

Robert A. Ellis

From: Arthur W. Brooks
Sent: Tuesday, January 15, 2008 9:16 AM
To: Steve Raftopoulos; Robert A. Ellis
Cc: Michael E. Viola; Thomas G. Brown; Bob Simmons; Phil Heitzenroeder; Hutch Neilson; Michael C. Zarnstorff; Mark Smith; Mike Cole
Subject: Coil Realignment Data for A1, B1 and C1

Steve, Bob,

The Project has decided to proceed with modular coil realignment. The determination of the transformation matrices for realignment is based on suppressing resonant fields in the plasma using the VACISLD code and the reference full current full beta plasma scenario.

The realignment data is posted on the P drive at:

P:\web\ncsx.pppl.gov\NCSX_Construction\Dimensional_Control_Metrology\Dimensional_Control\Module_Coil_Windings\Coil_Realignment\

or from the web at

http://ncsx.pppl.gov/NCSX_Construction/Dimensional_Control_Metrology/Dimensional_Control/Module_Coil_Windings/Coil_Realignment/

A description of the Realignment calculation process can be found in:

"Mechanical Realignment Of Modular Coils r3.ppt"

The spreadsheet containing the realignment matrices for all the coils is called:

011508_Realignment_Matrices_142_AB.xls

The matrices have been applied to the data you supplied for the fiducials for A1, B1 and C1:

092707_A1_warped_fiducials-Realigned.xls
110807_B1_COIL_REPAIRED_FIDUCIALS-Realigned_142_AB.xls
091107_C1_COIL_POST_WARP-Realigned_142_AB.xls

Also, the shim sizes have been recalculated by applying the realignment matrices to the flange scan data and recomputing shim thicknesses. The new shim thickness (with a comparison of the before realigned values) are in the spreadsheet called

011508_A1B1+B1C1_Realigned_Shims r1_142_AB.xls

The handling of the matrices should be incorporated into Mark's MATLAB code for calculating shim sizes. The spreadsheet above should serve as a check of his calculations.

Art

