



53-961212-CLN-01

**TO: S KAYE**  
**FROM: C NEUMEYER**  
**SUBJECT: PRELIMINARY OH INITIATION WAVEFORMS**

This memo presents a preliminary estimate of the OH voltage and current waveforms at plasma initiation, based on a detailed simulation which is being developed to model the power systems and magnet electrical performance.

At present the model simulates a 12-pulse rectifier configuration which uses four series layers of rectifiers each rated 1kV no load, and assumes that the MG frequency is at 70Hz at the start of a pulse.

Mutual coupling between the OH coil and passive structure, plasma, and other PF coils is not yet included.

Results are attached. The initiation interval begins at  $t = 220$  mS and lasts for 10 mS. Actual OH current precharge rise time was 170mS, since a 50mS initialization period is used in the simulation prior to the start of OH current.

If the voltage is not adequate, we can perhaps push the power supplies further into inversion or connect more than four in series (six could be used with no significant additional cost impact).

Once the details of the magnet construction stabilizes and the additional details are included in the simulation it will be reported on in greater detail.

cc:

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