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Companywide	Management Control Procedure	For Additional Info: http://EDMS	Effective Date: 08/04/11
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Manual:

USE TYPE

Change Number: 333877

*The current revision can be verified on EDMS.

1. INTRODUCTION

1.1 Purpose

Special processes (see def.) are controlled to ensure the quality of products.

1.2 Scope and Applicability

This procedure includes methods to identify special processes, requirements for establishing procedures and their control, and instruction on their use.

All special processes performed by the Company that are used to control or verify *quality significant* (see def.) items or activities are subject to evaluation and subsequent control using this procedure.

2. RESPONSIBILITIES

Performer	Responsibilities
Process Owner	Identify special processes and notify Quality Assurance (QA) personnel of special processes. Provide process control.
Quality Systems Personnel	Keep the list of special processes up to date (see Appendix A, List of Special Processes).
Quality Engineer	Review special process procedures and work control documents.
Work Requestor	Ensure work specifications identify special processes, procedures and acceptance criteria.
Process User	Ensure special processes are performed using approved procedures or instructions.

3. PREREQUISITES

None.

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4. INSTRUCTIONS

4.1 Identification of Special Processes

4.1.1 Process Owner (see def.): Identify and evaluate potential special processes by using the following criteria and consulting with Quality Assurance personnel:

- A. The process is used to verify the quality of items or activities
- B. The process is one of the following classes or descriptions:
 - 1. Processes is classified as welding, brazing, bonding, or nondestructive examination
 - 2. Results are highly dependent on process control
 - 3. Results are highly dependent on operator skill.
- C. Quality of the results cannot be readily determined by inspection or test of the item.

NOTE: *All processes that meet the above criteria are classified as special processes. All others are not.*

4.1.2 Notify Quality Assurance personnel via e-mail of special process activities that have not been previously identified in Appendix A. Include the following in the notification:

- A. Process title or name
- B. Procedure number and title
- C. Organization(s) performing the special process
- D. Process *qualification* (see def.) authority for the special process
- E. Personnel *qualification* (see def.) authority for that special process.

4.1.3 Quality Systems Personnel: List typical special processes and qualification/certification authority activities described in Appendix A.

4.1.4 Quality Engineer: The quality engineer is responsible for reviewing special process procedures and work control documents to ensure

- A. Applicable quality inspection points and qualification/certification requirements (for special process procedures, equipment, and personnel) are incorporated
- B. Inspections are performed, as required.

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4.2 Establishing Procedures to Control Special Processes

- 4.2.1 Process Owner: Provide essential information for welding, brazing, and bonding procedures for use at the Idaho Cleanup Project (ICP) in accordance with the Idaho National Laboratory (INL) Weld Manual.
- 4.2.2 Develop and qualify nondestructive examination (NDE) procedures in accordance with MCP-195, “NDE Equipment and Procedure Qualification.”
- 4.2.3 For other processes deemed to be special processes, provide the following:
- A. Approval of technical requirements
 - B. Controlled process parameters
 - C. Documentation which qualifies the process, personnel, and equipment
 - D. Conditions necessary for completion of the special process
 - E. Equipment, statistical process control, controlled parameters
 - F. Process and calibration requirements; or specify utilization of previously qualified procedures.

NOTE: *Control the related documentation in accordance with applicable procedures.*

- 4.2.4 Ensure that special process control documents are initially and periodically subject to quality engineering and other appropriate technical review to verify that acceptance/rejection criteria and appropriate procedure, personnel, and equipment qualification requirements are provided and currently applicable.
- 4.2.5 Establish procedures to control special processes affecting quality, ensuring that the following technical requirements are addressed:
- A. Applicable specifications, codes, or standards with stated or referenced acceptance/rejection criteria and other requirements of applicable codes and standards
 - B. The preparatory steps, processing details, process conditions, environmental conditions, calibration requirements, and record requirements providing traceability between the item and the individual performing the special process
 - C. Process parameters needing to be controlled/recorded
 - D. Personnel qualification requirements

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- E. Required equipment and equipment qualification requirements
- F. Procedure or instruction qualification requirements
- G. For special processes not covered by existing codes or standards, or where quality requirements for an item exceeds those for existing codes or standards; qualification requirements and requirements for special processes, procedures, personnel, or equipment must be specified or referenced in the applicable procedures or instructions
- H. Instructions or work direction documents should include required inspections, examinations, or tests—including hold points
- I. Establish record retention requirements (in accordance with governing codes, standards, and directives) for:
 - 1. Procedures
 - 2. Qualifications of procedures, equipment, and personnel.

4.3 Using Special Processes

- 4.3.1 Work Requestor: For work that entails the use of special processes, ensure work specifications or planning identify the processes to be used, the procedures and acceptance criteria applicable to the process, and the items affected.
 - A. For welding, brazing, and bonding use the procedures that are contained in the INL Weld Manual, or other approved procedures.
 - B. For NDE use the appropriate technical procedures (TPRs) found in Appendix A (see the Electronic Document Management System [EDMS]).
- 4.3.2 Process User: (see def.): Ensure that special processes are performed using approved instructions, procedures, drawings, checklists, travelers, or other appropriate means.

