or evaluation by a QE or RE, THEN complete the “Report Closure Data” box in the log.

4.4.3.1.7 Record the QIR number on the IPP (Form 414.81, Block 10) or work control document for traceability.

4.4.4 QI: Indicate the quality status of inspected items by using the appropriate quality status tag, as applicable:

- A. “Quality Accepted Tag” (Green Tag; Form 416.22)—Used to identify that the material/items meet acceptance criteria and are acceptable for use
- B. “Construction Management Quality Accepted Tag” (Green and White Striped Tag; Form 432.69)—Used for receipt inspection of subcontractor material per TPR-6416, “Construction Receipt Inspections Procedure”
- C. “Quality Hold for Inspection Tag” (Yellow Tag; Form 416.23)—Used to identify the withheld status of material/items pending further inspection/test, review, or investigation

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- D. “Nonconformance Tag” (Red Tag; Form 230.02)—Used to identify the rejected status of items or materials that have been inspected/tested and found unsuitable for their intended use
- E. “Conditional Use Tag” (White Tag; Form 230.04)—Used to identify those nonconforming items that have been conditionally released for further processing, the limitations, and the expiration date of the conditional release
- F. Reasonable efforts must be taken to ensure the QA status tag remains legible and protected given the environmental conditions the material and equipment will be subjected to.

**NOTE:** *Only QA personnel have the authority to remove or authorize the removal of conditional release, nonconformance, or hold-for-inspection tags.*

- 4.4.5 IF an item is received for project/work with an “Inspection/Test Referral” tag (Form 414.98) and a yellow “Quality Hold for Inspection” tag,  
THEN do NOT remove them.

**NOTE:** *The item is pending receiving inspection acceptance, based on test results from the project.*

- 4.4.5.1 Remove the tags upon completion and acceptance of the project testing.
- 4.4.5.2 Forward the inspection/test referral form to the QE with a copy of the test results for signature.
- 4.4.5.3 QE: Forward the completed package to receiving inspection for processing in accordance with TPR-4960, “Receiving Inspection.”
- 4.4.6 QI: When M&TE is utilized, document the identification numbers and calibration due date information as follows.
  - 4.4.6.1 Update the usage log per MCP-2391, “Control of Measuring and Test Equipment.”
  - 4.4.6.2 Ensure M&TE identification numbers and calibration due date information are recorded on test data sheets and system operability test documents where M&TE was used to acquire test data and test results.

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4.4.7 QI: Record the identification number of any nonconformance reports issued in accordance with MCP-538, on the QIR/IPP or work control document.

4.4.7.1 QI: If a response is required to the QIR, forward the QIR to the QE for additional information and resolution, as applicable.

4.4.8 QI: Upon work/project completion, perform a review for completeness and accuracy, ensure that all blanks have been completed or marked N/A (including justification for N/A), and then submit the completed inspection documentation (for example, IPP, inspection records, NDE reports) for review as required by the work control document (see Step 4.4.2..

4.4.8.1 Verify that any open inspection plan attributes have been transferred to Form 432.68, “Project Deficiency Status Report” for subcontractor work activities.

4.4.8.2 Verify the “complete/initial and date” column have the punch-list item number entered, initialed, and dated.

4.4.8.3 QI: Forward the IPP to the QE for review.

4.4.8.3.1 Verify that a completed copy of the QIR that required a response has been attached to the Project QA Log Database with the response provided.

4.4.8.4 QI: Attach a copy of the Receipt Inspection Log and Report Generator to the IPP for the applicable items for subcontractor work activities involving receipt inspection.

**NOTE:** *This applies to TPR-6416 receipt inspection activities. It does not apply to TPR-4960 inspections.*

#### 4.5 Inspection Documentation Review

4.5.1 Reviewer (see def.): Review the completed inspection documentation to ensure the following:

4.5.1.1 Ensure documentation is complete, accurate, and legible.

4.5.1.1.1 Reconcile any discrepancies with the inspector of record.

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4.5.1.1.2 Remove any documents included in the IPP that were submitted through the Vendor Data System (such as test reports, weld history records), or through the Electronic Data Management System (EDMS) system (such as drawings, FDCs).

