



**RIC 2009  
Emerging Issues  
Materials and Mechanical**

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**Introduction**

- 3 basic types of tube material in U.S.
  - Mill Annealed Alloy 600 – 10 units
  - Thermally Treated Alloy 600 – 17 units
  - Thermally Treated Alloy 690 – 42 units
- Implications of cracking in thermally treated alloy 600 tube material

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**Industry Proposal**

- Flaws observed in the tubes in the tubesheet region
- Industry proposed to redefine pressure boundary to limit the scope of inspection in tubesheet region and to permit flaws to remain in service

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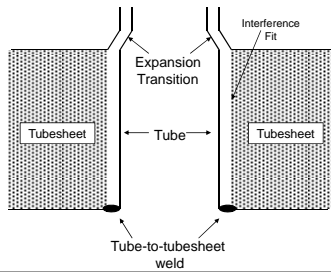
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### Tube-to-Tubesheet Joint



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### NRC Review

- NRC staff identified several technical issues with original proposal
- Industry proposed an interim approach which relies on integrity of tube-to-tubesheet weld
- Staff approved these requests on an interim basis

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### Weld Integrity

- Integrity of tube-to-tubesheet weld is a potential concern with this interim approach
- If original industry approach not viable, the integrity of the weld will need to be verified

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### Current Interactions

- NRC staff and industry interacting to determine if original industry proposal is viable
- Industry is the lead for developing their technical basis
- NRC staff is monitoring industry results
  - Information used to determine whether NRC action is needed to address weld integrity

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### Summary

- Generic approach to this issue is preferred
- If weld must be relied upon, additional inspections may be necessary and inspection of welds would need to be reflected in Technical Specifications

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