



2X-960223-CLN-01

**TO: DISTRIBUTION**  
**FROM: C NEUMEYER**  
**SUBJECT: MINUTES OF MEETING ON WBS 2**

The following is a summary of the 2/22/96 meeting.

Status:

- 1) HHFW will use existing C-site FMIT sources, number TBD, operating at constant frequency TBD MHz.
- 2) ECH will use new sources probably based on tubes, sockets, etc. already existing at ORNL, number TBD, probably 28GHz. A new (-) 80kV power supply is required. May be available at ORNL or LLNL.
- 3) CHI will use capacitor bank discharge with current follow-on via a power supply. Only role of WBS 2 on CHI is to coordinate work by U of Washington, WBS 1 (tok systems), and WBS 5 (power systems).
- 4) Draft SRDs for WBS 2 have been prepared.

*Post -meeting Note: The draft SRDs were prepared individually for WBS 21, 22, and 23. If more convenient they may be combined into a single one.*

Issues:

- 1) Because of the strong helicity of the field, the HHFW antennae may need to launch at an angle with respect to the midplane in order to efficiently drive current along those field lines; if this is indeed necessary it will complicate their design. Experiments underway on CDX-U may contribute information which will influence the NSTX design in this regard.
- 2) The protrusion of the antennae into the VV remains an unresolved issue.
- 3) VV port allocations and layout remain an unresolved issue.

*Action: J Robinson to organize a Port Allocation Working Group to come to a decision on allocations and port designs. Although NBI is an upgrade option, it needs to be considered in this context.*

- 4) Layout of RF systems both inside and outside vessel need to consider the possibility of the NBI upgrade.

Major Components of the Design Effort:

- 1) HHFW and ECH antenna design
- 2) Thermal Analysis of HHFW and ECH antenna
- 3) Design of ex-vessel components ( xmission lines, tuners, stubs, etc.)
- 4) Analysis of HHFW coupling to plasma
- 5) Integration of existing controls & data acquisition and transfer of same between machines.
- 6) Electrical isolation of in-vessel components associated with CHI and connection of CHI power supply thereto.

*Note: Item 6) will require a combined effort between WBS 1, 2, and 5*

Deliverables for Engineering Review:

- 1) SRD/SDDs for WBS 21, 22, 23 either integrated into one WBS 2 document or separated, at the discretion of R Wilson.
- 2) Drawings depicting layout of ex-vessel components as necessary to describe design concept and perform cost estimates
- 3) Layout of ports
- 4) Conceptual design and drawings of antennae

*Note: for the engineering review all drawings related to the above can be Macintosh type*

Other Items Discussed:

1) Documentation of existing equipment, especially older items, may be lacking. However, the resources necessary to improve it are thought not to be available. This could be problematic if the existing operators are not available in the NSTX era.

cc: \* = meeting attendee

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