

<p><i>NCSX RFD</i> <i>Part I</i></p>	<p><b>Number: 14-005</b></p>	<p><b>RFD Description:</b> <b>For C1 only -Waiver of Post Machining Inspection for Internal Defects in High Stress Area &amp; Radiography on Weld Repair</b></p>
<p><b>Initiator:</b> <b>P. Heitzenroeder</b></p>	<p><b>Organization:</b> <b>PPPL</b></p>	
<p><b>List of Impacted Documents:</b> None</p>		
<p><b>Cost Impact: (If none, so state)</b> None</p>		
<p><b>Schedule Impact: (If none, so state)</b> Will reduce the schedule by ~2 days.</p>		
<p><b>State Requirement Deviation is Requested For: (Specification, SOW, drawing, etc.)</b> Reference: NCSX-CSPEC-141-03-09, para. 4.2.3.2 (Post Machining Inspection for Internal Defects in High Stress Areas) and 3.2.3.2.2 (Weld Repairs)</p>		
<p><b>Full Description of the Deviation Requested: (Use continuation pages, e-mails, letter, sketches, etc. as needed and include amplifying information as appropriate to support deviation request.)</b></p> <p><u><b>For C1 only:</b></u></p> <ul style="list-style-type: none"> <li>• <b>Waives the requirement for 4.2.3.2 Post Machining Inspection for Internal Defects in High Stress Areas. This inspection required radiography of what was previously thought to be the highest stress area of the casting (~10% of the T area). Since the spec was written, more stress analysis was performed which indicates this is not a high stress region. Max. stress is 137 MPa in the T region vs. 215 in the shell area. Additionally, fracture/fatigue data generated since the spec writing indicates fatigue is not an issue for the required 4 x cycles even with a flaw 3 x 9 mm.</b></li> <li>• <b>Waives the requirement for radiographic weld inspection of a weld repair in the T area IF satisfactory Liquid Penetrant Examination is demonstrated (Para. 3.1.1.6.2). The repair is ~7" x 2" x 1/2-1/4" deep. In this particular case, after much discussion involving B. Nelson, R. Keilbach, D. Williamson, L. Sutton and myself it was determined that waiving the radiographic inspection could save 2 days, and in this case presented an acceptably small risk.</b></li> </ul>		
<p><b>Attachments: e-mail with background information.</b></p>		
<p><b>Initiator Signature: _____</b></p>		

**Attachment to "Deviation Request For C1 only -Waiver of Post Machining Inspection  
for  
Internal Defects in High Stress Area & Radiography on Weld Repair"**

**From:** Phil Heitzenroeder

**Sent:** Wednesday, September 14, 2005 12:57 PM

**To:** Bradley E. Nelson; Hutch Neilson; Bob Keilbach (Robert.Keilbach@wgint.com);  
David

E. Williamson; Frank A. Malinowski

**Subject:** Conference call at 2 today to discuss possibly dropping the post machining radiography.

**Importance:** High

Please join a conference call at 2 to consider if we could drop the post machining radiography. Background:

- Radiography is performed at the foundry with a sensitivity of 2% of the casting thickness.
- Flaws are "upgraded" and re-radiographed.
- So far, the machine shop hasn't seen any voids or oxide inclusions – it looks like MTK did a very good job of removing the flaws.
- Currently, radiography post machining is required in the "high stress" area of the T section with the difference being that the sensitivity is 1% of the casting thickness.
- This was specified prior to us having fracture data and final stresses. Below is the stress plot for the A casting. Peak stress is ~160 MPa. As shown in the fatigue plot below, Stellite is good for 4 X life at 200 MPa, even with a 3 x 9 mm initial flaw. (Dave, Brad can you look up what is the highest stress in all castings prior to the call?)

Considering this, can we drop the post machining radiography and save a few days of schedule?

Call in info: 1-877-952-1506; passcode 833648,

Thanks!

Phil

<i>NCSX RFD Part III</i>	<b>Number: 14-005</b>	<b>RFD Description: For C1 only -Waiver of Post Machining Inspection for Internal Defects in High Stress Area &amp; Radiography on Weld Repair</b>
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<b>RLM: Brad Nelson</b>	<b>Organization: ORNL</b>
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**Impact on Interfaces with Other WBS Elements/Items: (If none, so state)**  
**NONE**

**RLM Recommendation:**

**Approve**    **Do Not Approve**

**Additional remarks:**

**RLM Signature:** \_\_\_\_\_

**Project Disposition:**

**Approved. No ECP required.** \_\_\_\_\_  
**NCSX Systems Engineering Support Manager**

**Approved. ECP - assigned and processed.**

**Not Approved. Reason(s) for disapproval:**

