Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

BLUECORE

Quality Assurance Program Description

Nautilus Floating Nuclear Power Plant

BLU-QAPD-000001 · REVISION 0 · OCTOBER 2026



Bluecore Energy
1251 W Pier D Street, Long Beach, CA 90802
Bluecore.energy

TOTAL PAGES 46, INCLUDING THIS COVER PAGE

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

Revision	Date	Description	Prepared By
0	10/16/2026	Initial issue	William Zimmer

Signature Table			
Prepared by	William Zimmer	Signed by: William Zimmer 55D3A46E41B9465...	10/16/2026
Reviewed by	Megan Moyette	Signed by: Megan 0B0988 7B96474A8...	10/16/2026
Reviewed by	Lionel Wells	Signed by: Lionel Wells E1A108B156DB4C5...	10/16/2026
Approved by	Kofi Asante, Founder and CEO	Signed by: Kofi Asante CC6C05224F3544C...	10/16/2026

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

TABLE OF CONTENTS

Executive Policy Statement..... 7
1. Introduction and Scope..... 8
1.1 Scope and Applicability..... 8
1.1.1 NRC Licensing Basis..... 8
1.1.2 Application of Other Codes, Standards, and Requirements..... 8
1.2 QAPD Revision Control..... 8
2. Quality Assurance Program Details (18 Criteria)..... 10
2.1 - ORGANIZATION (Criterion I)..... 10
2.1.1 Organizational Structure and Reporting Lines..... 10
2.1.2 Independence of the Chief Quality Assurance Manager..... 11
2.1.3 Design Authority..... 12
2.1.4 Functional Responsibilities..... 13
2.1.5 Engineering Organization..... 13
2.1.6 Licensing and Regulatory Affairs..... 14
2.1.7 Supply Chain and Procurement..... 14
2.1.8 Interface Control..... 14
2.1.9 NQA-1 Implementation..... 14
2.2 QUALITY ASSURANCE PROGRAM (Criterion II)..... 15
2.2.1 General..... 15
2.2.2 Orientation and Training..... 15
2.2.3 Qualification Requirements..... 15
2.2.4 Records of Qualification..... 16
2.2.5 Management Assessment..... 16
2.2.6 NQA-1 Implementation..... 17
2.3 DESIGN CONTROL (Criterion III)..... 17
2.3.1 General..... 17
2.3.2 Design Inputs..... 17
2.3.3 Design Process & Design Analyses..... 17
2.3.4 Computer Software..... 18
2.3.5 Design Verification..... 18
2.3.6 Design Change Control..... 19
2.3.7 Interface Control..... 20
2.3.8 NQA-1 Implementation..... 20
2.4 - PROCUREMENT DOCUMENT CONTROL (Criterion IV)..... 20
2.4.1 General..... 20
2.4.2 Content of Procurement Documents..... 20
2.4.3 Procurement Document Review and Changes..... 21
2.4.4 NQA-1 Implementation..... 21

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

2.5 - INSTRUCTIONS, PROCEDURES, AND DRAWINGS (Criterion V)....22
2.5.1 General....22
2.5.2 Procedure Adherence and Content....22
2.5.3 NQA-1 Implementation....22
2.6 - DOCUMENT CONTROL (Criterion VI)....22
2.6.1 General....22
2.6.2 Document Control Measures....22
2.6.3 Review, Approval, and Changes....23
2.6.4 NQA-1 Implementation....23
2.7 - CONTROL OF PURCHASED ITEMS AND SERVICES (Criterion VII)....23
2.7.1 General....23
2.7.2 Supplier Evaluation and Selection....23
2.7.3 Bid Evaluation....24
2.7.4 Supplier Evaluations....24
2.7.5 Acceptance of Item or Service....24
2.7.6 Commercial Grade Items and Services....25
2.7.6.1 Commercial Grade Calibration and Testing Services....25
2.7.7 NQA-1 Implementation....25
2.8 IDENTIFICATION AND CONTROL OF ITEMS (Criterion VIII)....26
2.8.1 General....26
2.8.2 Identification Methods....26
2.8.3 Specific Requirements....26
2.8.4 NQA-1 Implementation....26
2.9 - CONTROL OF SPECIAL PROCESSES (Criterion IX)....27
2.9.1 General....27
2.9.2 Process Control....27
2.9.3 Special Requirements and Records....27
2.9.4 NQA-1 Implementation....27
2.10 - INSPECTION (Criterion X)....27
2.10.1 General....27
2.10.2 Inspection Planning and Hold Points....28
2.10.3 In-Process and Final Inspections....28
2.10.4 Inspection Records....28
2.10.5 NQA-1 Implementation....29
2.11 - TEST CONTROL (Criterion XI)....29
2.11.1 General....29
2.11.2 Test Requirements and Procedures....29
2.11.3 Computer Program Test Procedures....29
2.11.4 Test Records....29
2.11.5 NQA-1 Implementation....30
2.12 - CONTROL OF MEASURING AND TEST EQUIPMENT (Criterion XII)....30

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

2.12.1 General..... 30
2.12.2 Calibration and Control..... 30
2.12.3 Commercial Devices..... 30
2.12.4 NQA-1 Implementation..... 30
2.13 - HANDLING, STORAGE, AND SHIPPING (Criterion XIII)..... 31
2.13.1 General..... 31
2.13.2 Special Requirements and Environments..... 31
2.13.3 Tools, Equipment, and Operators..... 31
2.13.4 Marking and Labeling..... 31
2.13.5 NQA-1 Implementation..... 31
2.14 - INSPECTION, TEST, AND OPERATING STATUS (Criterion XIV)..... 31
2.14.1 General..... 31
2.14.2 Authority and Status Indication..... 32
2.14.3 NQA-1 Implementation..... 32
2.15 - CONTROL OF NONCONFORMING ITEMS (Criterion XV)..... 32
2.15.1 General..... 32
2.15.2 Identification and Segregation..... 32
2.15.3 Evaluation and Disposition..... 33
2.15.4 10 CFR Part 21 Interface..... 33
2.15.5 NQA-1 Implementation..... 33
2.16 - CORRECTIVE ACTION (Criterion XVI)..... 34
2.16.1 General..... 34
2.16.2 Significant Conditions Adverse to Quality..... 34
2.16.3 10 CFR Part 21 and 10 CFR 50.55(e)..... 34
2.16.4 NQA-1 Implementation..... 34
2.17 - QUALITY ASSURANCE RECORDS (Criterion XVII)..... 34
2.17.1 General..... 34
2.17.2 Electronic Records Management..... 35
2.17.3 Authentication and Classification..... 35
2.17.4 Storage and Retention..... 35
2.17.5 NQA-1 Implementation..... 36
2.18 - AUDITS (Criterion XVIII)..... 36
2.18.1 General..... 36
2.18.2 Audit Scheduling and Frequencies..... 36
2.18.3 Audit Preparation and Performance..... 37
2.18.4 Reporting, Response, and Follow-Up..... 37
2.18.5 NQA-1 Implementation..... 38
3. NONSAFETY-RELATED SSC QUALITY CONTROLS..... 39
3.1 Nonsafety-Related SSCs - Significant Contributors to Plant Safety..... 39
3.2 Nonsafety-Related SSCs Credited for Regulated Events..... 40
4. REGULATORY GUIDES AND QUALITY ASSURANCE STANDARDS COMMITMENTS..... 41

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

4.1 Quality Assurance Standard..... 41
4.2 Commitments..... 41
4.3 Exceptions and Clarifications..... 44
5. Acronyms, Abbreviations, and Symbols..... 45
6. References..... 47

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

Executive Policy Statement

Bluecore Energy, Inc. ("Bluecore") is committed to the safe and effective implementation of its Quality Assurance Program and to maintaining the quality of structures, systems, components, and activities within the scope of this QAPD. Bluecore management is responsible for establishing the expectations, authority, organizational independence, and resources necessary to effectively implement the Quality Assurance Program. Personnel performing activities affecting quality are responsible for performing those activities in accordance with this QAPD and applicable implementing procedures. Authority to identify conditions adverse to quality, initiate corrective action, and stop work when warranted is established in the Organization section of this QAPD. Compliance with this QAPD and its implementing procedures is mandatory for Bluecore personnel.

Kofi Asante, CEO

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

1. Introduction and Scope

1.1 Scope and Applicability

This Quality Assurance Program Description (QAPD) describes the quality assurance program that Bluecore Energy, Inc. ("Bluecore") applies to activities affecting the quality of safety-related structures, systems, and components (SSCs) of the Nautilus facility. It covers design, procurement, fabrication, construction, and testing, in support of Bluecore's construction permit application under 10 CFR Part 50. The program meets the requirements of 10 CFR Part 50, Appendix B. Part 3 describes the selected QA controls Bluecore applies to specified nonsafety-related SSCs.

