Appendix A.  Considerations in Developing Engineering Specifications (Guidance)

Consider the following when developing engineering specification:

* Project design criteria, item management level, item functional requirements, and design basis documents
* Applicable codes and standards with version expectations
* Applicable requirements of Engineering Standards program
* Appropriate quality standards and acceptance criteria
* Tolerances stated and as liberal (loose) as the design can allow (to reduce fabrication/construction cost)
* The need for design analysis as basis for the specification requirements; examples are structural, materials, thermal, hydraulic, fire hazards, radiation, or accident analysis
* Design or operational/ functional test requirements as necessary to assure that item will perform satisfactorily in service
* Witness and hold points, including drawing review and acceptance
* Requirements for packaging, handling, shipping, storage, cleaning, and protective coatings.

For safety class, safety significant, and ML-3 IDID (other equipment that performs an active important to defense-in-depth function as determined by the facility management) items:

Include a requirement for items to be packaged, shipped, handled and stored in accordance with ASME NQA-1, Part II, Subpart 2.2, *Quality Assurance Requirements for Packaging, Shipping, Receiving, Storage, and Handling of Items for Nuclear Power Plants*. Identify the levels (A, B, C, D) of the equipment and materials in accordance with this standard. For Level A items, identify the specific criteria as applicable.

* Supplier documentation requirements considering the following:
1. Information needed for design of interfacing facilities, e.g. equipment foundations, and loads, outline dimensions, electrical wiring information, and interconnecting piping
2. Assurance that equipment is capable of fulfilling its performance requirements (e.g., critical characteristic verification)
3. An appropriate degree of control of the supplier’s work processes; e.g., welding, heat treatment, non-destructive examination, material tests, and performance test results and reports
4. Information on painting, packaging, handling, storage, shipping, cleaning, installation, maintenance, and operability requirements necessary for construction
5. Information on spare and replacement parts or assemblies requirements, and the related data required for ordering these
* Data sheets which are used to convey engineering specification requirements to the Subcontractor or that are to be completed by the Subcontractor for the purpose of furnishing engineering information
* Quality program requirements
* Applicable construction and operating experience
* Maintenance features and requirements
* Accessibility and other design provisions for maintenance, repair, and in-service-inspection
* Identification, marking, or tagging requirements