



Definition of *As-Built*

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Background

- Due to widespread use of the term *as-built* in ITAAC, it is defined in Tier 1 of all DCDs
- Definition also appears in NEI 08-01 ITAAC closure guidance
- For 5 designs currently referenced by COLs, there are 4 different definitions under consideration

Original Definition

- *As-built* means the physical properties of a structure, system, or component following the completion of its installation or construction activities at its final location at the plant site
- NRC interprets this definition as not allowing credit for offsite ITA performance
- This version currently in DCDs for ABWR and APWR

Definition in NEI 08-01

- *As-built* means the physical properties of a structure, system, or component following the completion of its installation or construction activities at its final location at the plant site. Determination of physical properties of the as-built structure, system, or component may be based on measurements, inspections, or tests that occur prior to installation, provided that subsequent fabrication, handling, installation, and testing do not alter the properties
- This definition proposed in AP1000 DCD Rev. 17

Caveats to Definition in NEI 08-01

- Section 3.1.4 provides additional text on the definition of *as-built*
- Many ITAAC require verification of “as-built” SSCs. However, some of these ITAAC will involve measurements and/or testing that can only be conducted at the vendor site due to the configuration of equipment or modules or the nature of the test (e.g., measurements of reactor vessel internals). For these specific items where access to the component for inspection or test is impractical after installation in the plant, the ITAAC closure documentation (e.g., test or inspection record) will be generated at the vendor site and provided to the licensee.

Other Design Centers

- ESBWR DCD Tier 1 contains definition in NEI 08-01 plus additional text in §3.1.4
- EPR DCD Tier 1 contains two definitions:
as-built and *as-installed*

EPR

- *As-installed* - the physical properties of the structure, system, or component following the completion of its installation or construction activities at its final location at the plant site
- *As-built* - for components, the as-shipped condition of a component when it arrives at the plant site. For systems and structures fabricated onsite, it is equivalent to *as-installed*

Previous NRC Proposal

- *As-built* means the physical properties of a structure, system, or component following the completion of its installation or construction activities at its final location at the plant site. In cases where access to the component for inspection or test is impractical after installation in the plant, determination of physical properties of the as-built structure, system, or component may be based on measurements, inspections, or tests that occur prior to installation, provided that subsequent fabrication, handling, installation, and testing do not alter the properties.

Industry Concerns

- The term impractical is subject to varied interpretation and challenge
- There are advantages to performing tests and inspections under factory controlled conditions, rather than in the field, provided that test and inspection results are not altered by subsequent fabrication, transportation and installation activities
- It is premature – without any experience with either module construction or ITAAC implementation to try to draw the definition of as-built so tightly as to preclude effective options for the future

NRC Concerns

- ITAAC in early DCs were written without consideration of modular construction
- Vendors for early DCs have not determined impact of changing definition of *as-built*
- Some ITAAC need to be performed at final, in-plant location to adequately demonstrate acceptance criteria are met
- Some designs use both *as-built* and *as-installed*, but only define *as-built*
- Some designs use *as-built* in ITAAC in a manner that is in conflict with their definition

Proposal Under NRC Consideration

- *As-built* means the physical properties of a structure, system, or component following the completion of its installation or construction activities at its final location at the plant site. In cases where it is technically justifiable, determination of physical properties of the as-built structure, system, or component may be based on measurements, inspections, or tests that occur prior to installation, provided that subsequent fabrication, handling, installation, and testing do not alter the properties.

Proposal Under NRC Consideration (cont'd.)

- Next revision of NEI 08-01 would:
 - Provide explanatory text on what “technically justifiable” means
 - Provide examples of types of ITAAC where the industry & NRC have agreed there is technical justification to perform ITAAC closure at offsite location
 - Provide examples of types of ITAAC where the industry & NRC have agreed that ITA must be performed at final, in-plant location

Additional Proposal Under NRC Consideration

- Adopt two different terms to distinguish between those ITAAC than can be performed offsite and those ITAAC that must be performed at their final in-plant location (e.g., *as-built* and *as-installed*)

Industry Actions

- Decide whether resolution should be generic or design-specific
- Review ITAAC to ensure consistent use of terminology throughout
- Review ITAAC to ensure that definition adopted will be implementable
- Identify specific ITAAC for consideration as examples in revision of NEI 08-01