| NCSX RFD Part I | **Number: RFD-14-013** | **RFD Description: Change to C-4 through C-6 Flange Seats from a Spherical Seat to a Counterbore Seat** |
|---|---|---|

| **Initiator: Kevin Bowling and Phil Heitzenroeder** | **Organization: Major Tool/PPPL** |
|---|---|

**List of Impacted Documents:** ***(Specification, MIT/QA Plan, SOW, drawing, etc.)***
**Drawing SE141-116**

**Cost Impact:** ***(If none, so state):***
***None realizable;the primary motivation for this change is to save machining and inspection time.***

**Schedule Impact:** ***(If none, so state):***
***Machining and inspecting a counterbore is much easier to perform than a spherical seat. This is expected to save several hours of machining and inspection time and expected to avoid non conformance conditions – it was not possible to achieve the tolerances required for the spherical seats on C1 and C2. These were accepted "as is" but will require time –consuming lapping at PPPL to rectify.***

**Quality Impact:** ***(If none, so state):***
***Whereas it was not possible to achieve conforming tolerances on C1 and C2 with spherical seats, tolerance conformance is expected with the counterbores.***

**State Requirement Deviation is Requested For*: (Specification, MIT/QA Plan, SOW, drawing, etc.):* Drawing SE141-116**

**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.):***

**During technical meetings at MTM the week of January 3rd, MTM identified difficulties encountered machining and inspecting the spherical seats on the flanges. MTM requested that consideration be given to changing the spherical seats to conical seats, starting with the C-3 casting and for all follow-on castings. Subsequently, counterbores were suggested as a replacement for the conical seats so that custom "pucks" could be inserted with an appropriate configuration (eg, conical seat, conical groove, flat) The counterbored seats should be easier to machine and inspect. See the attached figure "C3 Counterbore Seat Detail Sketch".**

**Attachments:**

**Initiator Signature: Kevin Bowling (MTM)/Phil Heitzenroeder (PPPL) Date: 1/18/2006**

| NCSX RFD Part II | Number: 14-013 | RFD Description: Change to C-4 through C-6 Flange Seats from a Spherical Seat to a Counterbore Seat |
|---|---|---|
| RLM: Brad Nelson/Wayne Reiersen for BEN | Organization: PPPL | |

**Impact on Interfaces with Other WBS Elements/Items:** ***(If none, so state):***
**NONE**

**RLM Recommendation:**

☒ **Approve** ☐ **Do Not Approve**

**Additional remarks:**

**See attached sketch of the C-4 counterbore seating alignment (typical) and sections of drawing SE141-116 (Datum D & C) to show the location for the C-3 flange casting seats.**

**The NCSX Project will develop a more permanent solution for the Type A and B castings within one (1) week and will incorporate into Revision 11 of the CSPEC.**

**Does this Change Impact Material Already Procured or Parts/Assemblies Already Assembled/Manufactured using this Material:** ☒ **Yes** ☐ **No**

**If "Yes", what is the recommended disposition of this material/part/assembly? Accept C-1 through C-3 castings "as is."**

**RLM Signature:** Brad Nelson

Digitally signed by Brad Nelson
DN: cn=Brad Nelson, c=US, o=ORNL, ou=FED, email=nelsonbe@ornl.gov
Date: 2006.01.26 15:35:17 -05'00'