NOTE: *These means ensure that process parameters are controlled and specified environmental conditions are maintained.*

- 4.3.3 Ensure no changes to special-process control documents are implemented unless they receive review and approval commensurate with the original document.
- 4.3.4 Ensure that special processes are performed by qualified personnel using qualified procedures and equipment.

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- 4.3.5 Perform processes and ensure that qualification and other technical requirements are satisfied, and that process data and records are maintained as specified in work documents. Reference MCP-2482, “Inspection for Conformance.”

5. RECORDS

There are no records generated within this procedure. The records generated from special processes are controlled by the respective special process procedures such as MCP-195, or MCP-535, “NDE Personnel Certification,” for training/qualification records of NDE personnel.

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

Independent (inspection, test and nondestructive examination). Performed by qualified personnel other than those who performed or directly supervised the work. Personnel must be independent of the organization directly responsible for the work.

Process Owner. That person who is most involved in and most responsible for establishing controls over a given process and who has authority to make changes.

Process User. The person who is responsible for implementing process procedures, and/or is responsible for results obtained from a process.

Qualification (personnel). The characteristics or abilities gained through education, training, or experience as measured against established requirements, such as standards or tests, that qualify an individual to perform a required function

Qualification (process). The determination, establishment, demonstration and documentation of the initial and extended essential variables range for a particular NDE process or technique.

Quality Significant. Structures, systems, and components (see def.) that are classified as Quality Level 1, 2, or 3 per MCP-540, “Assigning Quality Levels,” or whose governing codes, standards and regulations require *independent* (see def.) inspection, test, or nondestructive examination. .

Special Inspection Processes. Nondestructive tests or special examination methods used to establish objective evidence of quality.

Special Manufacturing Processes. Metallurgical, welding, heat treating, and other processes in which the quality of the processes is dependent on the inherent skill of the

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operator, equipment capability and process characteristics and cannot be entirely assured by the inspection of articles alone.

Special Processes. A process, the results of which are highly dependent on the control of the process or skill of the operators, or both, and in which the specified quality cannot be readily determined by inspection or test of the product. Can be a *special inspection* (see def.) or *special manufacturing process* (see def.).

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.

7. REFERENCES

INL Weld Manual

MCP-195, “NDE Equipment and Procedure Qualification”

MCP-535, “NDE Personnel Certification”

MCP-540, “Assigning Quality Levels”

MCP-2482, “Inspection for Conformance”

8. APPENDIXES

Appendix A, List of Special Processes

Appendix B, MCP-37 Procedure Basis

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Appendix A

List of Special Processes

Process	Procedure	Performing Organization	Procedure Qualification Authority	Personnel Qualification Authority
Brazing	INL Weld Manual	INL Weldg Committee	INL Weld Manual Procedures	INL Weld Manual
Visual Examination (NDE)	TPR-4981, Visual Examination	QA	MCP-195	MCP-535
Leak Testing (NDE)	TPR-6304, Small Volume Pressure Change Leak Test TPR-4976, Leak Test Procedure	QA	MCP-195	MCP-535
Liquid Penetrant Examination (NDE)	TPR-4975, Liquid Penetrant Examination	QA	MCP-195	MCP-535
Magnetic Particle Examination (NDE)	TPR-4977, Magnetic Particle Examination	QA	MCP-195	MCP-535
Eddy Current Examination: Material Sorting (NDE)	TPR-4978, Material Sorting Electronic Methods	QA	MCP-195	MCP-535
Radiographic Examination (NDE) Real-time Radiographic	Subcontract	Selected Subcontractor	Subcontractor	Subcontractor
Ultrasonic Examination (NDE)	TPR-4984, Ultrasonic Digital Thickness Measurement	QA	MCP-195	MCP-535

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Process	Procedure	Performing Organization	Procedure Qualification Authority	Personnel Qualification Authority
Welding (including pre- and post-weld heat treatment)	INL Weld Manual	INL Weld Committee	INL Weld Manual Procedures	INL Weld Manual

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Appendix B

MCP-37 Procedure Basis

Step	Basis	Source	Citation
All	The requirements identified in this subsection meet the requirements in “Quality Assurance Requirements for Nuclear Facility Application,” American Society of Mechanical Engineers (ASME/NQA-1a, 2009) and apply to the entire company as defined by FWD-7, “Foreword.”	PRD-5080, Control of Special Process	4.1
All	This subsection contains additional requirements from the Quality Assurance Requirements and Description (Department of Energy/Office of Civilian Radioactive Waste [DOE/RW] - 0333P) that are specific to spent nuclear fuel and high-level waste activities as defined in FWD-7.	PRD-5080, Control of Special Process	4.2