



QA Regulatory Requirement

NRC Code of Federal Regulations contains requirements that must be met for nuclear power quality assurance programs (10CFR 50 Appendix B).

Component Classification

There are two major structures, systems, and component (SSC) classifications: Safety Related and Non-Safety Related.

Safety-Related

This term applies to structures, systems, components, procedures, and controls of a facility or process that are relied upon to remain functional during and following design basis events to assure (10 CFR Part 50.2):

- The integrity of the reactor coolant pressure boundary
- The capability to shut down the reactor and maintain it in a safe shutdown condition; or
- The capability to prevent or mitigate the consequences of accidents which could result in potential significant offsite exposures.

Safety and Quality Related Regulatory Documents and Codes/Standards

- Safety Related (NRC Reg. Guide 1.26)
- Quality Assurance (NRC Reg. Guide 1.28 with Rev. 4 to be issued in 2009)
- 10 CFR 50.55a for endorsement of ASME Codes and Standard editions
- ASME NQA-1 Standard for QA program requirements to 10CFR 50 Appendix B
- ASME Section III, for a manufacturer of Safety Related Vessels and Piping (NCA-4000)
- ASME Sections III, for a Material Supplier (NCA-3800 or 3900)

Examples: Reactor Vessel, Pressurizer, Primary Piping, Class 1E emergency ac power (Emergency Diesel Generator), Seismic Design Class 1

Non-Safety Related

There are four sub-classifications for Non-Safety Related Classifications, three of which have additional regulatory requirements/guidance.

Commercially Available Components

Examples: Lighting, Microsoft Software, Potable Water Systems

Significant Contributor to Plant Safety (NRC SECY 95-132)

Examples: Associated with passive plant design: Chemical and volume control system, normal residual heat removal system, and backup feed-water system

Radioactive Waste (NRC Reg. Guide 1.143)

Examples: Liquid Radioactive Waste System, Gaseous Radioactive Waste System, Solid Radioactive Waste System

Credited for Regulated Events (Augmented Quality) (NUREG 0800-SRP-17.5)

Examples: Fire Protection (10 CFR 50.48) (NRC Reg. Guide 1.189), Fire water pumps, fire main piping system, fire detection, ATWS (Anticipated transients w/o SCRAM) (10 CFR 50.62) (NRC Generic Ltr. 85-06), BWR: Alternate Rod Injection (ARI), Standby liquid control system (SLCS), PWR: Sensor output to final actuation device, Diverse SCRAM system, SBO (Station Blackout) (10 CFR 50.63) (NRC Reg. Guide 1.155), Alternate Battery Systems, Alternative off-site AC power sources