1.1.1 NRC Licensing Basis

This QAPD implements the quality assurance requirements of 10 CFR Part 50, Appendix B, as applicable to Bluecore's construction permit application under 10 CFR Part 50. It is the description of the quality assurance program required by 10 CFR 50.34(a)(7).

1.1.2 Application of Other Codes, Standards, and Requirements

Bluecore may perform activities subject to additional codes, standards, contractual requirements, or requirements of other regulatory authorities. Such requirements will be implemented through applicable procedures, procurement documents, contractual controls, or other licensing documents. They will not reduce or supersede the requirements of this QAPD for activities within its scope. Where an activity is subject to both this QAPD and another applicable requirement, Bluecore will establish and maintain the necessary interfaces through controlled implementing documents.

1.2 QAPD Revision Control

Proposed changes are prepared under Bluecore's document control procedures, reviewed by the Chief Quality Assurance Manager (CQAM), and approved by the Founder/CEO. Before a change is implemented, Bluecore evaluates and documents whether it reduces a commitment previously accepted by the NRC.

While the construction permit application is under NRC review, revisions to this QAPD are submitted to the NRC as updates to the application. After the construction permit is issued, changes are controlled under 10 CFR 50.55(f)(3): changes that do not reduce commitments may be implemented without prior NRC approval and are submitted to the NRC within 90 days; changes that reduce

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

commitments are submitted to the NRC and are not implemented until approved. After an operating license is issued, changes are controlled under 10 CFR 50.54(a).

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

2. Quality Assurance Program Details (18 Criteria)

2.1 - ORGANIZATION (Criterion I)

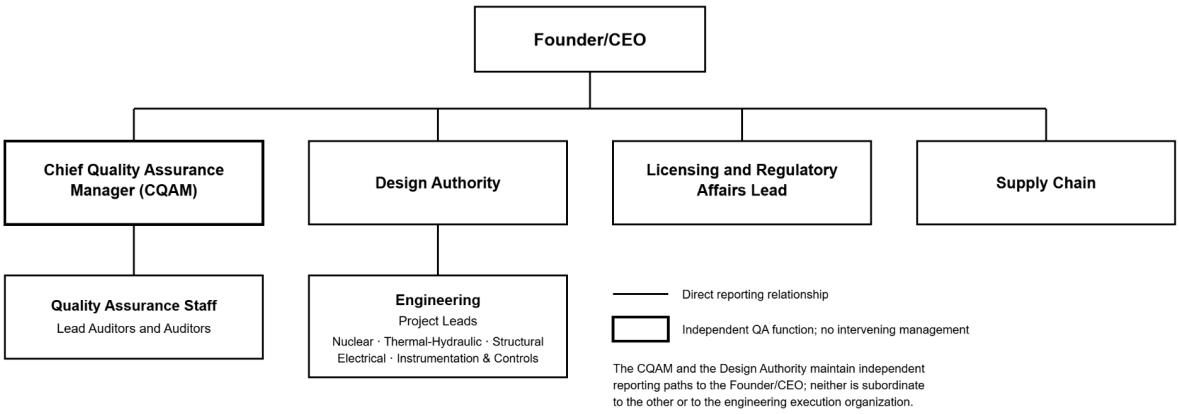
2.1.1 Organizational Structure and Reporting Lines

Senior management establishes the overall expectations for the effective implementation of the Quality Assurance Program and is ultimately responsible for obtaining the desired results. Any personnel performing independent QA verification, including onsite and offsite QA leads, are protected from conflicting priorities and non-QA duties, including cost and schedule responsibility. The organizational structure, functional responsibilities, levels of authority, and lines of communication for activities affecting quality are documented and maintained through implementing procedures.

The following positions constitute the principal organizational structure for nuclear quality assurance activities. Direct reporting relationships are as indicated:

- Founder/CEO — Has overall responsibility for Bluecore activities, including the Executive Policy Statement governing quality assurance. The following positions report directly to the Founder/CEO:
    - Chief Quality Assurance Manager (CQAM) — Reports directly to the Founder/CEO with no intervening management. This reporting relationship keeps the CQAM independent of cost, schedule, and design authority pressures. The CQAM has sufficient authority, direct access to responsible levels of management, access to work areas, and organizational freedom to identify and elevate quality and safety concerns without restriction.
    - Design Authority — Reports directly to the Founder/CEO and is responsible for establishing and maintaining the design bases for safety-related structures, systems, and components. The Design Authority holds approval authority over design outputs, design changes, and the technical justification for engineering dispositions for nonconforming items. The Design Authority role is organizationally separate from, and does not exercise supervisory authority over, the CQAM. Individual engineering department leads can and will function as Design Authority for their areas of responsibility.
    - Licensing and Regulatory Affairs Lead — Directs licensing and regulatory engagement activities and serves as the single point of contact with the NRC.

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240



The organizational structure ensures that:

- Quality is achieved and maintained by those assigned responsibility for performing the work.
- Quality achievement is verified by persons or organizations not directly responsible for performing the work, and that those performing the verification shall be free from non-QA duties and shall not have responsibility for competing priorities, such as cost or schedule.
- The CQAM and the Design Authority maintain independent reporting paths to the Founder/CEO, such that neither role is subordinate to the other or to the engineering execution organization.
- QA leads shall be free from non-QA duties and responsibility for competing priorities, such as cost and schedule.

Organizations and responsibilities for additional activities are incorporated into this QAPD in accordance with Section 1.2 as they become applicable.

Bluecore may delegate to others, such as contractors, agents, or consultants, the work of establishing and executing the QAP, or any part thereof, but retains responsibility for the QAP. When major portions of the QAP are delegated, Bluecore documents, before the work begins, how it exercises its responsibility for the delegated work, including the extent of Bluecore oversight, where oversight personnel are located, the qualifications required of those personnel, and the criteria used to staff the oversight function. The extent of oversight and the resources assigned are based on the scope, location, complexity, and safety significance of the delegated work. Bluecore identifies qualified personnel responsible for the quality of the delegated work before the work begins and evaluates the performance of the delegated organization at least annually. Positions identified in Section 2.1 may delegate activities to qualified personnel but retain responsibility for their effectiveness.

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

2.1.2 Independence of the Chief Quality Assurance Manager

The CQAM's direct reporting relationship to the Founder/CEO ensures independence from cost, schedule, and technical execution pressures. The CQAM is responsible for establishing the Quality Assurance Program and verifying that activities affecting quality are performed in accordance with it.

The CQAM holds a baccalaureate degree in engineering or a related science and has a minimum of four years of related experience, including two years of nuclear power plant experience, one year of supervisory or management experience, and one year of experience performing quality verification activities. Equivalent qualifications may be accepted when other factors demonstrate the individual's capability; the basis is documented and approved by the Founder/CEO. The size of the QA organization is commensurate with its assigned duties and responsibilities.

The CQAM's verification functions include:

- Identifying quality problems.
- Initiating, recommending, or providing solutions to quality problems through designated channels.
- Verifying the implementation of solutions.
- Assuring that further processing, delivery, installation, manufacturing, or use of products or procedures is controlled until proper disposition of a nonconformance, deficiency, or unsatisfactory condition has occurred.
- Authority to Stop Work: Issuing a Stop Work order to curtail Bluecore or supplier work as deemed necessary in response to quality problems. Every Bluecore employee has the authority and responsibility to stop work immediately when it is believed that current conditions pose an imminent danger to worker or public health and safety, or when work is not being performed in accordance with approved procedures.
- Reviewing and concurring in procedures that establish QA requirements for design, procurement, fabrication, construction, installation, and testing, and reviewing design specifications, drawings, and procurement documents to confirm they include the necessary QA, inspection, test, and acceptance requirements.

If the CQAM disagrees with actions taken by the organization and is unable to obtain a resolution, the CQAM shall refer the matter directly to the Founder/CEO, who shall render a final determination.

The CQAM has the authority and the responsibility to refer significant safety and quality matters directly to the Founder/CEO in a timely manner. Determinations regarding product conformance, the

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

issuance of Stop Work orders, and QA's control of nonconforming items and its concurrence in their disposition shall not be subject to override by Executive Team consensus.

2.1.3 Design Authority

The Design Authority is responsible for:

- Establishing, approving, and maintaining the design bases for all safety-related SSCs.
- Approving design outputs, including specifications, drawings, and analyses, prior to release for procurement, fabrication, or construction.
- Approving or concurring on design changes and field changes affecting safety-related SSCs.
- Providing or approving the technical justification for engineering dispositions of nonconforming items (repair, use-as-is) under Section 2.15 of this Part.

The Design Authority role may be assigned to a named individual or, prior to that appointment, to a designated position within the organizational structure. In either case, the role's responsibilities and authorities shall be documented in implementing procedures.

