

## ASME NQA-1 Applied to Software Used at DOE Facilities

### Brief Course Description:

Software impacts nearly every aspect of a nuclear facility. Adequate controls must be in place to assure the safety and health of personnel and the public and the effective and efficient operation of facility equipment. To assure such controls are in place regulations, standards, and guidance need to be applied to the acquisition, development, operation, maintenance and retirement of software. This three-day course will examine the specific regulations, standards and guidance applicable to software used at Department of Energy nuclear facilities.

The course begins with an overview of the structure of ASME NQA-1 followed with a close review of how NQA-1 applies to software. With a clear understanding of NQA-1 as it applies to software the course continues with a discussion of the DOE requirements (DOE O 414.1C) and guidance (DOE G 414.1-4) related to software. The course finishes with a discussion of how to audit and assess software related projects.

### Key Topics Covered:

- Regulations, standards, and guidance related to software
- Applying NQA-1 and DOE G 414.1-4 to safety and non-safety software
- Software types and evolution of software at nuclear facilities
- Assessing and auditing software
- Relationship between DOE Order 414.1C and ASME NQA-1

### Who Should Attend:

Design engineers, software engineers, quality engineers, regulators, procurement personnel, program managers, and auditors.

### Prerequisites:

All participants are expected to bring a copy of 1) ASME-NQA-1-2000 or later edition, 2) DOE O 414.1C, *Quality Assurance*, and 3) DOE G 414-1.4, *Safety Software Guide for use with 10 CFR 830 Subpart A, Quality Assurance Requirements*.