

Feb 4, 2009

| Respon. | Item | Date | Notes |
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| | 1. Project | | |
| | <ul style="list-style-type: none"> • Discussion of meeting format • Designer Priorities | | Begin DC Power design in March. Paul working on bus designs. |
| Egebo | <ul style="list-style-type: none"> • Progress on the Primivera entry of the plan | Feb 28, 2009 | |
| Dudek | <ul style="list-style-type: none"> • Distribute announcement of website to project | | Will post results of CD options and results of investigations. Will use memos to document. any submissions should be added to the drop folder and followed by email to R. Simmons with instructions to where it belongs on the website. |
| | <ul style="list-style-type: none"> • Link to the CS Upgrade website | | http://nstx-upgrade.pppl.gov/Engineering/CSU_Engrg_index.htm |
| | 2. Design Requirements | | |
| Neumeyer | <ul style="list-style-type: none"> • General Requirements Document - DRAFT (Signed off by?) | Feb 28, 2009 | Waiting for comments from menard and Ono. Need PFC heat loads which will come from scheduled meeting Raj. |
| Perry | <ul style="list-style-type: none"> • General arrangement drawings for test cell | Ongoing | Erik is the space czar any changes should be run through him. |
| Neumeyer | <ul style="list-style-type: none"> • A more limited OH and PF operating envelope needs to be developed for the design basis assumption | GRD updte: 2/28 Menard equilibria: TBD | Developing a graded approach to design first for worst case and then relax requirements if that doesn't work. Will be added to the GRD. Menard to provide more information on the "expected envelop". |
| Neumeyer | <ul style="list-style-type: none"> • A coil protection system needs to be incorporated into the project plans to ensure that the envelope is suitably constrained. | Plan by 2/28 | Not included in the current plans, but will be estimated into the CDR plan. RIS replacement? Initiated Neumeyer to come up with a plan Action:Neumeyer |
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| | 3. TF Bundle | | |
| Fan | <ul style="list-style-type: none"> • Consider measurements on NSTX using accelerometers may shed light on what what factor is appropriate. | TBD | HM to come up with locations for accelerometers. Titus analysis also indicating there may be some excitation |
| Hatcher | <ul style="list-style-type: none"> • Disruption loads have not yet been factored in. The application of a dynamic load factor less than 1.0 seems appropriate due to the impulse nature of the disruption loading. | Mar 15, 2009 | Ron using opera to develop model |

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| Woolley | <ul style="list-style-type: none"> Preliminary results suggest that the turn-turn insulation shear in the TF bundle is within the allowable stress limit even without the implementation of a torque collar below the TF joint, above the OH coil. | Feb 18, 2009 | Memo documenting results in a couple weeks. |
| Woolley | <ul style="list-style-type: none"> Further analysis is needed to confirm this finding | | |
| Woolley | <ul style="list-style-type: none"> <i>Additional analysis should be performed to determine if the same is true without any torsional restraint at the ends of the TF bundle, i.e. if the spline/umbrella load path is eliminated</i> | | |
| | 4. TF Bundle Joint Connection | | |
| Woolley | <ul style="list-style-type: none"> Whether bolting below the flex is feasible or not depends on what the allowable current density is and the area lost to bolting? Analysis should be performed to assess this as soon as possible | Feb 11, 2009 | |
| Woolley | <ul style="list-style-type: none"> Are bolts below the flex accessible? | TBD | |
| | <ul style="list-style-type: none"> What design and fabrication method is appropriate for the flex connector, providing the necessary IP and OOP flexibility, while being able to withstand the forces without fatigue failure? | | Requires concept to determine |
| | <ul style="list-style-type: none"> <i>braid connection</i> <i>cable connection</i> <i>water-jet connection</i> | | |
| Woolley | <ul style="list-style-type: none"> What joint/flag flexibility is appropriate, in-plane (IP)? | Feb 11, 2009 | |
| Woolley | <ul style="list-style-type: none"> What joint/flag flexibility is appropriate, out-of-plane (OOP)? | Feb 11, 2009 | |
| Woolley | <ul style="list-style-type: none"> How does the OOP of flexibility relate to the gap between the flex connector and the OOP support structure? | Feb 11, 2009 | |

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| woolley | <ul style="list-style-type: none"> Options for the female side of the bolting need to be assessed, including use of inserts versus the use of bolting plates embedded in the copper | | |
| woolley | <ul style="list-style-type: none"> <i>It would be desirable for the bolts to provide both contact pressure and a reaction against shear loading due to the vertical force on the flex</i> | | |
| Woolley | <ul style="list-style-type: none"> Document OOP and IP loading | Feb 18, 2009 | |
| 5. Umbrella Structure & Outer TF Leg | | | |
| Heitzenroeder | <ul style="list-style-type: none"> Need to develop a plan to deal with the items below | Feb 11, 2009 | |
| Heitzenroeder | <ul style="list-style-type: none"> Enhance the umbrella structure to reduce stresses due to twist and bulge by adding welded or bolted material in configuration TBD. | | |
| Heitzenroeder | <ul style="list-style-type: none"> Enhance the umbrella structure to reduce loading on the cast aluminum clamps | | |
| Heitzenroeder | <ul style="list-style-type: none"> Enhance the existing turnbuckle system to improve its strength and stiffness but without relocation or modification which would exceed the present physical envelope | | |
| Heitzenroeder | <ul style="list-style-type: none"> Preliminary results suggest that the umbrella lids, if made of the appropriate thickness, could provide their torque restraint function without the implementation of a spline gear for thermal expansion. This needs to be confirmed by further analysis including buckling of the center column. If deployed symmetrically on top and bottom, would allow the thermal expansion to be equalized about the midplane, which is advantageous | | |
| 6. Vacuum Vessel Structure | | | |
| Perry | <ul style="list-style-type: none"> Look at inside of Vessel and determine where reinforcement can be added. | Feb 11, 2009 | Midplane in RF region is cluttered Erik to provide link to for photos of internal hardware |

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| Heitzenroeder | <ul style="list-style-type: none"> The most appropriate way forward appears to include the following actions which require further study, development, and analysis: | | Need to run model with the RF ports incorporated to see if the that section of the vessel is strong enough without reinforcement |
| Heitzenroeder | <ul style="list-style-type: none"> Enhance the VV midplane strength by welding a band of material around the inner surface of the midplane, where interferences are relatively minor. | | |
| 7. Cooling Water | | | |
| Dudek | <ul style="list-style-type: none"> Need to assign engineer to perform this work | Feb 28, 2009 | |
| 8. New | | | |
| Chrzanowski | <ul style="list-style-type: none"> Sent out request for interest for the copper TF bundle conductor both in and extruded and in a machined configuration | | |
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