

## 2016-10-20 PFRC-2 Run Summary

prepared 2020-12-3 S.A. Cohen

RMF<sub>0</sub> @ **8 MHz**, silver-plated, air-gapped two-turn antennas, 28" RG-217 transmission lines, ground plane between antennas and Lexan vessel. RMF power system: SRI->AR100LM->2KD-> 8K-> 200 kW. "Safety" BN-covered HTS-FCs, installed Sept 2011. MC ion gage (FIG) + convectrons.

**Goals:** Testing tanks and cables

### Setup:

- a) SRS: max 0.61
- b)  $f_v \sim 8.015$  MHz, operate at 8.025 MHz
- c)  $P_r/P_f \sim$  as low as  $\sim 1/3$  %
- d) FM: no
- e) Duration 3 ms.
- f) Werlatone QH6213 (2-32 MHz) 90° splitter; 2 directional couplers, C2800, 50 dB
- g) Tank circuits (new) -> 2 antennas
- h)  $P_a$  looks like 16 kW
- i) Rotation direction:  $\sim 90^\circ$  throughout discharge.
- j) 4 antenna currents??
- k)  $1e-6$  T satellite gauge;
- l) ops at: with plasma 0.37-0.81 mT, CC H<sub>2</sub>.
- l) Roll-around power supply:  $I = 83$  A
- m) Helmholtz coils:  $4 \times 8 + 8 \times 4$
- n) Nozzle: 300 A
- o) Helicon: to 130 W seed plasma
- p)  $\mu$ -wave:  $n_{e,max} \sim 2e12/22$

### Results:

1. Arcing in top tank box
2. Otherwise, good test