**Project Disposition:**

☐ **Approved. No ECP required.**

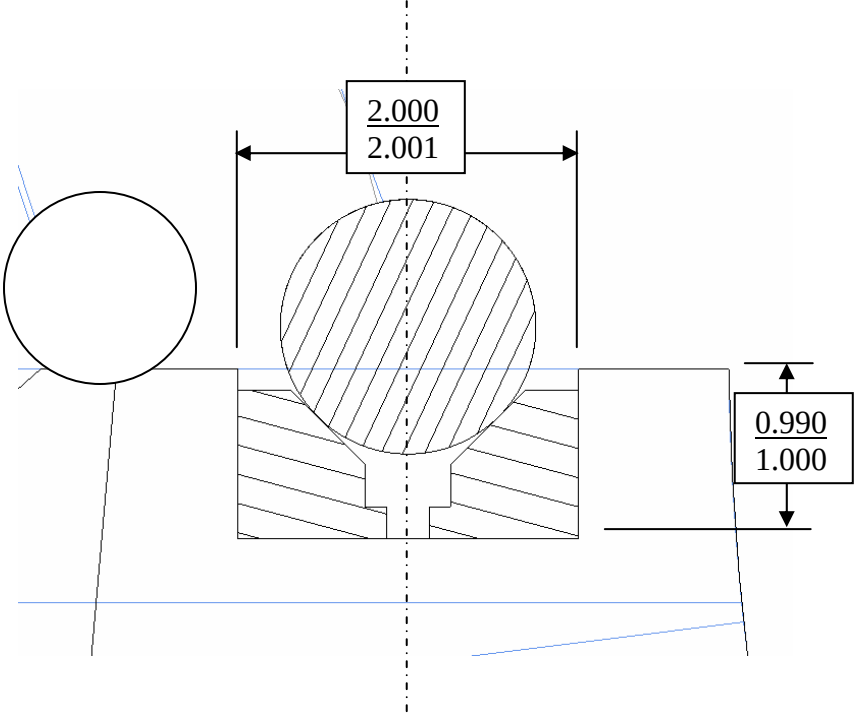
☒ **Approved. ECP -042 being processed to pickup this change.**

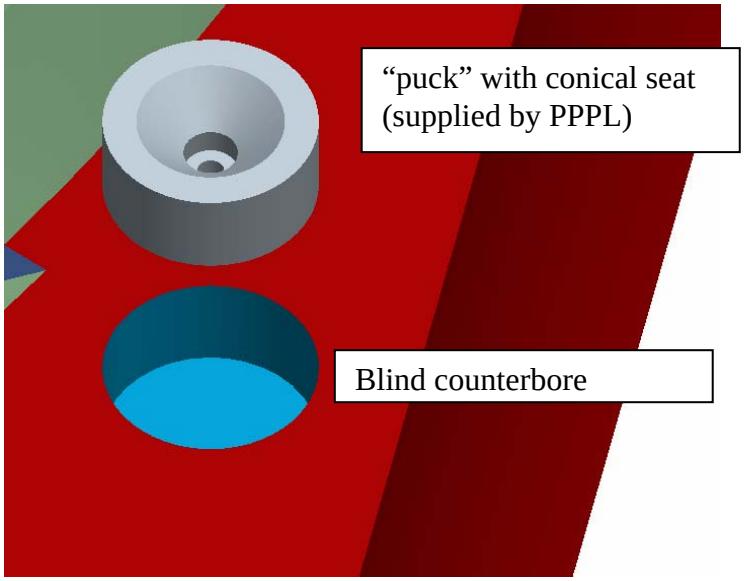
Bob Simmons

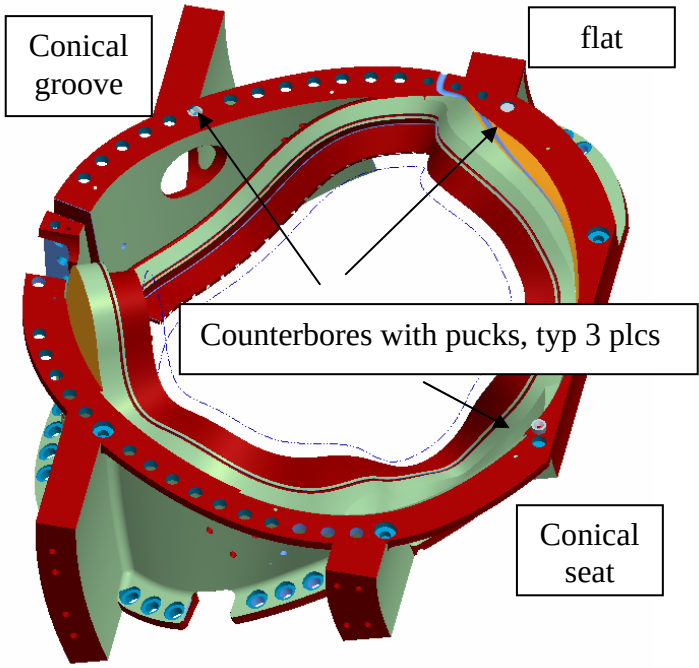
Digitally signed by Bob Simmons
DN: CN = Bob Simmons, C = US
Reason: I have reviewed this document
Date: 2006.01.26 15:25:35 -05'00'