2.1.4 Functional Responsibilities

The Executive Team is responsible for:

- Establishing, maintaining, and controlling departmental work instructions to satisfy QAPD requirements.
- Ensuring that all departmental personnel are aware of and comply with applicable procedures and require responsible plant personnel to be notified of design changes affecting their duties prior to design changes being implemented
- Interfacing with QA Management in implementing changes affecting the quality system.
- Providing support for internal and external audits.

2.1.5 Engineering Organization

The Engineering organization designates project leads who are accountable for the quality of all safety-related design and engineering activities, executed under the direction and approval authority of the Design Authority. This is accomplished by:

- Independent checking of completed design documents and performing independent design reviews.

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

- Verifying and validating analytical software used in safety-related design.
- Identifying approved bidders, performing technical bid reviews, and selecting suppliers.
- Reviewing procurement documents, in conjunction with QA, to establish the necessary level of supplier surveillance.
- Reviewing supplier-furnished design documents to ensure appropriate manufacturing oversight.

2.1.6 Licensing and Regulatory Affairs

Licensing and Regulatory Affairs is responsible for licensing and licensing application activities and acts as the single point of contact with the NRC. This department administers the 10 CFR Part 21 evaluation and reporting program, ensuring that licensing-related requirements and commitments are addressed.

2.1.7 Supply Chain and Procurement

Supply Chain reports to the Founder/CEO. Supply Chain is responsible for the development, evaluation, and administration of the Bluecore supply chain. Responsibilities include interfacing with Engineering and Quality to ensure that suppliers of safety-related items are evaluated prior to award and that all applicable technical, regulatory (e.g., 10 CFR Part 21), and quality requirements are effectively translated into procurement documents. Implementing procedures assign responsibility for procurement planning; preparing, reviewing, and approving procurement documents; selecting suppliers; evaluating bids; and reviewing supplier QA programs before work begins, including the role of QA in each.

2.1.8 Interface Control

When more than one organization, internal or external, is involved in the execution of activities covered by this QAPD, the responsibilities, interfaces, and authority of each organization, and changes to them, shall be defined and documented. These are defined in contracts, purchase orders, implementing procedures, and associated project documents.

Contractors may perform delegated work under their own QA programs when approved as suppliers in accordance with Section 2.7. Bluecore verifies implementation through audits, evaluations, and oversight of the contractor's activities.

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

2.1.9 NQA-1 Implementation

This section is implemented in accordance with NQA-1-2022, Part I, Requirement 1, "Organization," as described in Part 4.

2.2 QUALITY ASSURANCE PROGRAM (Criterion II)

2.2.1 General

Procedures and instructions that control activities affecting quality are developed and approved before those activities begin. The QAP applies to activities affecting the safety-related functions of SSCs during design, procurement, fabrication, construction, and testing. SSCs and activities within the scope of the QAP are identified using documented criteria and maintained in controlled documents. Activities affecting quality are performed under controlled conditions as required by 10 CFR Part 50, Appendix B, Criterion II. Planning for activities affecting quality includes identifying any necessary special controls, processes, test equipment, tools, environmental conditions, personnel qualifications, skills needed, and inspection or test verification requirements.

Safety-related SSCs are subject to all applicable Appendix B requirements. A graded approach may be applied to the method and extent of verification but does not reduce those requirements. Nonsafety-related SSCs are addressed in Part 3.

2.2.2 Orientation and Training

Bluecore establishes and maintains formal orientation and training programs for personnel performing, verifying, or managing activities within the scope of this QAPD to assure that suitable proficiency is achieved and maintained.

- Orientation: Personnel receive orientation in QA subjects related to their specific function, including regulatory guides, applicable codes, standards, company procedures, and their job responsibilities.

- Training: Provided as needed to achieve initial proficiency, maintain proficiency, and adapt to changes in technology, methods, or job responsibilities. On-the-job training is utilized if direct hands-on application or experience is needed.

- Training/Qualification Records: Formal training/qualification is documented, including the objective, content, attendees, and date of attendance.

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

2.2.3 Qualification Requirements

- Nondestructive Examination (NDE) Personnel: Personnel performing NDE (e.g., Radiographic, Magnetic Particle, Ultrasonic, Liquid Penetrant) shall be qualified in accordance with the American Society for Nondestructive Testing (ASNT) Recommended Practices or Standards, as specified by applicable codes or design criteria.

- Inspection and Test Personnel: Qualified and certified in writing, in accordance with written procedures, based on education, experience, training, demonstrated capability, and, where the job requires it, physical capability such as visual acuity. Only certified personnel perform inspections and tests for acceptance. Job performance shall be reevaluated at intervals not exceeding three years. Personnel who have not performed inspection or testing in their qualified area for one year are reevaluated before resuming. Trainees perform inspections or tests only under the direct observation and supervision of a certified person until they are certified.

- Lead Auditors: Lead Auditors organize and direct audits, report findings, and evaluate corrective actions. They are qualified by the CQAM based on communication skills, training, knowledge of QA program requirements and of applicable codes, standards, and regulatory requirements, audit participation (a minimum of five QA audits within the three years before qualification, one of which is a nuclear QA audit within the year before qualification), examination, and maintenance of proficiency, as specified in NQA-1-2022, Part I, Requirement 2.

- Auditors and Technical Specialists: Auditors shall have appropriate training or orientation to develop their competence for performing audits. Technical specialists are qualified based on their specific technical expertise to support the audit team.

- QA Staff: Personnel who plan, implement, and maintain the QA program have at least a high school diploma and one year of related experience. Exceptions are approved case by case by the Founder/CEO.

2.2.4 Records of Qualification

The qualification of Inspection, Test, and Lead Auditor personnel shall be certified in writing. Records shall include the employer's name, identification of the person being certified, activities certified to perform, basis of qualification (education/experience), examination results (if applicable), results of physical examinations when required, results of periodic evaluations and capability demonstrations, date of certification/recertification, and the signature of the designated representative. Lead Auditor qualification records are updated annually.

2.2.5 Management Assessment

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

Management of each organization implementing the QAP assesses the adequacy of that part of the program for which it is responsible. This is to assure its effective implementation at least once annually or at least once during the life of the activity, whichever is shorter. In addition, management above or outside the QA organization objectively assesses the scope, status, adequacy, and effectiveness of the overall QA program on a regular basis.

2.2.6 NQA-1 Implementation

This section is implemented in accordance with NQA-1-2022, Part I, Requirement 2, "Quality Assurance Program," as described in Part 4.

2.3 DESIGN CONTROL (Criterion III)

2.3.1 General

Bluecore establishes and implements a process to control the design, design verifications, and design changes of items subject to the provisions of this QAPD. The design process includes provisions to control design inputs, outputs, changes, interfaces, records, and organizational interfaces within Bluecore and with suppliers. These provisions assure that design inputs (such as design bases, performance requirements, regulatory requirements, codes and standards) are correctly translated into design outputs (such as specifications, drawings, procedures, and instructions).

2.3.2 Design Inputs

Applicable design inputs shall be identified, documented, reviewed, and approved by the responsible engineering organization. Design inputs shall be specified to the level of detail necessary to permit the design activity to be carried out correctly and to provide a consistent basis for making design decisions, accomplishing design verification, and evaluating design changes.

2.3.3 Design Process & Design Analyses

Design activities shall be prescribed and documented in sufficient detail to permit verification. All design and analysis activities shall be performed under the direction of, and in accordance with design bases established by, the Design Authority. Design analyses (e.g., thermal-hydraulic, structural, nuclear, safety analyses) shall be performed in a legible, clear, and complete manner to allow an independent technically qualified person to understand and verify the results without recourse to the originator.

Documentation of design analyses shall include:

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

- Objective of the analysis.
- Design inputs and their sources.
- Results of literature searches or background data.
- Assumptions and identification of assumptions that require subsequent verification.
- Computer calculations, including computer type, software name, version/revision, inputs, outputs, verification & validation references, and application basis.
- Review and approval signatures.

Calculations are identifiable by subject (including the SSC), originator, reviewer, and date, and are retrievable. Design records include the final design outputs and their revisions, calculations and analyses, the computer programs used, and the design inputs and their sources. They are collected, stored, and maintained as QA records under Section 2.17.

2.3.4 Computer Software

Computer software is controlled as follows:

- **(a)** Software used to perform or support safety-related design, analysis, testing, or other activities affecting the quality of safety-related SSCs is controlled in accordance with NQA-1-2022, Part II, Subpart 2.7, "Quality Assurance Requirements for Computer Software for Nuclear Facility Applications." Commercial design and analysis software may be accepted for safety-related use in accordance with RG 1.231. Software used in safety-related calculations shall be verified and qualified before use, or the results shall be independently verified for each application. Verified computer programs are approved for use, with their version and permitted uses specified, before use in safety-related work. Software configuration management processes control software development, procurement, verification, testing, maintenance, and security.
- **(b)** Other software is outside the scope of this QAPD unless Bluecore designates it for control.

