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Manifesting Design-Based Parameters into Post-Construction Inspection Planning

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ABSTRACT

Post-construction inspections and tests provide information on the integrity of operating process equipment and systems. This information is used to determine if the equipment is operable, inoperable, or in a degraded (e.g., unsafe) condition. As such, critical input to an effective in service inspection and test plan includes known/expected failure modes and minimum design limits; parameters typically identified during the design phase. This paper emphasizes the importance of making these design-based parameters apparent to those responsible for maintaining the systems and equipment in a safe and reliable condition.

Maintainability and testability, as elements in the design process, are becoming more important for lifelong safe operation of ever more complex/advanced processes. Designed maintainability often results in an inherently safer design through elimination of maintenance critical issues and

through improved detectability. As important, however, are: 1) the establishment of design-based inspections and tests, including type, extent, and frequency; and 2) the minimum limits of acceptability and the technical basis thereof. These parameters provide the foundation for inspection and test plan to which operational experience can be added.

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