

Principles of Nuclear Safety

Module 13

QUALITY ASSURANCE

Slide 1

Quality Assurance Definition

Quality assurance is a planned and systematic pattern of actions designed to provide adequate confidence that items and services will be of the required quality.

Slide 2

The QA Program

- Goal: that work will always be done properly
- is mandatory for work on safety related systems
- is described in detail in the QA Manual
- is designed to satisfy *CSA Standard N286*

Slide 3

Design Codes

- govern design, procurement, construction, operation and maintenance of plant structures and equipment
- ensure the quality of the physical plant
- Examples:
 - fire code
 - building code
 - ASME code for boilers & pressure vessels
 - ANSI code for pressure piping

Slide 4

CSA Standards for CANDU Plants

- N285--code for plant components
- N286--QA Requirements
- N288--code for concrete Containment structures
- N289--code for Environmental protection
- N289--code for Seismic design
- N290--Reactor control systems and instrumentation
- Z299--manufacturing QA programs
- B51---code for of boilers and pressure vessels
- Q396--software QA program

Slide 5

CSA Standard N286 Series

- N286.0 Overall QA Program Requirements
- N286.1 Procurement QA Program Requirements
- N286.2 Design QA Program Requirements
- N286.3 Construction QA Program Requirements
- N286.4 Commissioning QA Program Req'ts
- N286.5 Operations QA Program Requirements

Slide 6

Operational Quality Principles I

- 1) Define goals, objectives and policies, and ensure they are understood
- 2) Specify roles and responsibilities and ensure they are understood and accepted
- 3) Specify and communicate results to be achieved, and identify and allocate resources to achieve them
- 4) Hold individuals accountable for the work they do
- 5) Ensure people are competent at the work they do
- 6) Ensure the right people have the right information at the right time
- 7) Seek and use relevant experience

Slide 7

Operational Quality Principles II

- 8) Plan and control work
- 9) Use the right material, equipment and processes and control any changes to them
- 10) Verify work to ensure that it meets requirements
- 11) Identify and remedy deficiencies and their causes
- 12) Control the production, use, storage and retrieval of essential documents and records
- 13) Periodically review management and work processes to maintain and improve their effectiveness and efficiency

Slide 8