Public Meeting

Carbon Fiber Reinforced Plastic (CFRP) Repair – Future Applications and R&D Gaps

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Current R&D Gaps in Materials, Design, and Inspection of CFRP Repairs

- ***What should be adequate factor of safety for CFRP materials***
  - ***ASME BPV Code does not have any recommendation***
- ***Material adjustment factors for various environments at various operating temperature ranges***
  - ***Available data does not cover the whole range***
- ***Test method for Stress Intensification Factor for CFRP materials***
- ***What should be the maximum allowable operating temperature***
  - ***Could be affected by accident temperature as well***

Current R&D Gaps in Materials, Design, and Inspection of CFRP Repairs

- ***Inspection screening techniques for assessing composite integrity (e.g., detection of delamination)***
- ***Inspection techniques for accurate characterization of delamination flaws***
- ***Critical flaw size that needs to be detected in the substrate at terminal end?***
- ***Critical flaw size that needs to be detected in the CFRP composite at the terminal end and throughout the repair?***
- ***CFRP performance with varying flaw types and sizes?***

Future Applications

- ***Can the repair be used for high temperature application***
  - ***What is the temperature limit?***
- ***Structural reinforcement applications, versus fully structural***
- ***Composite patch for temporary repair followed by permanent repair as per CC N-871-1***