Marx-Fest

Marx Performance
April 1, 2010 - April 1, 2011

Updated 5-23-2011
Modulator Voltage and On-Time

Modulator: 3430.3 hours (142.93 days) operation
Klystron Forward Pwr and On-Time

Klystron: 2766.0 hours (115.25 days) operation
Forward Power vs Modulator Voltage

RF Fwd Power vs Mod Voltage

Fwd Power (MW)

Mod Voltage (kV)
Powers don’t quite balance
- Calibration errors on workflow and/or temperatures?

Powers balance especially poor in May 2010
- Readback errors?
Excess Power

- Power balance gives 10-15% power excess
Pulse Width
Arc Detector Voltage

Arc Detector Voltage

Arc1
Arc2

Arc Detector Voltage (V)

Time (days)

04/01/10 06/30/10 09/28/10 12/27/10 03/27/11
Temperatures
Tilt of RF Pulse

- “Tilt” is \((\text{Marker2}-\text{Marker1})/\text{Avg}\)
- No Marker archive data before 7/1/2010?
Pulse Tilt vs Forward Power

- “Tilt” is \( \frac{\text{Marker2} - \text{Marker1}}{\text{Avg}} \)
Flatness of RF Pulse

- “Flatness” is Peak/Avg
Pulse Flatness vs Forward Power

- “Flatness” is Peak/Avg
Modulator Current vs Voltage

• “Island” in lower center due to running modulator into load, with different impedance than klystron
Klystron Body vs Collector Power
Klystron Body vs Forward Power

Body Power vs Fwd Power

Body Power (MW) vs Fwd Power (MW)

Color scale:
- 04/01/11
- 04/01/10
Klystron Collector vs Fwd Power
Reflected vs Forward Power
Reflection Coeff vs Fwd Power

Reflection Coefficient vs Fwd Power

Fwd Power (MW)

Ref Coeff (Gamma,\textsuperscript{a})

Colorbar: 04/01/11 to 04/01/10
Reflection Coeff vs Load Temp

Reflection Coefficient vs Load Temperature

Avg Load Temperature (F)

Refl Coeff (Gamma)