## Appendix B.  Engineering Specifications Checklist (Guidance)

The following provides items to be considered for completeness of the specification. Depending on the nature of the specification and procurement process, items may alternatively be included in other procurement documents or may be deemed not applicable to the specification.

1.0 Scope

* The scope is clearly defined and is consistent with the Statement of Work.
* Requirements are appropriate for the item.
* Limited “extra” information is provided.

2.0 References

* Used appropriately.
* No conflicts or ambiguity.
* Revisions addressed [e.g., “latest edition” conveyed (preferred) or specific revision stated].

3.0 Requirements

* Requirements clearly defined.
* As-is conditions, interfaces, and tie-ins are clearly defined and are physically field-verified or required to be verified.
* Performance requirements are used where appropriate with a level of detail appropriate.
* Technical requirements, salient features, and critical characteristics are defined in measurable and verifiable terms with acceptance limits (and/or tolerances) and requirements.
1. Required items and performance
2. Design requirements
3. Materials of construction
4. Special processes (e.g., welding, heat treating, NDE)
5. Quality of workmanship, if different from referenced codes
6. Special cleanliness or cleaning requirements
* Special requirements addressed and specified, if appropriate (shelf life, long-term storage, barriers, lifting points, lifting devices, etc.).
* Requirements for personnel qualifications or certifications specified where required by applicable codes and standards.
* Submittals of special process procedures for review are specified.
* Quality requirements are defined and appropriate for procurement level and risk to project or reference is made to the document that defines the quality requirements.
* Critical design and quality assurance hold points and witness points are defined.
* Deliverables are clearly defined.
* Partial shipments of equipment parts, components and subassemblies are defined and include acceptance criteria.
* Specific codes and standards governing the work and other references are identified.
* Supplemental requirements of the codes and standards are incorporated as appropriate.
* Acceptance criteria, hold or witness points, submittal of inspection schedules specified.
* Installation requirements specified.
* Tests (including bench tests) and inspections necessary to demonstrate performance requirements are included. A listing of critical design and quality assurance hold points and witness points are submitted for review and approval.
* Performance attribute verification requirements are clearly defined and implement developed test and inspection plans, and source verification plans as appropriate.
* Compliance reviews (e.g., National Electric Code) are developed and included.
* Submittals are linked to technical requirements.
* References are used appropriately.
* There are no conflicts or ambiguities in the references.
* Specific revisions to codes, standards, and other references are used.
* Drawings and sketches contain sufficient detail to define expectations.
* The specification is consistent with the statement of work.
* Documentation and approvals clearly described.
* Applicable quality assurance program documentation is submitted for review and approval prior to commencement of work.
* Those records that the supplier is to maintain are identified, the retention period and disposition requirements are stated, and it is stated that they shall be accessible to project, as applicable.
* Records to be submitted are defined and the schedule for submittal of the records is established and consistent with partial shipments defined.

4.0 Document Quality

* Correct grammar and spellings.
* Sentences and wording is clear.
* Numbering and cross references correct.
* Requirements in one section not in conflict with requirements in other section.
* Document conforms to ESM Chapter Section Z10 Attachment F.
* Completed approval signature sheet.

5.0 Attachments

* Attachments are listed by attachment title or number and revision status, and attached in the same order as listed.
* Each page of attachments includes attachment number, revision number, specification number, and page number.