4.5.1.2 Ensure all assigned inspection(s) were performed and properly documented.

4.5.1.2.1 Ensure that all IPP steps, initialed by a data recorder, have also been initialed by a certified inspector.

4.5.1.3 Ensure any waivers or bypassing of assigned inspection(s) were approved.

4.5.1.4 Ensure M&TE used for the inspection performed was identified, and the calibration due date had not expired at the time of the inspection.

4.5.1.5 Ensure any NCRs noted are closed.

4.5.1.6 Ensure any modifications, repairs, or replacements of items performed subsequent to final inspection received a re-inspection or retest, as appropriate, to verify acceptability.

4.5.1.7 Ensure documentation not previously examined prior to final inspection has been examined for adequacy and completeness.

4.5.1.8 Ensure all QIRs and MIRSs as applicable, are closed. All other inspection forms are attached to the IPP.

**NOTE:** *QIRs that did not require a response, do not require that the "ADDRESSEE RESPONSE" boxes be marked N/A.*

4.5.2 Reviewer: IF an item or process deficiency is identified during the review, THEN determine the need to generate an NCR (see MCP-538) or a PIR (see MCP-598).

4.5.3 Reviewer: Sign and date the inspection plan, validating completion of the inspection activities and the associated documentation, after it has been determined to be acceptable.

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- 4.5.4 QE: Update the Project QA Log Database with the planning package validation date.
- 4.5.4.1 Update the planning package status to CLOSED.
- 4.5.4.2 Add remarks to the database as necessary.
- 4.5.4.3 Close the inspection plan and reports in the Project QA Log Database.
- 4.5.4.4 Number all pages in the IPP prior to transmittal to records.
- 4.5.5 Reviewer: Forward inspection documentation to the applicable work control or project. For subcontractor work activities, use Form 241.23, “Records Transmittal.”

## 5. RECORDS

Inspection checklist

Inspection Documentation (IPP, QIR, NDE Reports, and backup documentation)

**NOTE:** *MCP-557, “Records Management,” the INL Records Schedule Matrix, and associated record types list(s) provide current information on the storage, turnover, and retention requirements for these records.*

## 6. DEFINITIONS

*Design output documents.* Drawings (reference MCP-2377), specifications (reference MCP-9359), FDCs (reference MCP-1308), and other documents resulting from the translation of design input requirement of items (reference LST-199).

*Independent (inspection, test, and nondestructive examination).* Performed by qualified personnel other than those who performed or directly supervised the work. See Step 3.1 for details. For work subject to DOE/RW-0333P, the personnel must be independent of the organization directly responsible for the work.

*Inspection.* An examination or measurement to verify whether an item or activity conforms to specified requirements.

*Inspection Checklist.* A set of standardized instructions for the performance and/or documentation of a repetitive inspection using a specific inspection method, where the generation of a technical inspection procedure is not needed. Checklists may also be used to document inspections performed in accordance with a technical inspection procedure.

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*Inspection planner.* An individual who prepares work control documents to establish the type and frequency of inspection(s) for a specific work order, project, activity, procurement, or production to ensure conformance with the applicable requirements.

*Inspection planning.* The function of evaluating design output documents to determine inspection requirements that include methods and means, facilities, equipment, personnel, procedures, and plans for meeting established requirements

*Inspection Planning Package (IPP).* A document used to provide instructions in a systematic manner for the performance and documentation of inspections and/or process monitoring. The form also identifies the required inspections and referencing technical inspection procedures and inspection checklists.

*Inspector.* An individual certified/qualified in accordance with the company process to perform the inspections specified on the IPP.

*Monitoring.* The act of watching, observing, or keeping track of a process, operation, or activity to collect and document certain specified information or data that are generated during processing or operation.

*Responsible Engineer (RE) (design engineer/system engineer for projects or activities, as appropriate).* Company employee who has been assigned design responsibility for a system, item, or service, and who provides inspection criteria and acceptance criteria for that item or service.

*Reviewer.* A qualified program QE or project QE responsible for review and validation of completed documentation.

*Structures, systems and components (SSC).* *Structures* are elements that provide support or enclosure, such as buildings, freestanding tanks, basins, dikes, and stacks. *Systems* are collections of components assembled to perform a function, such as heating, ventilating, and air conditioning (HVAC) systems, control systems, utility systems, reactor cooling systems, or fuel storage systems. *Components* are items of equipment such as pumps, valves, and relays; or elements of a larger array such as computer software, lengths of pipe, elbows, or reducers.

