



4X-980424-CLN-01

***TO: DISTRIBUTION
FROM: C NEUMEYER
SUBJECT: FINAL RESOLUTION OF PROBLEMS WITH FIRST ARTICLE
ROGOWSKI AT AIREX***

A second meeting was held to revisit plans and action items with respect to the DC breakdown which occurred on 4/23 during the 5kV test of the first article Rogowski coil.

In attendance were:

J Chrzanowski R Kaita T Meighan C Neumeyer M Ono

Based on additional information concerning the test at Airex (they used an AC instead of a DC hipot), along with tests on the sample by T Meighan (reported in attachment to this memo) a decision was taken to stick with the original baseline insulation design, but to reduce the test level at Airex to 1kV (they have a 1kV Megger).

The coils will be tested at 5kV here at PPPL.

cc:

J Chrzanowski
R Kaita
F Malinowski
B McCormack
T Meighan
C Neumeyer
M Ono
M Williams

NSTX File

Attachment to 4X-980424-CLN-01

Mime-Version: 1.0

Date: Fri, 24 Apr 1998 15:11:24 -0500

To: cneumeyer@pppl.gov

From: Thomas Meighan <tmeighan@pppl.gov>

Subject: Electrical Test results of Ip Rogowski Problem

Charlie,

The hipot test results for the Rogowski coil insulation are listed below.

The two tapes were a single half lapped layer over the Rogowski coil. The wire conductor on the coil was used as the ground plane and a 1/2' dia. electrode was used as the high voltage electrode which was placed on the flat of the coil.

The Manufacturers advertised spec. for the different tapes are as follows:

Teflon Tape - De Wal DW 204-2 4,500 volts/mil. Tape thickness .0035"

Kapton Tape - Permacel 7,000 volts/mil. Tape thickness .0025"

Test results:

Teflon tape @ 10 KV 200,000 Meg Ohms for 3 minutes

 @ 12 KV Failure

 3 test points with the same results.

Kapton @ 15 KV 300,000 Meg Ohms for 3 Minutes

 3 test points with the same results.

All failures were at the tape butt section where there is only one layer of tape.

Micro Therm blanket 6 mm thick breakdown test:

@ 10 KV Res. = 50,000 Meg. Ohms

@ 12 KV Failure