2.3.5 Design Verification

Design verification shall be performed by competent individuals or groups other than those who performed the original design. The verifier shall not have taken part in specifying design inputs or establishing the singular design approach. The originator's immediate supervisor may perform the verification only if the supervisor is the only technically qualified individual, did not specify a singular design approach or rule out design considerations, and did not establish the design inputs. The justification is documented and approved in advance, and the use of this provision is reviewed by QA

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

audit. The Design Authority determines whether a design output is verified by an individual or by an interdisciplinary group, based on its technical complexity, safety significance, and design interfaces. Design outputs that affect more than one discipline or cross a design interface are verified by an interdisciplinary group. Implementing procedures identify the verifier's responsibilities, the areas and features to be verified, the pertinent considerations to be checked, and the extent of documentation.

Design verification methods include:

- Design Reviews: Comprehensive review of design inputs, assumptions, methods, and outputs.
- Alternate Calculations: Verification of calculations using simplified or alternate mathematical methods.
- Qualification Testing: Testing of a defined test configuration under conditions that simulate the most adverse design conditions, with the technical basis for the simulated conditions and any scaling laws documented, and the results documented and evaluated against the design requirements. When verification is by test alone, the test is performed as early as practical and before installation reaches a point where correction would be impractical. Test control is described in Section 2.11..

Design verification shall be completed prior to relying on the component or system to perform its safety function, and prior to releasing design outputs for procurement, fabrication, or construction.

2.3.6 Design Change Control

Changes to design inputs, final designs, field changes, and temporary modifications shall be justified and subject to design control measures commensurate with those applied to the original design. Design changes shall be reviewed and approved by the same organizations that reviewed and approved the original design, unless another competent design organization is designated. Approved design changes are communicated to the personnel and organizations whose work they affect before the changes are implemented.

2.3.7 Interface Control

The Design Authority is responsible for establishing and managing design interfaces among participating internal and external design organizations and across engineering disciplines (e.g., nuclear, thermal-hydraulic, structural, electrical, Instrumentation & Controls “I&C”). Design interface controls shall include assignment of responsibility and establishment of procedures for review, approval, release, distribution, and revision of documents involving design interfaces. Design information transmitted across interfaces shall be formally documented and tracked. Conflicts or inconsistencies between disciplines shall be resolved by or with the concurrence of the Design Authority prior to release of affected design outputs.

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

2.3.8 NQA-1 Implementation

This section is implemented in accordance with the following NQA-1-2022 requirements, as described in Part 4:

- Part I, Requirement 3, "Design Control"
- Part II, Subpart 2.7, "Quality Assurance Requirements for Computer Software for Nuclear Facility Applications"
- Part II, Subpart 2.14, "Quality Assurance Requirements for Commercial Grade Items and Services"
- Part II, Subpart 2.20, "Quality Assurance Requirements for Subsurface Investigations for Nuclear Facilities"

2.4 - PROCUREMENT DOCUMENT CONTROL (Criterion IV)

2.4.1 General

Applicable design basis and other technical and regulatory requirements necessary to ensure adequate quality shall be included or referenced in documents for procurement of items and services. To the extent necessary, procurement documents shall require suppliers to have a QAP consistent with the applicable requirements of this QAPD, or allow suppliers to perform work under the Bluecore QAPD.

2.4.2 Content of Procurement Documents

Procurement documents issued at all tiers of procurement shall include provisions for the following, as deemed necessary by Bluecore:

- Scope of Work: A clear statement of the scope of work to be performed by the supplier.
- Technical Requirements: Specific technical requirements invoked by reference to drawings, specifications, codes, standards, regulations, or procedures, including appropriate test, inspection, and acceptance criteria.
- Quality Assurance Program Requirements: Specifies the QA program requirements applicable to the supplier. When 10 CFR Part 50, Appendix B and 10 CFR Part 21 apply, these requirements shall be explicitly invoked and flowed down to prime suppliers and sub-tier suppliers. As required by 10 CFR 21.31, procurement documents for basic components specify that 10 CFR Part 21 applies.

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

- Right of Access: Mandates access to the supplier's and sub-tier suppliers' facilities and records for source inspection, surveillance, or audit by Bluecore, its designated representative, and the NRC.
- Documentation Requirements: Identifies supplier records to be submitted for review, approval, or retention, including retention times and final disposition.
- Reporting Nonconformances: Specifies requirements for supplier reporting of nonconformances to Bluecore.
- Spare and Replacement Parts: Identifies spare and replacement parts and associated technical data required for ordering.
- Counterfeit, Fraudulent, and Suspect Items (CFSI): Requirements for preventing the supply of CFSI, and for notifying Bluecore when such items are identified.

2.4.3 Procurement Document Review and Changes

Procurement documents shall be reviewed, and the review documented, before contract award. Reviews are performed by qualified personnel who have access to pertinent information and an adequate understanding of technical and QA requirements. Changes to procurement documents affecting technical or quality requirements shall be subject to the same degree of control as the preparation of the original documents.

2.4.4 NQA-1 Implementation

This section is implemented in accordance with NQA-1-2022, Part I, Requirement 4, "Procurement Document Control," as described in Part 4.

2.5 - INSTRUCTIONS, PROCEDURES, AND DRAWINGS (Criterion V)

2.5.1 General

Activities affecting quality shall be prescribed by and performed in accordance with documented instructions, procedures, or drawings of a type appropriate to the circumstances. Such documents shall include quantitative or qualitative acceptance criteria for determining that prescribed activities have been satisfactorily accomplished. Management is responsible for ensuring all assigned personnel are qualified before performing any work.

2.5.2 Procedure Adherence and Content

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

It is Bluecore policy that procedures are strictly followed. Where procedures cannot be followed as written, work is stopped until the procedure is formally revised or a temporary change is approved. Instructions, procedures, and drawings shall incorporate applicable prerequisites, environmental conditions, proper tools, and mandatory inspection hold points. Users identify needed improvements to instructions and procedures, and these are evaluated and incorporated through the document control process.

2.5.3 NQA-1 Implementation

This section is implemented in accordance with NQA-1-2022, Part I, Requirement 5, "Instructions, Procedures, and Drawings," as described in Part 4.

2.6 - DOCUMENT CONTROL (Criterion VI)

2.6.1 General

The preparation, review, approval, issuance, and modification of documents that specify quality requirements or prescribe activities affecting quality (such as calculations, drawings, specifications, purchase orders, procedures, instructions, supplier documents, the safety analysis report, and nonconformance and corrective action reports, in hard copy or electronic form) shall be strictly controlled to ensure that correct, current documents are employed at work locations.

2.6.2 Document Control Measures

Document control implementing procedures shall establish:

- Unique document identification and revision control numbers.
- Specified distribution lists for controlled document release.
- Identification of individuals responsible for preparation, review, approval, and distribution.
- Review for technical adequacy and completeness prior to release.
- Measures to prevent the inadvertent use of superseded or obsolete documents.

2.6.3 Review, Approval, and Changes

Documents shall be reviewed and approved by qualified personnel other than the preparer. Major document changes shall be reviewed and approved by the same organization that performed the original review and approval. Minor editorial changes (e.g., typographical or formatting corrections)

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

that do not alter technical content or applicability may be authorized without undergoing full re-review, provided clear criteria for minor changes are established in implementing procedures.

2.6.4 NQA-1 Implementation

This section is implemented in accordance with NQA-1-2022, Part I, Requirement 6, "Document Control," as described in Part 4.

2.7 - CONTROL OF PURCHASED ITEMS AND SERVICES (Criterion VII)

2.7.1 General

The procurement of items and services is controlled to ensure conformance with specified requirements. As appropriate, controls are established for source evaluation and selection, evaluation of objective evidence of quality furnished by the supplier, source inspection, audit, and examination of items or services upon delivery or completion.

2.7.2 Supplier Evaluation and Selection

Prior to awarding a contract (e.g., a Purchase Order), Bluecore evaluates a supplier's capability to provide items or services in accordance with the requirements of the procurement document. The type and depth of the evaluation shall be commensurate with the significance of the item and service being procured. Evaluation methods shall include at least one of the following:

- Supplier's history of providing identical or similar items that perform satisfactorily in use.
- Supplier's current quality records supported by documented qualitative and quantitative information.
- Direct evaluation of the facilities, personnel, and the implementation of the supplier's quality assurance program (i.e., audits).

Bluecore may use audits or surveys performed by other organizations, such as NUPIC member utilities, other licensees, or ASME, as input to supplier qualification, provided that:

1. The audit scope covers the items or services being procured and the applicable NQA-1 requirements.
2. The audit was performed by qualified personnel and is currently within the required interval.
3. Bluecore obtains and reviews the audit report, the checklist or other objective evidence, and the status of open findings.

