

RF Operations: Commissioning the RF systems and antenna conditioning

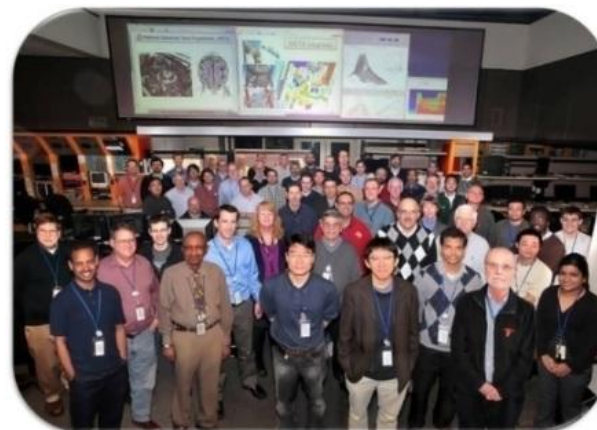
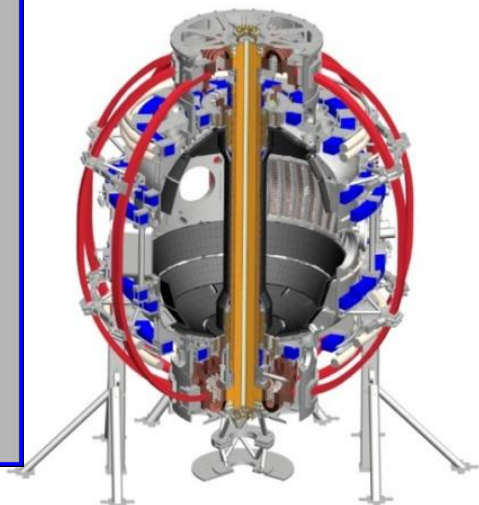
J. Hosea et al.

