

NRMRL QAPP REQUIREMENTS FOR THE DESIGN, CONSTRUCTION, AND OPERATION OF ENVIRONMENTAL TECHNOLOGY PROJECTS

GENERAL REQUIREMENTS: Include cover page, distribution list, approvals, and page numbers.

0. COVER PAGE

Include the Division/Branch, project title, revision number, EPA technical lead, QA category, organization responsible for QAPP preparation, and date.

1. PROJECT DESCRIPTION AND OBJECTIVES

- 1.1 State the purpose of the technology.
- 1.2 Describe the specific environmental technology components or system that are(is) to be designed, fabricated, constructed, and operated.
- 1.3 State the purpose of the project and list specific project objective(s).

2. ORGANIZATION AND RESPONSIBILITIES

- 2.1 Identify all project personnel, including QA, and related responsibilities for each participating organization, as well as their relationship to other project participants.
- 2.2 Include a project schedule that includes key milestones.

3. DESIGN OF SYSTEMS

- 3.1 Provide key design inputs, including initial design drawings, with clear identification of flow paths, process control/monitoring devices, etc., using standard engineering protocols.
- 3.2 Identify technical and quality specifications required for each component or for the complete system, both in materials of construction and in performance requirements.
- 3.3 Describe the process for documentation, review, and approval of design outputs.
- 3.4 Describe the system for documenting and controlling design changes.

4. CONSTRUCTION/FABRICATION OF SYSTEMS AND COMPONENTS

- 4.1 Describe calibration procedures for all measuring and test equipment used in construction/fabrication, including acceptance criteria.
- 4.2 Document the process for management, acceptance, and control of all construction materials.
- 4.3 Describe periodic reviews performed to verify conformity of the constructed system and components to design specifications.
- 4.4 Describe procedures for final inspection, acceptance, and documentation of completed systems and components.

5. OPERATION OF SYSTEMS

Specify documentation requirements for system operating instructions/guides, including:

- System startup procedures and requirements
- Appropriate controls for materials (including consumables)
- Calibration and controls for measurement and testing equipment
- Configuration management
- Operating procedures and parameters for specific components and systems configuration, including specified safety limits
- Routine inspection and testing requirements
- Spill, fire, and other hazard safety procedures
- Process equipment control and maintenance, including specifications during abnormal conditions for inspection and test situations and fault and emergency conditions;
- Special environments, time, temperature, or other factors affecting the quality of operation
- The skill, capability, and knowledge of operators needed to meet operational and quality requirements

6. VERIFICATION AND ACCEPTANCE OF SYSTEMS

Specify requirements for the review of design, construction, or operational outputs (e.g., other organizations, peer review), including acceptance criteria.

7. REPORTING

- 7.1 Describe the process for controlling and maintaining key design, construction, and operational records.
- 7.2 List and describe the deliverables expected from each organization responsible for design, construction, and operational outputs.
- 7.3 Specify the expected final product(s) that will be prepared for the project (e.g., journal article, final report, etc.).

8. REFERENCES

Provide references either in the body of the text as footnotes or in a separate section.