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

Bluecore documents its own determination of supplier acceptability. The existence of an external audit alone is not a basis for qualification.

2.7.3 Bid Evaluation

When bids are solicited, the bid evaluation shall include a determination of the supplier's capability to conform to the technical and quality assurance requirements. Prior to the award of a contract, Bluecore shall resolve or obtain commitments to resolve unacceptable technical or quality conditions resulting from the bid evaluation.

2.7.4 Supplier Evaluations

In accordance with NRC Regulatory Guide 1.28, Revision 6, Bluecore shall perform or arrange for periodic evaluations of qualified suppliers. These evaluations ensure suppliers continue to provide acceptable products and services and consider:

- Review of supplier-furnished documents (e.g., certificates of conformance, nonconformance notices, corrective actions).
- Results of receipt inspection activities and previous source verifications or audits.
- Operating experience and results of audits from other sources (e.g., NUPIC audit reports, NRC inspection reports, ASME surveys).

The scope and frequency of supplier oversight consider the importance, complexity, and quantity of the items or services supplied. Supplier performance information, including receipt inspection results and operating experience, is reviewed on an ongoing basis, and the annual evaluation is performed whether or not items were procured in the previous 12 months.

2.7.5 Acceptance of Item or Service

Methods used to accept an item or service from a supplier include at least one of the following:

- Supplier Certificate of Conformance: The certificate shall identify the purchased material/equipment, the specific procurement requirements met (including codes and standards), any approved changes/deviations, and must be signed by an authorized person responsible for the supplier's QA function.
- Source Verification: Performed at intervals consistent with the importance and complexity of the item or service, including monitoring, witnessing, or observing selected activities prior to shipment.

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

- Receiving Inspection: Purchased items shall be inspected to verify conformance to specified requirements (e.g., configuration, identification, physical characteristics, and freedom from shipping damage), including evaluations for counterfeit, fraudulent, and suspect items (CFSI).
- Post-Installation Testing: When used, test requirements shall be mutually established by Bluecore and the supplier.

Documentary evidence that items conform to procurement requirements is available at the site before the item is installed or used. It is retained at the site, or in controlled electronic records accessible from the site, and identifies the specific requirements, such as codes, standards, or specifications, that the item meets. Procurement, inspection, and test requirements are satisfied before an item is placed in service or used. Where post-installation testing is the acceptance method, the item is not relied on until the testing is complete and accepted.

2.7.6 Commercial Grade Items and Services

Bluecore establishes procedures for the dedication and/or acceptance of commercial grade items and services in accordance with NQA-1-2022, Part II, Subpart 2.14, "Quality Assurance Requirements for Commercial Grade Items and Services," and RG 1.164. When Bluecore dedicates a commercial grade item for safety-related use, it is responsible, as the dedicating entity, for identifying and evaluating deviations and for reporting defects and failures to comply for the dedicated item, as required by 10 CFR Part 21.

2.7.6.1 Commercial Grade Calibration and Testing Services

Commercial Grade Calibration and Testing services may be accepted using the industry guidance found in NEI 14-05A, Revision 1, "Guidelines for the Use of Accreditation in Lieu of Commercial Grade Surveys for Procurement of Laboratory Calibration and Test Services".

2.7.7 NQA-1 Implementation

This section is implemented in accordance with NQA-1-2022, Part I, Requirement 7, “Control of Purchased Items and Services,” as described in Part 4, including the exceptions in Section 4.3. Supplier audit scheduling, including the grace period, is described in Section 2.18.2.

2.8 IDENTIFICATION AND CONTROL OF ITEMS (Criterion VIII)

2.8.1 General

Controls shall be established to ensure that only correct and accepted items are used or installed. Identification shall be maintained on the items or in documents traceable to the items, or in a manner that ensures that identification is established and maintained throughout fabrication, erection, installation, and use.

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

2.8.2 Identification Methods

- Physical Identification: Physical identification shall be used to the maximum extent possible. The types of acceptable physical identification methods include, but are not limited to, written markings, etching, affixing stickers with bar or QR codes, stamping, and tags. The identification markings shall be applied using materials and methods that provide clear and legible identification and do not degrade the function or service life of the item.
- Traceability: Identification markings shall be transferred to each part of an identified item when subdivided. Surface treatments and coatings shall not obliterate or hide the identification marking unless other means of identification are substituted.
- Alternative Methods: If physical identification on the item is impractical or insufficient, physical separation, procedural control, or other appropriate means shall be employed.

2.8.3 Specific Requirements

- Traceability of Items: Bluecore shall ensure specific identification and traceability controls required by codes, standards, or specifications (e.g., identification of the item to applicable specification and grade of material; heat, batch, lot, part, or serial number) are rigorously maintained.
- Limited Life Items: Items with a limited calendar, shelf, or operating life or cycles, including chemicals, reagents, lubricants, and other consumables, shall be identified and controlled to preclude the use of items whose life has expired.
- Storage: Provisions shall be made to maintain item identification consistent with the planned duration and conditions of storage, including protection from environmental exposure.

2.8.4 NQA-1 Implementation

This section is implemented in accordance with NQA-1-2022, Part I, Requirement 8, "Identification and Control of Items," as described in Part 4.

2.9 - CONTROL OF SPECIAL PROCESSES (Criterion IX)

2.9.1 General

Special processes that control or verify quality (e.g., welding, heat treating, and nondestructive examination) shall be performed using qualified personnel and procedures in accordance with specified requirements. Any special processes not performed directly by Bluecore shall be conducted in accordance with the procurement and supplier control requirements of this QAPD. Managers are required to ensure all assigned personnel are qualified prior to performing any work.

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

2.9.2 Process Control

Bluecore shall control any special processes by using appropriate means, such as approved procedures, drawings, or travelers. The documentation for special processes shall provide the necessary instruction and include, as applicable:

- Applicable codes and standards (e.g., ASME BPVC Section III), including acceptance criteria.
- Personnel and equipment qualification requirements.
- Conditions necessary to accomplish the process (e.g., proper equipment, control parameters, environmental conditions, and calibration requirements).

2.9.3 Special Requirements and Records

For special processes not covered by existing codes and standards, or where quality requirements exceed those of existing codes, the requirements for the qualification of personnel, procedures, or equipment shall be documented. Records which include objective, content, attendees and date of attendance shall be maintained for the currently qualified personnel, processes, and equipment of each special process for any formal training/qualification programs,

2.9.4 NQA-1 Implementation

This section is implemented in accordance with NQA-1-2022, Part I, Requirement 9, "Control of Special Processes," as described in Part 4.

2.10 - INSPECTION (Criterion X)

2.10.1 General

Inspections required to verify conformance of an item or activity to specified requirements, or continued acceptability of items in service, shall be planned and executed. Characteristics subject to inspection and the inspection method shall be specified, and inspection results shall be documented. Inspection for acceptance shall be performed by qualified personnel independent of those who performed or directly supervised the work being inspected. Before an inspection, the inspector has the current inspection procedure, drawings, and specifications, and holds a current qualification for the inspection.

2.10.2 Inspection Planning and Hold Points

- Planning: Characteristics to be inspected, methods of inspection, and acceptance criteria shall be identified during the planning process. Inspection requirements and acceptance criteria shall include specified requirements contained in the applicable design documents.

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

- Sampling: Sampling of items to be inspected shall be performed in accordance with an engineering-approved standard statistical method.
- Hold Points: Where mandatory inspection hold points are required beyond which work shall not proceed without the specific consent of the designated representative (e.g., CQAM or Authorized Nuclear Inspector), the specific hold points shall be indicated in appropriate documents. Consent to waive specified hold points shall be recorded prior to the continuation of work.

2.10.3 In-Process and Final Inspections

- In-Process: Inspection shall be conducted for items under construction or otherwise in process as necessary to verify the quality of the item. If direct inspection is impossible, indirect control by monitoring processing methods, equipment, and personnel shall be performed. Both inspection and process monitoring are used when control is inadequate without both.
- Final Inspections: Completed items shall be inspected for completeness, markings, calibration, adjustments, protection from damage, and conformance to specified requirements. Final inspection shall include a records review of the results and resolution of nonconformances identified by prior inspections.
- Modifications: Any modifications, repairs, or replacements of items performed subsequent to final inspection shall require reinspection or retest to verify acceptability.
- Drawing and Specification Checks: Drawings and specifications used for in-process and final inspection are checked for dimensional accuracy and completeness before use, and the check is documented.

2.10.4 Inspection Records

Records shall be established, maintained, and at a minimum identify the item inspected, date of inspection, inspector, type of observation, results/acceptability, and reference to information on action taken in connection with nonconformances. Inspection results are documented by the inspector and reviewed by authorized, qualified personnel.

