

Heritage Wind Project Preliminary Quality Assurance and Quality Control Plan

Heritage Wind, LLC

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Heritage Wind Project

Preliminary Quality Assurance and Quality Control Plan

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1. Statement of Authority and Responsibility

Heritage Wind, LLC (“Heritage Wind”) recognizes that effective quality control systems are essential when developing, constructing, and operating major electric generating facilities. Therefore, it is the policy of Heritage Wind-affiliated workers to adhere strictly to this Quality Assurance and Quality Control (“QA/QC”) Plan on each project that is executed. This QA/QC Plan was designed to ensure that all activities associated with the construction and operation of the Heritage Wind Project (“the Project”) conform with all applicable design, engineering, and installation standards as well as regulatory requirements, including construction codes applicable to wind turbine structures.

Full authority for the implementation and administration of the quality controls described in this plan has been delegated to the Contract Quality Control Manager (QCM). The QCM has the responsibility and organizational freedom to identify quality control problems, stop work, recommend solutions and verify resolution of such problems. The QCM shall also have the responsibility of documenting the established QA/QC Programs in a manner that strives to comply with applicable Quality Standards.

Project Managers are responsible for their assigned project's QA/QC activities. They may delegate the performance of their assigned duties to qualified individuals, but they shall retain full responsibility for completing their projects in strict accordance with this QA/QC Plan and any project-specific plans and specifications.

The quality of all subcontractors and vendors shall be the joint responsibility of the QCM and the applicable Construction Site Manager. All projects will be executed in a manner that emphasizes safety, quality, schedule and maximum cost effectiveness.

2. Organization

Heritage Wind management has the responsibility to define and document its policy and objectives for, and commitment to, quality. Management will ensure that its policy is understood, implemented, and maintained at all times and at all levels of the organization.

All Heritage Wind-affiliated workers are responsible for considering the QA/QC implications of their jobs and for identifying potential QA/QC concerns. Where a problem is identified, resolution of that problem will flow through the organizational chain of command as follows:

1. Field Employees
2. Craft Leaders
3. General Foreman
4. Field Superintendents
5. General Superintendent
6. Project QA/QC Manager
7. Project Manager

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8. Quality Control Manager
9. President

It is the responsibility of any Heritage Wind-affiliated worker or contractor that manages, performs, or verifies work affecting quality to:

1. Initiate action to prevent the occurrence of work or service nonconformity;
2. Identify and record any quality problems;
3. Initiate, recommend, or provide solutions through designated channels;
4. Verify the implementation of solutions; and
5. Control further processing, delivery, or installation of non-conforming work until the efficiency or unsatisfactory condition has been corrected.

3. Quality Assurance Program

The Heritage Wind QA/QC Plan is not a controlled document. A reference copy is available to all workers through their immediate supervisor. The Plan is designed to convey basic QA/QC procedures, guidelines, and instructions that must be followed by all Heritage Wind-affiliated workers.

The Heritage Wind Quality Assurance program and any program set forth by any approved Balance of Plan (BOP) Contractor working on behalf of Heritage Wind shall consist of the following key components:

1. Established QA/QC procedures and instructions that:
 - a. Comply with generally accepted industry standards, federal, State, and local regulating authorities, and the project specifications and standards established by the client; and
 - b. Ensure conformance with all applicable design, engineering, and installation standards as well as regulatory requirements, including construction codes applicable to the wind turbine structures.
2. The identification and timely issuance to the project team of the QA/QC Plan, and of any required controls, processes, inspection equipment, fixtures, tools, materials and labor skills needed to properly execute the project.
3. Updating, as necessary, of quality control, inspection, and testing techniques, including the development of new methods and procedures.
4. Identification of any commitments made which exceed available resources in sufficient time to properly acquire the required resources.
5. Clarification of the standards of acceptability as required to support the overall QA/QC program.
6. Review of the project process, construction, installation, inspection, and test procedures to ensure that applicable documentation reflects how activities are performed.
7. Effective maintenance of quality records to document and track performance and improvement.

4. Project Communication

Management will provide adequate resources and trained personnel as needed to promote the communication of QA/QC plans and procedures through the organization.

The requirements for inspection, testing and monitoring of the construction/installation processes and audits of the quality control and quality assurance plans shall be communicated to all personnel associated with Facility construction, operation, and maintenance.

5. Document Control

Project-specific QA/QC procedures and instructions for individual activities are maintained by the QCM and issued to Project Managers as controlled documents.¹ It is the Project Manager's responsibility to ensure specific activity QA/QC procedures and instructions are conveyed to the individuals, general contractors or subcontractors performing the specified tasks.

Prior to the commencement of construction, the Project Manager creates a "Project Job File". This file shall contain a complete set of all project-related contract documents, specifications, drawings, etc. Information generated during the life of the project shall be maintained in this job file in both paper and electronic formats.

A listing shall be made of all drawings, specifications, vendor data, etc. that are received and submitted to Heritage Wind for review and approval. A copy of all documents returned as either approved, or approved as noted, shall be maintained in the job file.

Revisions to the QA/QC documents shall be by section and approved for adequacy by authorized personnel prior to issuance. A revised table of contents indicating the newly issued approved and accepted revision shall accompany the revised sections. In the case of sample forms, the latest exhibit revisions will be noted in a revised "Listing of Exhibits." Any revisions to the contract documents shall be date stamped on the date received and reviewed by the Project Manager for any possible impact to the project. All changes after contract award shall be properly documented.

A complete set of all documents required for proper execution of the work shall be maintained at the project site. Any revisions made to these documents shall be immediately forwarded to the project site for use while executing the project. Any field changes to the work shall be properly noted on the project site set of the drawings. The project site set of the drawings shall show the work exactly as the work is ongoing and will be hereinafter referred to as the "As-Built" set of drawings.

