Sources of Klystron Reflected Energy Trips

- SLED (11)
  - 0.03 / hr at 30 Hz
  - (< 0.08 / hr required)

- Klystron Tear (137)

- WG and Tuning (76)

- SLED Out Power (MW)

Hours of High Power Operation
Trip Rates -vs- Operation Time

Klystron Tear

Wave Guide

SLED

Hours of Equivalent 30 Hz Operation
Rate of Tear Events (large TE11 power) -vs- Time

Days in February

Number per Hour

30 60 Hz
SEM Images of XP3 Output Coupler

Horn-BeamSide-Dwn-30x

Bob Kirby, Daryl Sprehn, Chris Pearson
Categorization of 8-Pack Breakdown Events
(Blue = WG Events, Red = SLED Events, Green = Tear Events)

(Time of Kly 7/8 Ref Power – Time of Kly 5/6 Ref Power (ns)
Identification of Events from SLED Miss-Tuning

![Graph showing peak change in klystron reflected power versus event number with a tuning cut line at 600 au.](image-url)