2.10.5 NQA-1 Implementation

This section is implemented in accordance with NQA-1-2022, Part I, Requirement 10, "Inspection," and Part II, Subparts 2.4, 2.5, and 2.8, as described in Part 4.

2.11 - TEST CONTROL (Criterion XI)

2.11.1 General

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

Tests required to collect data (such as for siting or design input), to verify conformance of an item or computer program to specified requirements, or to demonstrate satisfactory performance for service shall be planned and executed. Characteristics to be tested and test methods to be employed shall be specified. Test results shall be documented, and their conformance with test requirements and acceptance criteria shall be evaluated.

2.11.2 Test Requirements and Procedures

Test requirements and acceptance criteria are provided or approved by the responsible design organization. Tests (e.g., prototype, qualification, production, and preoperational tests) are performed under controlled conditions using approved test procedures or plans. These identify the test objectives, the test configuration, the prerequisites appropriate to the test, the acceptance criteria, and the data to be recorded. Temporary changes to an approved configuration made for testing are controlled under the design control process of Section 2.3. Tests are performed by qualified personnel.

2.11.3 Computer Program Test Procedures

Testing and development of required documentation for computer programs shall be performed in accordance with NQA-1-2022, Part II, Subpart 2.7, "Quality Assurance Requirements for Computer Software for Nuclear Facility Applications". Testing shall demonstrate that the program properly handles abnormal conditions, does not perform adverse unintended functions, and provides valid results encompassing the range of permitted usage. Periodic in-use manual or automatic self-check tests shall be prescribed for programs where errors or instrument drift can affect required performance.

2.11.4 Test Records

Test records shall be established and maintained to indicate the ability of the item or computer program to satisfactorily perform its intended function. Records shall include the item tested, date of test, tester, type of observation, results and acceptability, actions taken in connection with any deviations, and the person evaluating the test results.

2.11.5 NQA-1 Implementation

This section is implemented in accordance with NQA-1-2022, Part I, Requirement 11, "Test Control," and Part II, Subparts 2.4, 2.7, and 2.8, as described in Part 4.

2.12 - CONTROL OF MEASURING AND TEST EQUIPMENT (Criterion XII)

2.12.1 General

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

Tools, gauges, instruments, and other measuring and test equipment (M&TE) used for activities affecting quality shall be controlled, calibrated at specified intervals, adjusted, and maintained to required accuracy limits.

2.12.2 Calibration and Control

- Calibration standards: M&TE shall be calibrated against, and traceable to, certified equipment or reference standards having a known valid relationship to nationally recognized standards (or international equivalents). Calibration standards shall have accuracy sufficient for the intended use, as established in implementing procedures. Where the required accuracy cannot be achieved, the basis for acceptance shall be documented.
- Out-of-calibration evaluations: M&TE found out of calibration or overdue for calibration shall be tagged, segregated, or removed from service. When M&TE is found out of calibration, an evaluation shall be performed to determine the validity of previous measurement, inspection, or test results, and the acceptability of items previously inspected or tested since the last acceptable calibration.
- Status indicators: M&TE shall be marked, tagged, labeled, or otherwise identified to indicate calibration status and to establish traceability to calibration records.
- As-found condition: The as-found condition of M&TE shall be recorded before adjustment, so that out-of-calibration conditions can be evaluated.
- Records: Records of calibration status and of each item's suitability for its intended use are maintained.

2.12.3 Commercial Devices

Calibration and control measures are not required for commercial equipment (such as rulers, tape measures, and levels) if such equipment provides the required accuracy.

2.12.4 NQA-1 Implementation

This section is implemented in accordance with NQA-1-2022, Part I, Requirement 12, "Control of Measuring and Test Equipment," as described in Part 4.

2.13 - HANDLING, STORAGE, AND SHIPPING (Criterion XIII)

2.13.1 General

Handling, storage, cleaning, packaging, shipping, and preservation of items shall be controlled to prevent damage or loss and to minimize deterioration. These activities shall be conducted in accordance with established work and inspection instructions, drawings, specifications, or shipment

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

instructions. Foreign material is excluded from safety-related fluid systems and components during fabrication, installation, and testing, and cleanliness is verified and documented before closure.

2.13.2 Special Requirements and Environments

When required for critical, sensitive, perishable, or high-value items, specific procedures shall be used. Special equipment (such as containers, shock absorbers, and accelerometers) and special protective environments (such as inert gas atmospheres, specific moisture content or temperature levels) shall be specified, provided, and their existence verified.

2.13.3 Tools, Equipment, and Operators

Special handling tools and equipment shall be utilized and controlled where necessary to ensure safe and adequate handling. These tools shall be inspected and tested at specified time intervals or prior to use. Operators of special handling and lifting equipment shall be experienced and/or trained in the use of the equipment.

2.13.4 Marking and Labeling

Marking or labeling shall be utilized as necessary to adequately maintain and preserve the item, including indication of the presence of special environments or the need for special controls.

2.13.5 NQA-1 Implementation

This section is implemented in accordance with NQA-1-2022, Part I, Requirement 13, "Handling, Storage, and Shipping," and Part II, Subparts 2.1 and 2.2, as described in Part 4.

2.14 - INSPECTION, TEST, AND OPERATING STATUS (Criterion XIV)

2.14.1 General

The status of inspection and test activities shall be identified either on the items or in documents traceable to the items. This is necessary to ensure that required inspections and tests are performed and to ensure that items that have not passed the required inspection and tests are not inadvertently installed, used, or operated. The operating status of nuclear facility SSCs shall also be identified to prevent inadvertent operation.

2.14.2 Authority and Status Indication

- Authority: The authority for the application and removal of status indicators shall be specified in implementing procedures.

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

- Status Indication: Status indication shall be maintained through physical means such as tags, markings, labels, stamps, or other suitable methods (including electronic tracking systems) to prevent inadvertent installation, use, or operation.

2.14.3 NQA-1 Implementation

This section is implemented in accordance with NQA-1-2022, Part I, Requirement 14, "Inspection, Test, and Operating Status," as described in Part 4.

2.15 - CONTROL OF NONCONFORMING ITEMS (Criterion XV)

2.15.1 General

Items that do not conform to specified requirements shall be controlled to prevent inadvertent installation or use. Controls shall provide for identification, documentation, evaluation, segregation when practical, disposition of nonconforming items, and notification to affected organizations. Items identified as counterfeit, fraudulent, or suspect are controlled as nonconforming items.

2.15.2 Identification and Segregation

- Identification: Nonconforming items shall be identified with legible marking, tagging, or other methods, such as identifying and controlling the item as nonconforming in an electronic system. If identification of each nonconforming item is not practical, the container or the package containing the items shall be identified.

- Segregation: Nonconforming items shall be segregated, when practical, by placing them in a clearly identified and designated hold area until properly dispositioned. When segregation is impractical or impossible due to physical conditions (size, weight, access limitations), other precautions shall be employed to prevent inadvertent use.

2.15.3 Evaluation and Disposition

- Control: Nonconforming items shall be evaluated, and recommended dispositions shall be proposed. Further processing, delivery, installation, or use shall be prevented until an evaluation and approved disposition by authorized personnel has occurred and QA has released the item from hold.

- Disposition authority: Implementing procedures define who reviews and approves dispositions. Use-as-is and repair dispositions of nonconformances to design requirements are technically justified and approved by the Design Authority or designee. QA has independent authority to identify nonconforming items and keep them on hold. QA reviews and concurs in use-as-is and repair dispositions and verifies that dispositions are

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

implemented. Disagreements that cannot be resolved are elevated to the Founder/CEO under Section 2.1.2.

- Personnel: Personnel performing evaluations to determine disposition shall have demonstrated competence in the specific area, an adequate understanding of the requirements, and access to pertinent background information.
- Disposition: A disposition, such as use-as-is, reject, repair, or rework, shall be made and documented. This includes a technical justification for the acceptability of a nonconforming item dispositioned as "repair" or "use-as-is". Nonconformances to design requirements dispositioned as repair or use-as-is shall be subjected to design control measures commensurate with those applied to the original design. As-built records are updated to reflect the accepted condition when it affects the final installed configuration.
- Reexamination: Reworked or repaired items shall be reexamined in accordance with applicable procedures and with the original acceptance criteria, unless the disposition has established alternate acceptance criteria.

2.15.4 10 CFR Part 21 Interface

Nonconforming items are evaluated for 10 CFR Part 21 applicability as described in Section 2.16.3.

2.15.5 NQA-1 Implementation

This section is implemented in accordance with NQA-1-2022, Part I, Requirement 15, "Control of Nonconforming Items," as described in Part 4.

2.16 - CORRECTIVE ACTION (Criterion XVI)

2.16.1 General

Conditions adverse to quality shall be identified promptly, documented, classified by significance and corrected as soon as practicable. Reporting conditions adverse to quality is the responsibility of all Bluecore employees. The type of causal analysis utilized, and the corrective actions taken, shall be commensurate with the significance of the item and/or service affected by the adverse condition.