¹ Document control in this context refers to managing document issuance to ensure Project personnel have the most up-to-date information available.

6. Control of Client/Customer Supplied Material and Services

The Heritage Wind QA/QC Plan provides a basis for the review of materials and services that are either delivered to, or provided to clients/customers. Conformance to specified requirements can easily be confirmed or refuted while providing certainty to management, agencies, and stakeholders. Proper control of materials and services shall include:

1. Adequately defined and documented requirements and acceptance specifications of Heritage Wind.
2. Documented quality system procedures and instructions to ensure that all activities are performed in accordance with established requirements.
3. Effective management support to ensure compliance and the use of the QA/QC procedures and instructions.
4. Client/Customer interfaces, communications, and review meetings that are well-defined, documented and maintained for future reference.

7. Inspections and Testing Control

All materials and equipment shall be inspected and tested to ensure conformance with the project requirements before they are released for use. Verification that all items conform to specified requirements of the quality plan shall be documented and filed in a project QA/QC file established for this purpose. In determining the amount and nature of inspections, consideration should be given to the control exercised at the manufacturing source and documented evidence of quality conformance provided from the supplier.

Where incoming materials are released for urgent construction purposes, the action shall be positively identified and recorded to permit immediate recall and replacement in the event of nonconformance to specified requirements.

During construction the Project Manager shall ensure that:

1. All inspection and testing activities are performed in accordance with the QA/QC Plan and documented procedures;
2. Ensure specification and drawing conformance using established process monitoring and control methods;
3. Ensure that all required inspections and tests have been completed and necessary reports have been received and verified before the finished work is released to Heritage Wind.
4. Identify and correct any nonconforming work.

The Heritage Wind QA/QC plan and any accepted project-specific BOP contractor QA/QC programs shall include documented procedures for final inspection and testing requirements, including those specified either by established quality procedures or by Heritage Wind.

The Project Manager shall ensure that all final inspections and testing activities are in accordance with the quality plan and documented procedures. Upon completion, all associated data and documentation shall be properly filed in the project QA/QC file and submitted to Heritage Wind, as required.

8. Non-Conformance Reporting and Resolution

The Project Manager shall ensure that all materials, products, equipment, and workmanship that are furnished, installed, and/or delivered to Heritage Wind meet the project specifications. Any non-conforming products, equipment, materials, or items of work shall be documented, recorded and reported to Heritage Wind immediately.

Proper notification to Heritage Wind of any unsuitable materials, equipment, configuration issues, design issues, design calculation errors, or workmanship shall be subject to the following non-conformance reporting procedures to ensure the proper construction contingency is determined and implemented:

1. To the extent that traceability is a specified requirement of the contract, individual products or product batches shall have a unique identification. This identification shall be recorded in the Job File and maintained in the project "As-built Drawings."
2. The inspection and test status of the non-conforming materials, work product or work item shall be identified by using markings, authorized stamps, tags, labels, routing cards, inspection records, test software, physical location, or other suitable means that indicate the nonconformance of materials/work with regard to inspections and tests performed.
3. Records shall identify the inspection authority responsible for the identification of the non-conformance.
4. The identification of inspection and test status shall be maintained, as necessary, throughout the project to ensure that the corrective actions have passed the required inspections and testing specified.
5. The Project Manager shall ensure that all records showing that materials, testing, and work initially identified as non-conforming have passed specified re-inspection and/or testing acceptance criteria are maintained in the project QA/QC file for future reference.
6. Based upon an Engineer or Owner evaluation and recommendation as applicable, one of the following proposed resolutions may be undertaken to address the non-conformance (e.g., construction contingency, expanded scope, etc.):
 - Use in as-is condition
 - Repair
 - Rework
 - Redesign
 - Replace
 - Return
7. Based upon Owner and Engineer evaluation and recommendation, the resolution shall be recorded within the nonconformance report.

9. Corrective and Preventive Action and Continual Improvement

The established QA/QC policies and procedures shall be reviewed at appropriate intervals by Heritage Management to ensure continuing suitability and effectiveness. These reviews will include assessment of the results of field audits

(See Section 10) and shall assess overall conformance to Heritage Wind requirements and expectations. Records of such reviews and audits shall be maintained.

All Heritage Wind-affiliated workers shall strive to improve the quality of work. The QA/QC program is a process of continuous improvement which requires input from all workers. All Heritage Wind-affiliated workers shall comply and endeavor to improve the process where possible.

10. Field Audits and Surveillances

A critical element of the Heritage Wind QA/QC Plan involves conducting field audits and surveillances. Conducting field audits provides Heritage Wind management and other stakeholders with a means of reviewing the established QA/QC procedure to ensure ongoing suitability and effectiveness. Additionally, field audits are necessary to:

1. Verify that an acceptable level of safety and quality is maintained in the execution of the work;
2. Monitor and control suitable processes and work characteristics during work execution;
3. Establish or review workmanship criteria that will be stipulated, to the greatest practicable extent, in written standards or by means of representative samples; and
4. Clearly identify the required approval of processes.

Field surveillance is integral to the QA/QC process since certain aspects of work cannot be fully verified by subsequent inspection and testing. Accordingly, monitoring through surveillance provides a means for verifying compliance with documented procedures and/or specifications.

11. Notification Regarding Construction Activities

In the planning phases of this Project, general Project information will be posted on the Applicant's website and communicated in local town hall meetings, as appropriate. Project information will be regularly posted on the website during the construction phase. Posted information will include the anticipated construction schedule, transportation routes and traffic control measures, and all other appropriate safety and security measures as needed. See the Complaint Resolution Plan for additional information regarding project notification and complaint receipt/resolution procedures.