

REQUEST FOR ADDITIONAL INFORMATION 333-2407 REVISION 1

4/13/2009

US-APWR Design Certification

Mitsubishi Heavy Industries

Docket No. 52-021

SRP Section: 18 - Human Factors Engineering

Application Section: 18.11

QUESTIONS for Operating Licensing and Human Performance Branch (AP1000/EPR Projects) (COLP)

18-21

NUREG-0711, Section 12.4.6, Criterion 1 states:

Aspects of the design that were not addressed in V&V should be evaluated using an appropriate V&V method. Aspects of the design addressed by this criterion may include design characteristics such as new or modified displays for plant-specific design features and features that cannot be evaluated in a simulator such as CR lighting and noise.

The US-APWR DCD, Section 18.11.2, first bullet point states:

Aspects of the design that were not addressed in the design V&V are evaluated using an appropriate V&V method. Aspects of the design addressed by this criterion may include design characteristics such as new or modified displays for plant-specific design features and features that cannot be evaluated in a simulator, such as control room lighting and noise

The US-APWR DCD restates the NUREG-0711 criteria and does not demonstrate, with sufficient detail, **how** criterion 1 of NUREG-0711 section 12.4.6 will be met. The information to meet this criterion should:

- Provide a complete process description
- Provide a flow diagram, or similar graphic example, that illustrates the relationship of the different process steps to each other (if applicable)
- Contain a sufficient description of quality, and technical requirements, to enable the staff to verify that the product conforms to the intent of the methodology

Please provide detailed information to satisfy criterion 1 of NUREG-0711, section 12.4.6.

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NUREG-0711, Section 12.4.6, Criterion 2 states:

The final (as-built in the plant) HSIs, procedures, and training should be compared with the detailed design description to verify that they conform to the design that resulted

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from the HFE design process and V&V activities. Any identified discrepancies should be corrected or justified.

The US-APWR DCD, Section 18.11.3 states:

Facility design changes are documented and analyzed for their potential impact on HSIs. Those design implementation issues that negatively impact human performance are identified as HEDs and are tracked and dispositioned. HFE design modifications are documented in a periodic status report.

The US-APWR DCD does not demonstrate, with sufficient detail, **how** criterion 2 of NUREG-0711 has been met. The information to meet this criterion should:

- Provide a complete process description
- Provide a flow diagram, or similar graphic example, that illustrates the relationship of the different process steps to each other (if applicable)
- Contain a sufficient description of quality, and technical requirements, to enable the staff to verify that the product conforms to the intent of the methodology

Please provide detailed information to satisfy criterion 2 of NUREG-0711, section 12.4.6.

18-23

NUREG-0711, Section 12.4.6, Criterion 3 states:

All HFE-related issues documented in the issue tracking system should be verified as adequately addressed.

The US-APWR DCD, Section 18.11.2, third bullet point states:

All HFE-related issues documented in the issue tracking system are verified to be adequately addressed

The US-APWR DCD restates the NUREG-0711 criteria and does not demonstrate, with sufficient detail, **how** criterion 3 of NUREG-0711 will be met. The information to meet this criterion should:

- Provide a complete process description
- Provide a flow diagram, or similar graphic example, that illustrates the relationship of the different process steps to each other (if applicable)
- Contain a sufficient description of quality, and technical requirements, to enable the staff to verify that the product conforms to the intent of the methodology

Please provide detailed information to satisfy criterion 3 of NUREG-0711, section 12.4.6.