2.16.2 Significant Conditions Adverse to Quality

In the case of a significant condition adverse to quality, the cause of the condition shall be determined, and corrective action taken to prevent recurrence. The identification, cause, and corrective action for significant conditions adverse to quality and significant adverse trends shall be

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

documented and reported to appropriate levels of management. Completion of corrective actions shall be rigorously verified.

2.16.3 10 CFR Part 21 and 10 CFR 50.55(e)

The corrective action process provides for evaluating deviations and failures to comply, and for reporting defects and failures to comply associated with substantial safety hazards, as required by 10 CFR Part 21 for basic components and activities within that regulation's scope. The nonconformance (Section 2.15) and corrective action processes provide for identifying conditions that require a Part 21 evaluation. As required by 10 CFR 21.31, procurement documents for basic components specify that 10 CFR Part 21 applies. While Bluecore holds a construction permit, defects and failures to comply are also evaluated and reported in accordance with 10 CFR 50.55(e). Evaluation timeliness, supplier notification, and reporting responsibilities are established in implementing procedures.

2.16.4 NQA-1 Implementation

This section is implemented in accordance with NQA-1-2022, Part I, Requirement 16, "Corrective Action," as described in Part 4.

2.17 - QUALITY ASSURANCE RECORDS (Criterion XVII)

2.17.1 General

The control of quality assurance records shall be established with the schedule for accomplishing work activities. Quality assurance records shall furnish documentary evidence that items or activities meet specified quality requirements. Quality assurance records shall be identified, generated, authenticated, and maintained, and their final disposition specified. Records may be identified, generated, authenticated, and maintained in either a hard copy or electronic format. Records include, as applicable, the results of reviews, inspections, tests, audits, monitoring of work performance, and materials analyses, and closely related data such as qualifications of personnel, procedures, and equipment. Records, or their indexes, are traceable to the item or activity they cover. For electronic records that depend on software to be read, the software and its version are identified.

2.17.2 Electronic Records Management

Electronic QA records are managed in accordance with NQA-1-2022, Part II, Subpart 2.17, and NRC Generic Letter 88-18, “Plant Record Storage on Optical Disks.”

2.17.3 Authentication and Classification

- Authentication: Documents shall be considered valid records only if stamped, initialed, or signed and dated by authorized personnel or otherwise authenticated. Electronic documents shall be authenticated with comparable information, including identification on the media or

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

authentication information contained within or linked to the document itself. Electronic authentication uses controls that identify the authorized individual, such as unique user identification with a password or an electronic signature, and protects the authenticated record from unauthorized change.

- Classification: Records shall be classified as lifetime or nonpermanent. Lifetime records are those of significant value in demonstrating capability for safe operation, maintaining/repairing items, determining the cause of an accident, or providing baseline data for in-service inspections. Lifetime records are maintained for the life of the item. Nonpermanent records show evidence that an activity was performed but need not be retained for the life of the item. These classifications and their retention requirements apply to records in any medium.
- Corrections: Records are corrected only under procedures that require review or approval by the originating organization and that identify the correction, the date, and the person making it. A substantive change to an authenticated electronic record is made as a new or revised authenticated record.

2.17.4 Storage and Retention

- Storage Facilities: Records shall be stored at predetermined locations in facilities constructed and maintained to minimize the risk of damage from natural disasters, environmental conditions, infestation, or dust. Hard copy records shall be stored in a facility with a minimum two-hour fire rating (single storage) or in dual facilities located sufficiently far enough from each other to eliminate the chance of simultaneous hazard exposure.
- Retention and Maintenance: Records shall be protected from damage or loss and shall remain retrievable after hardware, software, or technology changes. Provisions shall be established to ensure no unacceptable degradation of electronic media occurs during the retention period.

2.17.5 NQA-1 Implementation

This section is implemented in accordance with NQA-1-2022, Part I, Requirement 17, "Quality Assurance Records," and Part II, Subpart 2.17, "Quality Assurance Requirements for Electronic Quality Assurance Records Systems," as described in Part 4.

2.18 - AUDITS (Criterion XVIII)

2.18.1 General

Audits shall be performed to verify compliance with the QAP requirements, to verify that performance criteria are met, and to determine the effectiveness of the QAP. These audits shall be performed in accordance with written procedures or checklists by personnel who do not have direct responsibility for performing the activities being audited.

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

2.18.2 Audit Scheduling and Frequencies

Audits shall be scheduled in a manner that provides coverage and coordination with ongoing activities, at a frequency commensurate with the status and importance of the activity.

- Internal Audits: Internal audits are scheduled based on the status and safety importance of the activities being performed. The audit program includes work delegated to others under Section 2.1.1 and periodic review of the retrievability, integrity, and retention of electronic records.
- External (Supplier) Audits: Supplier audits are performed in accordance with NQA-1-2022 as endorsed by RG 1.28, Revision 6. Suppliers on the Approved Supplier List are audited on a triennial basis (every three years), supplemented by an annual evaluation of the supplier's performance. A preaward audit that meets the requirements of this section may serve as the first triennial audit. Exceptions may be made for simple or standard items based on the applicable procurement and safety-related requirements, or based on the preaward survey criteria. Implementing procedures establish appropriate preaward evaluation criteria based on procurement significance, supplier performance, technical complexity and applicable QA requirements.
- Grace Periods: Scheduled audits and annual supplier evaluations may be performed up to 90 days after their due date, with documented justification approved by the CQAM. The next due date is set from the original due date.

2.18.3 Audit Preparation and Performance

- Audit Plan: The auditing organization shall develop an audit plan identifying the scope, requirements, audit personnel, activities to be audited, schedule, and written checklists.
- Audit Team Selection: Audit teams shall contain one or more Auditors, with one designated as a Lead Auditor who organizes and directs the audit.
- Performance: Elements selected for audit shall be evaluated against specified codes and requirements. Objective evidence shall be examined to the depth necessary to determine effective implementation.

2.18.4 Reporting, Response, and Follow-Up

- Reporting: An audit report shall be generated, signed by the Lead Auditor, and issued to the audited organization. It shall include a description of the audit scope, identification of auditors, a summary of results, and a description of each finding.
- Response and Follow-Up: Management of the audited organization shall investigate adverse findings, schedule corrective action (including measures to prevent recurrence), and notify the

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

auditing organization in writing. Follow-up action, including reaudit of deficient areas where indicated, shall be taken to verify that corrective action is accomplished as scheduled.

2.18.5 NQA-1 Implementation

- This section is implemented in accordance with NQA-1-2022, Part I, Requirement 18, "Audits," as described in Part 4.

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

3. NONSAFETY-RELATED SSC QUALITY CONTROLS

3.1 Nonsafety-Related SSCs - Significant Contributors to Plant Safety

Specific QAP controls are applied to nonsafety-related SSCs that are significant contributors to plant safety, but are not subject to 10 CFR 50, Appendix B. Bluecore applies specific controls to these items in a selected, graded manner targeted at those characteristics or critical attributes that render the SSC a significant contributor to plant safety. The controls are applied by criterion as follows:

- **Organization:** The organizations described in Section 2.1 apply these controls. A separate QA organization is not required.
- **Quality Assurance Program:** A separate or new QA program is not required; applicable sections of this QAPD are applied selectively. Personnel are trained for their assigned activities.
- **Design control:** Design requirements are identified and controlled. Normal supervisory review is an adequate design verification measure.
- **Procurement document control:** Procurement documents identify the applicable technical and quality requirements.
- **Instructions, procedures, and drawings:** Activities are performed using instructions, procedures, or drawings appropriate to the activity.
- **Document control:** Documents that prescribe activities are controlled so that current versions are used.
- **Control of purchased items and services:** Suppliers are selected based on their ability to meet procurement requirements. Items and services are accepted by receipt inspection, certificate of conformance, or other appropriate means.
- **Identification and control of items:** Items are identified and controlled as necessary to prevent use of incorrect or defective items.
- **Special processes:** Special processes are performed by qualified personnel using appropriate procedures or applicable codes.
- **Inspection:** Inspections are performed as necessary to verify conformance to specified requirements.
- **Test control:** Tests are performed as necessary to demonstrate that items will perform satisfactorily, using appropriate procedures.
- **Measuring and test equipment:** M&TE is controlled and calibrated as necessary to provide the required accuracy.
- **Handling, storage, and shipping:** Items are handled, stored, and shipped to prevent damage, deterioration, or loss.

