



AP1000 Initial Test Program

Kerri Kavanagh

Branch Chief

Quality Assurance Vendor Inspection

Branch – 3

**Division of Construction Inspection &
Operational Programs, Office of New
Reactors**

Initial Test Program

- The overall Initial Test Program (ITP) objective is to demonstrate that:
 - The plant has been constructed as designed,
 - The systems perform consistent with the plant design, and
 - Activities culminating in operation at full power are performed in a safe, controlled manner
- ITP consists of a series of tests categorized as construction and installation, preoperational, and startup tests. (DCD Section 14.4)
- Preoperational and startup testing is performed on those systems used to operate the plant or relied upon for safety, i.e. almost everything.

Initial Test Program

- Construction & Installation Testing: Construction Testing – Verifies adequacy of construction & installation process; and, Component Testing – Conducts initial equipment operation & functional checks
- Pre-Op Testing: System-level functional testing & integrated systems testing at normal operating conditions
- Startup Testing: Initial fuel load, Pre-critical tests, Initial Criticality, Low-power (<5%) testing, and Power ascension tests

Initial Test Program

- NRC inspects a sample and focuses on performance-based testing activities.
- Inspection Procedures have been developed.
- Inspection Manual Chapters in revision:
 - IMC 2504 editorial revision
 - IMC 2514 revision to include plants licensed under part 52
 - IMC 2515 to be reviewed
- Living process – will incorporate lessons learned

Initial Test Program

- Inspection efforts will include (on a sampling basis):
 - Programmatic Review
 - Procedure Review
 - Test Witnessing
 - Test Results Review
 - Quality Assurance Review

Initial Test Program

- Construction & Installation Testing, and Pre-operational Testing
 - are performed prior to the 10 CFR 52.103(g)
 - most of these tests are included in ITAAC
 - 53 of 149 pre-operational tests with ITAAC, are targeted for inspection
- Startup Testing is performed after the 10 CFR 52.103(g) finding
 - 20 Initial Fuel Loading and Pre-critical Tests
 - 4 Initial Criticality Tests
 - 7 Low Power Tests
 - 29 Power Ascension Tests

Questions?