*Type 2 procedures.* The following procedures have been evaluated in accordance with MCP-2985, “Chapter XVI, Operations Procedures,” and are defined as activities of a routine, low-risk nature where a “Use Type 2” procedure may be performed without the procedure available and referenced by the operator:

- A. TPR-4975, “Liquid Penetrant Examination”
- B. TPR-4976, “Leak Test Procedure”
- C. TPR-4977, “Magnetic Particle Examination”
- D. TPR-4978, “Material Sorting Electronic Methods”

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- E. TPR-4981, “Visual Examination”
- F. TPR-4984, “Ultrasonic Digital Thickness Measurement”
- G. TPR-6304, “Small Volume Pressure Change Leak Test.”

*Work control document.* A document that is used to identify, authorize, and accomplish work. Work control documents may take the form of work orders, work plans, project plans, requirement documents, design specifications, drawings, procurement specifications, purchase orders, requisitions, or contracts.

## 7. REFERENCES

ASME NQA-1a-2009, “Quality Assurance Requirements for Nuclear Facility Applications,” American Society of Mechanical Engineers”

ICP Architectural Engineering Standards

DOE/RW-0333P, “Quality Assurance Requirements and Description,” Revision 20, Office of Civilian Radioactive Waste Management

Form 230.02, “Nonconformance Tag”

Form 230.04, “Conditional Use Tag”

Form 241.23, “ICP Records Transmittal”

Form 414.A37, “Magnetic Particle Examination Report”

Form 414.A39, “Bubble Leak Testing Examination Report”

Form 414.A81, “Pressure Change Leak Test Report”

Form 414.A94, “Material Identification Report”

Form 414.03, “Quality Inspection Report”

Form 414.04, “Visual Examination Report”

Form 414.08, “Liquid Penetrant Examination Report”

Form 414.81, “Inspection Planning Package”

Form 414.81A, “Inspection Planning Package General Notes”

Form 414.98, “Inspection/Test Referral”

Form 416.21, “Ultrasonic Thickness Measurement Report”

Form 416.22, “Quality Accepted Tag”

Form 416.23, “Quality Hold for Inspection Tag”

Form 432.68, “Project Deficiency Status Report”

Form 432.69, “Construction Management Quality Acceptance Tag”

Form 434.17, “Manufacturing Inspection Record Sheet”

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GDE-325, "Purchase, Control, and use of Torque Wrenches And Other Torque Devices"  
LST-199, "Quality Assurance Program Requirements Document Definitions"  
MCP-535, "NDE Personnel Certification"  
MCP-538, "Control of Nonconforming Items"  
MCP-540, "Assigning Quality Levels"  
MCP-557, "Records Management"  
MCP-598, "Corrective Action System"  
MCP-1308, "Field Design Change"  
MCP-1309, "Inspection Personnel Certification"  
MCP-2377, "Development, Assessment, and Maintenance of Drawings"  
MCP-2391, "Control of Measuring and Test Equipment"  
MCP-2446, "Controlling Lists of ICP Nuclear Facilities and Nuclear Facility Managers"  
MCP-2985, "Chapter XVI, Operations Procedures"  
MCP-3491, "Acceptance of Procured Materials and Services"  
MCP-3772, "Use of Commercial Grade Items in Safety Structures, Systems, and Components"  
MCP-9110, "Suspect/Counterfeit Item Identification and Control"  
MCP-9359, "Specifications and Statements of Work"  
MCP-9436, "Identification, Control, and Transfer of Item Traceability"  
PRD-5072, "Personnel Training and Qualification"  
PRD-5081, "Inspection"  
PRD-5085, "Inspection, Test, and Operating Status"  
TPR-1778, "FaroArm Dimensional Inspection"  
TPR-4960, "Receiving Inspection"  
TPR-4975, "Liquid Penetrant Examination"  
TPR-4976, "Leak Test Procedure"  
TPR-4977, "Magnetic Particle Examination"  
TPR-4978, "Material Sorting Electronic Methods"  
TPR-4981, "Visual Examination"  
TPR-4984, "Ultrasound Digital Thickness Measurement"  
TPR-6304, "Small Volume Pressure Change Leak Test"  
TPR-6416, "Construction Receipt Inspections Procedure"