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

- **Inspection, test, and operating status:** Status is identified as necessary to prevent inadvertent use or operation.
- **Nonconforming items:** Nonconforming items are identified and controlled to prevent inadvertent use.
- **Corrective action:** Conditions adverse to quality are identified and corrected through the corrective action program.
- **Records:** Records are maintained to furnish evidence that these controls were applied.
- **Audits:** For the nonsafety-related SSCs addressed in this Part only, audits independent of line management are not required, provided line management periodically reviews and documents the adequacy of the process. This provision does not apply to safety-related SSCs or activities, which are audited under Section 2.18.

3.2 Nonsafety-Related SSCs Credited for Regulated Events

Where the facility design credits nonsafety-related SSCs for meeting 10 CFR 50.48 (fire protection), 10 CFR 50.62 (anticipated transients without scram), or 10 CFR 50.63 (station blackout), Bluecore applies selected controls of this QAPD to those SSCs, using the approach in Section 3.1, to the extent the SSCs are identified as important to safety for those events. Quality requirements for those nonsafety-related SSCs are implemented as follows:

- Fire protection (10 CFR 50.48): Regulatory Position 1.7, "Quality Assurance," of RG 1.189, "Fire Protection for Nuclear Power Plants."
- Anticipated transients without scram (10 CFR 50.62): GL 85-06, "Quality Assurance Guidance for ATWS Equipment That Is Not Safety Related."
- Station blackout (10 CFR 50.63): Regulatory Position 3.5 and Appendix A of RG 1.155, "Station Blackout."

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

4. REGULATORY GUIDES AND QUALITY ASSURANCE STANDARDS COMMITMENTS

4.1 Quality Assurance Standard

Bluecore meets 10 CFR Part 50, Appendix B, by implementing ASME NQA-1-2022, "Quality Assurance Requirements for Nuclear Facility Applications," Part I and the Part II subparts identified in Part 2 of this QAPD. NQA-1-2022 is implemented as endorsed by RG 1.28, Revision 6, "Quality Assurance Program Criteria (Design and Construction)," including the regulatory positions in that guide. The only exceptions and clarifications Bluecore takes are those listed in Section 4.3. Commitment to a standard or guide does not constitute commitment to other documents referenced within it.

4.2 Commitments

The table below is the single list of documents Bluecore commits to in this QAPD. "Commitment" means Bluecore implements the document as stated."Conformance identified in the PSAR" means Bluecore identifies conformance with the applicable regulatory positions of the guide, or any alternative and its justification, in the preliminary safety analysis report.

Document	Revision / edition	Commitment type	Implemented in
ASME NQA-1, Part I	2022	Commitment	Part 2
ASME NQA-1, Part II, Subpart 2.1, “Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components for Nuclear Facilities”	2022	Commitment	2.13
ASME NQA-1, Part II, Subpart 2.2, “Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Nuclear Facilities”	2022	Commitment	2.13

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

ASME NQA-1, Part II, Subpart 2.4, “Installation, Inspection, and Testing Requirements for Power, Instrumentation, and Control Equipment at Nuclear Facilities”	2022	Commitment	2.10, 2.11
ASME NQA-1, Part II, Subpart 2.5, “Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete, Structural Steel, Soils, and Foundations for Nuclear Facilities”	2022	Commitment	2.10
ASME NQA-1, Part II, Subpart 2.7, “Quality Assurance Requirements for Computer Software for Nuclear Facility Applications”	2022	Commitment	2.3, 2.11
ASME NQA-1, Part II, Subpart 2.8, “Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems for Nuclear Facilities”	2022	Commitment	2.10, 2.11
ASME NQA-1, Part II, Subpart 2.14, “Quality Assurance Requirements for Commercial Grade Items and Services”	2022	Commitment	2.3, 2.7.6
ASME NQA-1, Part II, Subpart 2.17, “Quality Assurance Requirements for Electronic Quality Assurance Records Systems”	2022	Commitment	2.17
ASME NQA-1, Part II, Subpart 2.20, “Quality Assurance Requirements for Subsurface Investigations for Nuclear Facilities”	2022	Commitment	2.3
RG 1.28, “Quality Assurance Program Criteria (Design and Construction)”	Rev. 6	Commitment	Part 2
RG 1.164, “Dedication of Commercial-Grade Items for Use in Nuclear Power Plants”	Rev. 1	Commitment	2.7.6

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

RG 1.231, “Acceptance of Commercial-Grade Design and Analysis Computer Programs Used in Safety-Related Applications for Nuclear Power Plants”	Rev. 0	Commitment	2.3.4
RG 1.234, “Evaluating Deviations and Reporting Defects and Noncompliance Under 10 CFR Part 21”	Rev. 1	Commitment	2.16.3
RG 1.189, “Fire Protection for Nuclear Power Plants”	Rev. 5	Commitment (Regulatory Position 1.7 only)	3.2
RG 1.155, "Station Blackout"	Rev. 0	Commitment (Regulatory Position 3.5 and Appendix A only)	3.2
NEI 14-05A, “Guidelines for the Use of Accreditation in Lieu of Commercial Grade Surveys for Procurement of Laboratory Calibration and Test Services”	Rev. 1	Commitment	2.7.6.1
GL 89-02, “Actions to Improve the Detection of Counterfeit and Fraudulently Marked Products”	—	Commitment	2.4, 2.7, 2.15
GL 91-05, “Licensee Commercial-Grade Procurement and Dedication Programs”	—	Commitment	2.7.6
GL 88-18, “Plant Record Storage on Optical Disks”	—	Commitment	2.17.2
GL 85-06, "Quality Assurance Guidance for ATWS Equipment That Is Not Safety Related"	—	Commitment	3.2
RG 1.26, “Quality Group Classifications and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants”	Rev. 6	Conformance identified in the PSAR	—
RG 1.29, “Seismic Design Classification for Nuclear Power Plants”	Rev. 6	Conformance identified in the PSAR	—

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

4.3 Exceptions and Clarifications

1. Calibration and testing services from NIST and other government laboratories (NQA-1-2022, Part I, Requirement 7). Calibration and testing services provided by the National Institute of Standards and Technology (NIST), or by other government agencies or laboratories operating under an NRC-accepted or equivalent QA program for the specific service being procured, may be excepted from source evaluation and audit, provided the item or service is not itself safety-related hardware or software. Bluecore performs evaluations of these suppliers case by case under 10 CFR Part 50, Appendix B, Criterion VII, scaled to the safety significance of the procurement.
2. Supplier audit and evaluation grace period (NQA-1-2022, Part I, Requirements 7 and 18). See Section 2.18.2.

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

5. Acronyms, Abbreviations, and Symbols

Acronym	Meaning
ASME	American Society of Mechanical Engineers
ASNT	American Society for Nondestructive Testing
BPVC	Boiler and Pressure Vessel Code
CEO	Chief Executive Officer
CFR	Code of Federal Regulations
CFSI	Counterfeit, Fraudulent, and Suspect Items
CQAM	Chief Quality Assurance Manager
GL	Generic Letter
I&C	Instrumentation and Controls
M&TE	Measuring and Test Equipment
NDE	Nondestructive Examination
NEI	Nuclear Energy Institute
NIST	National Institute of Standards and Technology
NQA	Nuclear Quality Assurance
NRC	U.S. Nuclear Regulatory Commission
NUPIC	Nuclear Procurement Issues Corporation
QA	Quality Assurance
QAP	Quality Assurance Program
QAPD	Quality Assurance Program Description

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

RG	Regulatory Guide
SSC	Structures, Systems, and Components

Docusign Envelope ID: E03573C2-A651-8C0A-8287-41FACC36D240

6. References

Regulations

- 10 CFR 50.4, "Written communications"
- 10 CFR 50.34, "Contents of applications; technical information"
- 10 CFR 50.48, "Fire protection"
- 10 CFR 50.54, "Conditions of licenses"
- 10 CFR 50.55, "Conditions of construction permits, early site permits, combined licenses, and manufacturing licenses"
- 10 CFR 50.62, "Requirements for reduction of risk from anticipated transients without scram (ATWS) events for light-water-cooled nuclear power plants"
- 10 CFR 50.63, "Loss of all alternating current power"
- 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants"
- 10 CFR Part 21, "Reporting of Defects and Noncompliance"

NRC guidance

- RG 1.26, RG 1.28, RG 1.29, RG 1.155, RG 1.164, RG 1.189, RG 1.231, and RG 1.234, at the revisions listed in Section 4.2
- GL 85-06, GL 88-18, GL 89-02, and GL 91-05
- RIS 00-018, "Guidance on Managing Quality Assurance Records in Electronic Media"

Codes, standards, and industry guidance

- ASME NQA-1-2022, "Quality Assurance Requirements for Nuclear Facility Applications"
- ASME Boiler and Pressure Vessel Code, Section III
- NEI 14-05A, Revision 1, "Guidelines for the Use of Accreditation in Lieu of Commercial Grade Surveys for Procurement of Laboratory Calibration and Test Services"
- ASNT recommended practices and standards for qualification of NDE personnel, as specified by applicable codes