



71-970227-CLN-01

**TO: RSIMMONS**  
**FROM: C NEUMEYER**  
**SUBJECT: STATUS OF NBI REVIEW CHITS**

*References:*

**1) NBI Action Plan 1**

The following are some comments on the chit actions, and some remarks on the status of chit actions assigned to me.

Chits #4,18 - Bakeout Requirement - bakeout of the NBI duct is not presently addressed in the GRD, since NBI is treated as an upgrade therein. GRD requirements for bakeout are as follows....

"2.3.2 Bakeout

- a. The surfaces of the PFCs shall be heated during bakeout to 350°C.
- b. The temperature of the inner Vacuum Vessel surfaces shall be heated to at least 150°C.
- c. Bakeout heaters shall be designed to heat the Vacuum Vessel and PFCs to the required temperature in 48 hours. After completion of bakeout, the machine shall be cooled down to an operation temperature (nominally room temperature) in less than 24 hours".

Considering that it is an extension of the VV, I would suggest at this time that a requirement be invoked to heat the NBI duct to 150C, perhaps using heating blankets to supplement the heat flow from the main body of the VV. This requirement may be rescinded in the future if it is determined that the range of temperature in the duct without active heating is shown by analysis and argument to be adequate.

Chits #8,9 - Hot Cell HVAC Req'ts - concerning the dew point, it will be  $\leq 10$ C. Concerning the pressure, it will be slightly positive to ensure the exclusion of TFTR Test Cell air. If and when a second beam line is added, the pressure issue will be addressed again. However, for now, negative pressure is not necessary and in fact undesirable.

Chit #13 - Special Process Spares - I have initiated an inquiry to determine what if any costs may be incurred in order to make use of TFTR special process spares. However the answer is not yet available. I would propose that we assume for now that they will be put into an "excess" status at the end of the TFTR run such

that we can use them for free on NSTX. Concerning the possible conflict between the baseline NSTX project and NBI which may desire to use one of the two ceramic insulator assemblies now on hand as TFTR spares, it is suggested that, if a new assembly is required for NBI that the associated cost be placed with NBI and that the two existing assemblies be reserved for the NSTX center stack. Per discussion with T O'Connor this approach is acceptable to the NBI group.

Chit #16 - Requirements Document - R Wilson will prepare an SRD for NBI, in accordance with NSTX SRD procedures.

Chit #20 - Seismic Req'ts - The seismic performance goal for the NBI structure should be to maintain worker safety and it shall be placed in NPH Performance Category 1 (PC-1). See GRD section 3.2 for details. According to J Spitzer a suitable support structure was designed for TPX which meets these requirements and should be readily applicable to NSTX.

Chit #33 - Which WBS will cover in-vessel protective armor - Protective plates to be assigned to WBS 11. Since not yet part of baseline, no need to update cost estimate. However, NBI Proposal will need to address these costs. When the NBI upgrade becomes "official" the PEP WBS dictionary will be modified accordingly.

cc:

NSTX File