**NCSX Systems Engineering Support Manager**

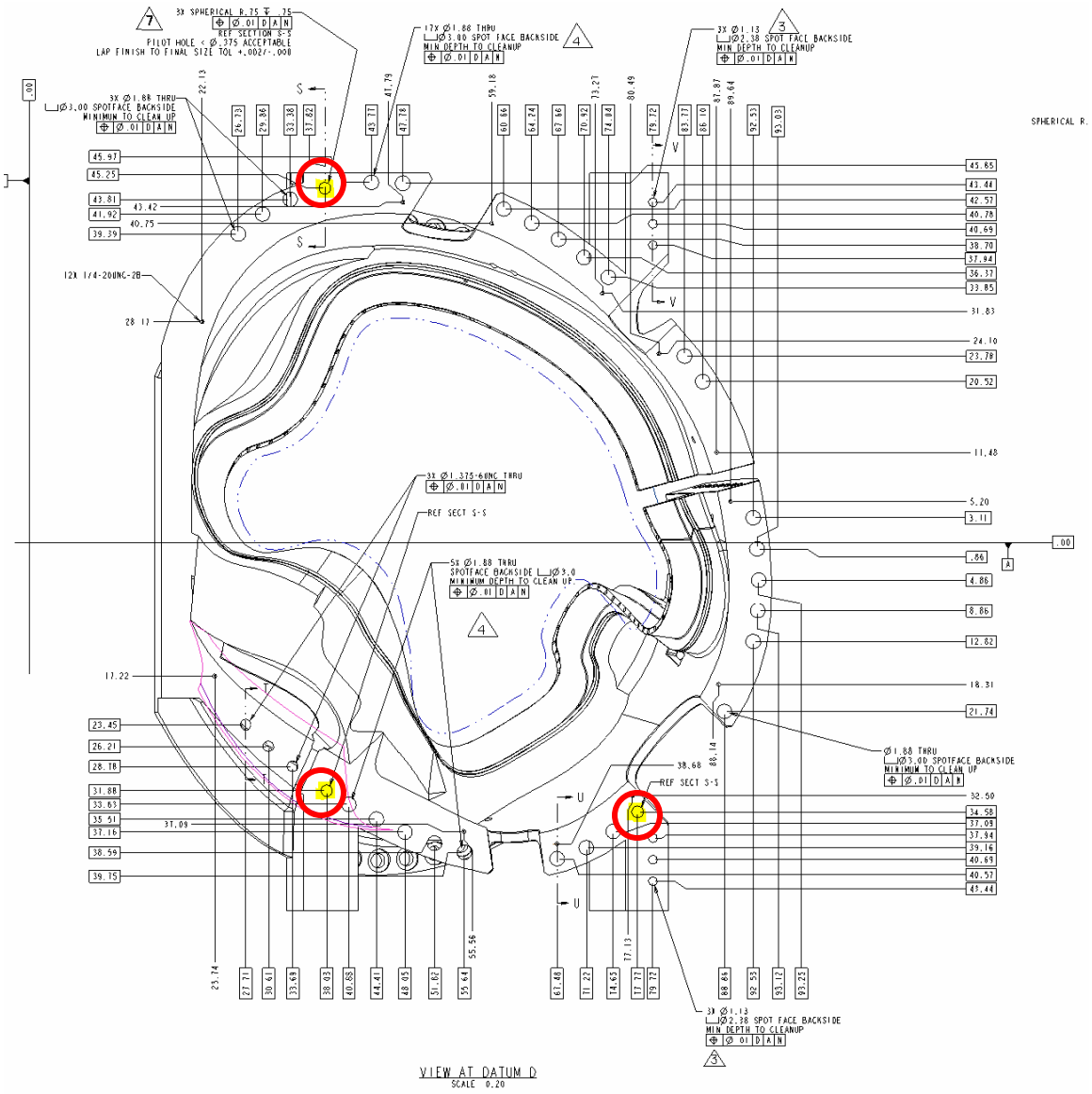
☐ **Not Approved. Reason(s) for disapproval:**