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NSTX-U Pre-Forum Meeting 2

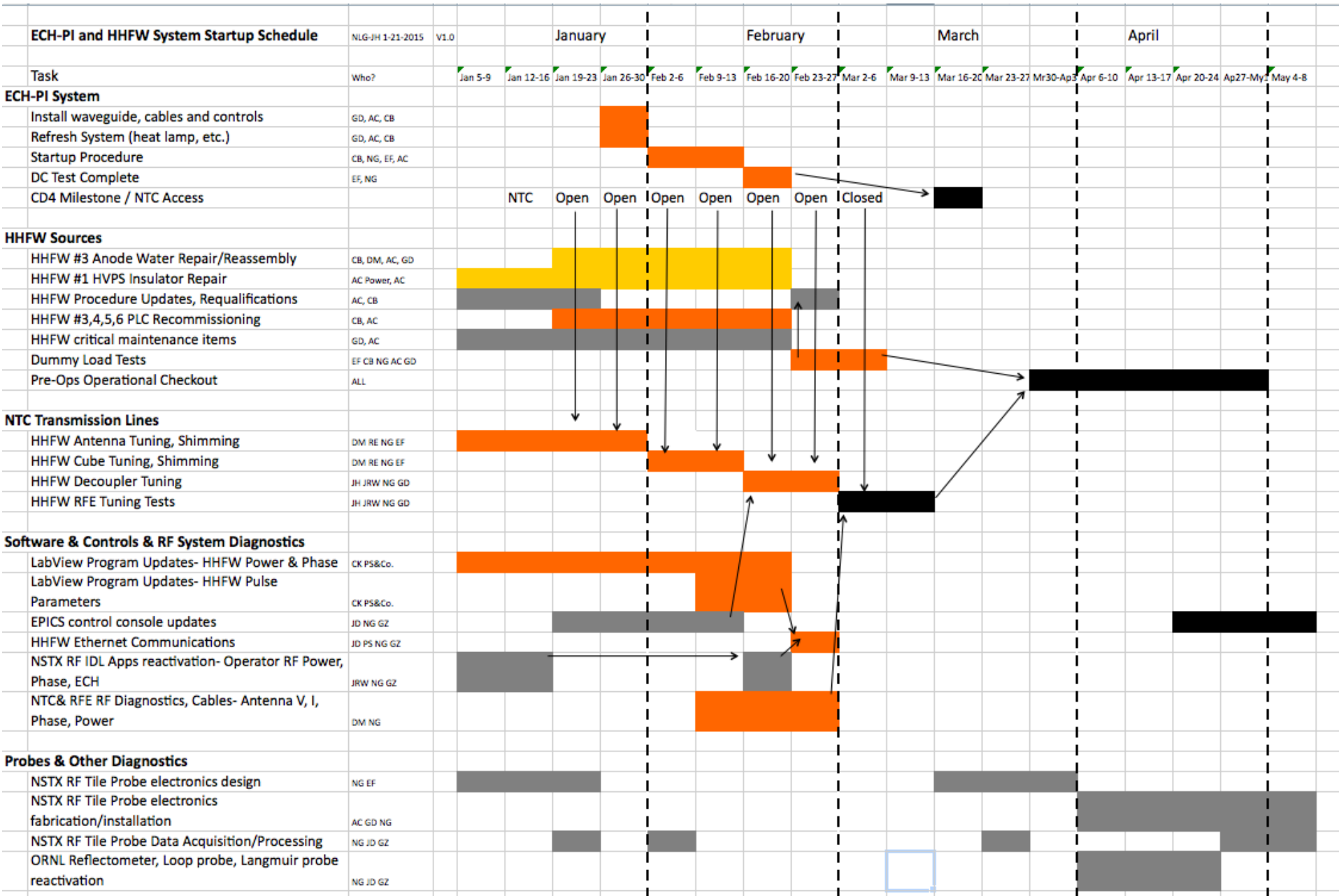
January 28, 2015

PPPL

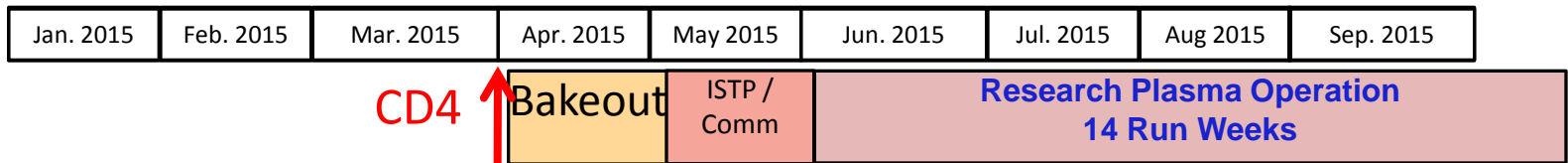


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Overall RF system commissioning schedule for FY2015



HHFW system commissioning schedule for FY2015

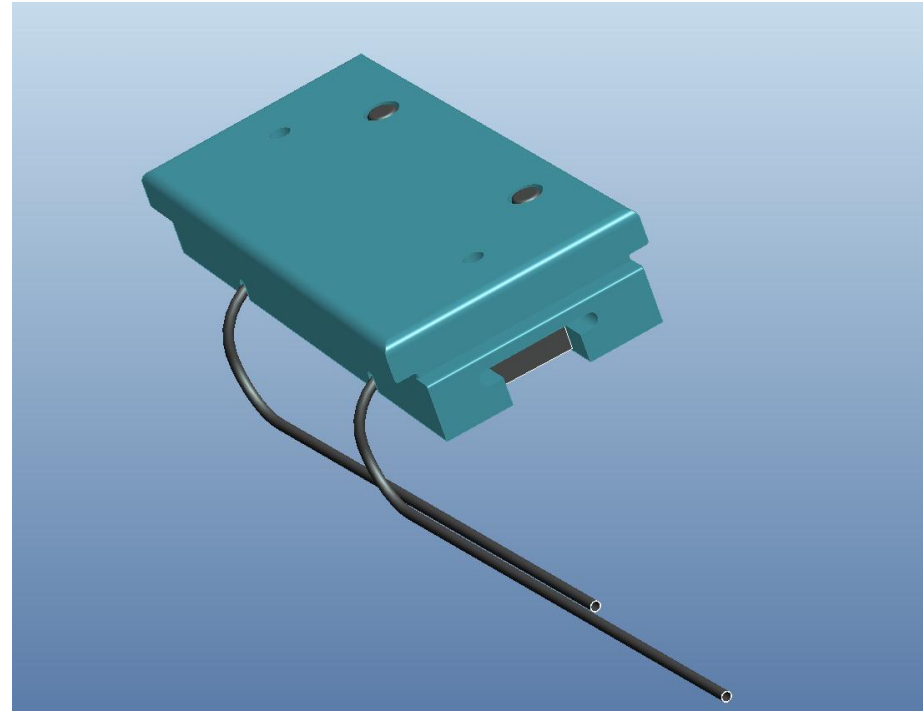


- **Complete transmission and matching hookups:**
 - Jan Finish loops
 - Feb Hookup to loops, set decouplers,
 - Mar Match vacuum from RFE
- **Complete source assembly and testing**
 - Feb - Mar Complete source assembly and test into dummy load
 - March Labview updates for power/phase, EPICs system control
- **NSTX-U TC & RFE diagnostics re-commissioning**
 - Feb - March Into MDSplus
- **Prepare diagnostics for supporting HHFW studies**
 - May Complete coaxial Langmuir probe electronic hookups and connections to central computer (MDS plus)
 - May IR camera commissioning
 - May ORNL Reflectometer, probe, etc. reactivation
 - May RF probes at Bay J installation, hookup, commissioning

Transmission line and RF probe elements

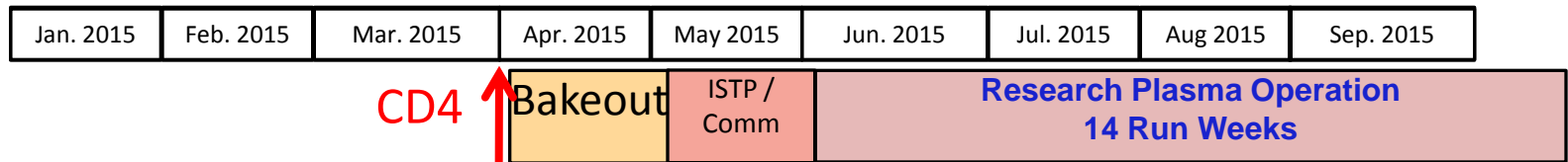


Resonant loop connections to top/bottom antenna element feeds



Coax connected Langmuir probes at Bay J top and bottom
- Two probes per tile in rows 2, 3, and 4

Antenna conditioning schedule for FY2015



- **Conditioning of antenna**

- **May - June Vacuum conditioning**

- ✧ Condition to maximum voltage after Boronization
- ✧ Condition to maximum voltage after adding Lithium

- **June - July Plasma conditioning**

- ✧ Plasma condition to maximum power with RF only
- ✧ Plasma condition with RF + NB
 - NB1
 - NB2
 - NB1 + NB2
 - Determine antenna voltage limit
 - Set acceptable antenna/separatrix gap for each NB configuration