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**8. APPENDIXES**

Appendix A, Inspection Planning Guidance

Appendix B, Procedure Basis

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## Appendix A

### Inspection Planning Guidance

The basis for the assignment, level, and intensity of inspection applied to processes, activities, and items are driven by *design output documents* (see def.). The basis should be commensurate with the importance of a process, activity, or item's function to human health, safety, nuclear safety, effect on the environment, reliability, maintainability, and operability. Factors that should be addressed in establishing inspection activities are:

- Consequence of malfunction or failure
- Design and fabrication complexity or uniqueness
- Need for special controls and surveillance over processes and equipment
- Degree to which functional compliance can be demonstrated by inspection or test
- History of an item indicating it is subject to being supplied as a suspect/counterfeit item
- Quality history and degree of standardization
- Difficulty of correction, repair, or replacement
- Requirements of applicable instructions, procedures, drawings, specifications, codes, and standards.

The type of inspection (in-process, final, in-service, etc.) to be performed should be determined and identified in the appropriate document during the inspection planning process.

Inspection personnel should be provided with adequate information, direction, and criteria for performing inspection activities as required to verify quality and conformance to specified requirements. As a minimum, this should include:

- Measurable and verifiable acceptance criteria, including tolerances
- Identification of the organization performing the work or otherwise responsible for the process, activity, or item
- Identification of the organization responsible for performing the inspection.

When applicable, the following also should be incorporated into inspection plans:

- Special requirements, such as environmental conditions, prerequisite safety inspections, notification to (or confirmation of the availability of) other organizations, simulation of normal or abnormal operating conditions, equipment lockout, and personnel to contact for access
- Reference to associated documents

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- Selection and identification of the measuring and test equipment or installed process instrumentation
- Set-up and operation of test equipment
- Equipment necessary to support the inspection (such as ladders, scaffolding, water supply, compressed air, cleaning equipment, and safety equipment)
- Inspection tools required, such as mirrors, flashlights, levels, Faro Arm, and rulers
- Material preparation requirements, such as the removal of insulation for a leak test
- Instructions for performing any required calculations (for example, torque wrench settings using extensions and/or multipliers per GDE-325)
- Specific instruction for process monitoring or sampling activities.

When sampling inspection is used, alternate sampling inspection criteria may be developed and implemented in cases where the use of recognized industry statistical sampling standards is not practical or possible. The design organization should provide technical justification for the alternate criteria when so specified. The sampling criteria used (industry standard or alternate) should be documented.

The Quality Assurance (QA) organization should:

- Ensure that inspection personnel are provided adequate inspection information, direction, and criteria in documentation provided by other organizations (such as work packages) that will be readily available during inspection activities

or

- Provide the information, direction, and criteria in inspection documents, such as inspection checklists or inspection procedures.

Inspection checklists and reports may be combined, stand-alone, or incorporated with other documents that specify inspection.

Inspection records and other documentation generated as a result of or directly associated with the inspection activity should, as a minimum, be reviewed for the following:

- All documents are complete and accurate and appropriately signed off
- The required inspections were performed and completed in accordance with inspection planning documents
- Inspection results, including the accept/reject status, were recorded for each inspection requirement/attribute
- Processes, activities, and items were found to be in compliance with specified requirements, including those that were initially rejected and required resolution

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- Nonconformances or process deficiencies, including those discovered during final review and acceptance, were properly recorded and have been resolved
- Inspection activities were performed by individuals with the appropriate certifications/qualifications.

If process monitoring was required in conjunction with the inspection activity, the documentation should be reviewed to ensure performance and completion of the activity, that required items and activities were observed and evaluated, and that any discovered nonconformances were properly recorded and have been resolved.

Discrepancies discovered during the review process should be resolved prior to final acceptance.

The final review should affirm conformance of an item or activity to specified requirements prior to final acceptance of inspection activities. Final acceptance will be documented by completing the final review and approval block on the inspection-reporting document and IPP.

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**Appendix B**

**Procedure Basis**

Step, Section	Basis	Source	Citation
Entire procedure	Inspections	PRD-5081	All
Entire procedure	Inspection, test, and operating status	PRD-5085	All