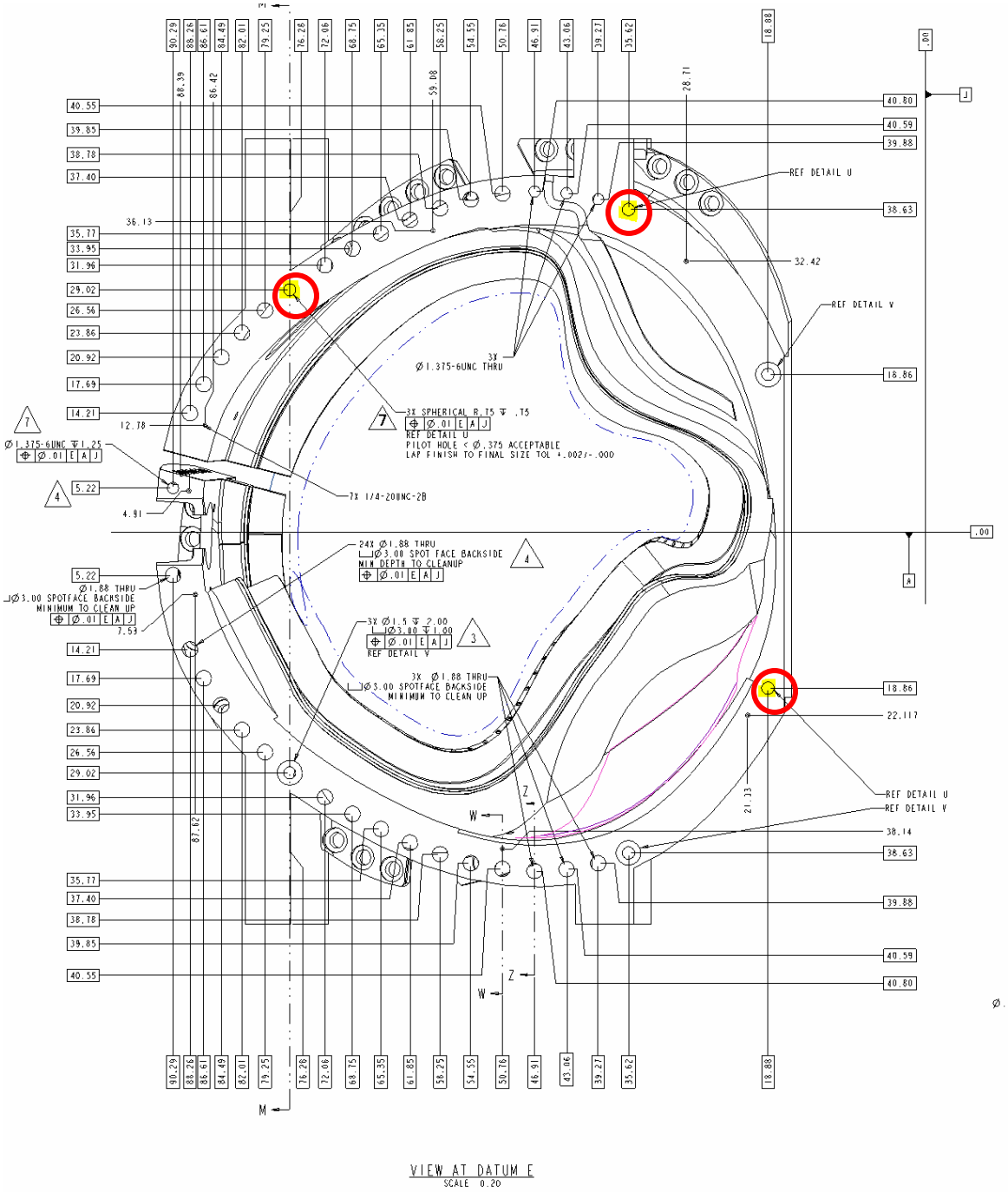




**C-4 Counterbore Seat (Typical) Detail Sketch**




**Section from SE141-116 (Datum D) Showing Location of Holes in Yellow Highlight and Circles**




**Section from SE141-116 (Datum C) Showing Location of Holes in Yellow Highlight and Circles**