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Negative Polarity Rod-Pinch Experiemental Plan on RITS-6

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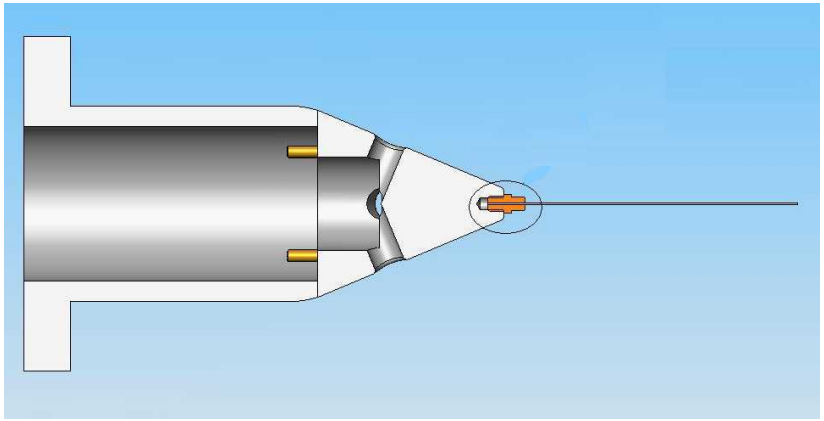
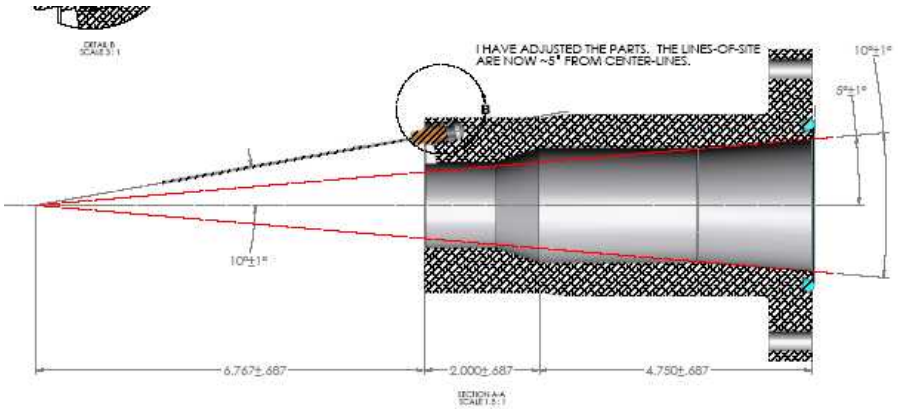
Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.

Standard on-axis anodes as well as angled anode rods will be fielded.

- Primary goals:
  - Demonstrate good diode impedance behavior
  - Extract dose on-axis and measure dose and spot

- The first few shots will use a "standard" on-axis rod.
- After good diode behavior is demonstrated, an angled rod will be fielded to facilitate on-axis dose and spot measurements.
- Both solid tungsten and aluminum tube with tungsten tips will be fielded.
- Angled rod will provide 4.5 degree half-angle line of sight.





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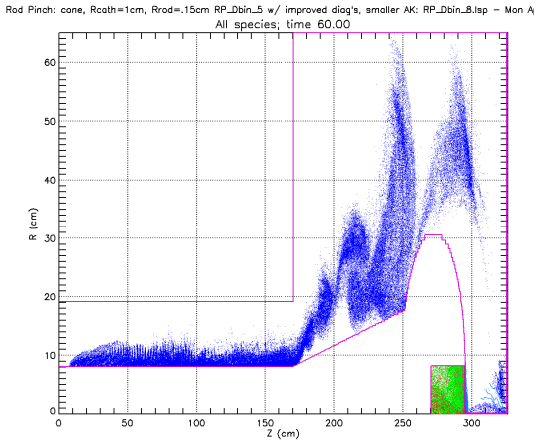
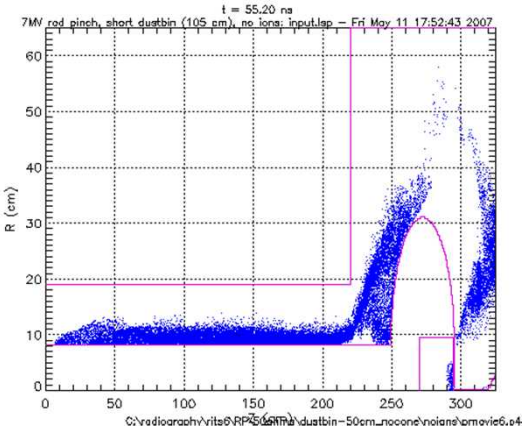
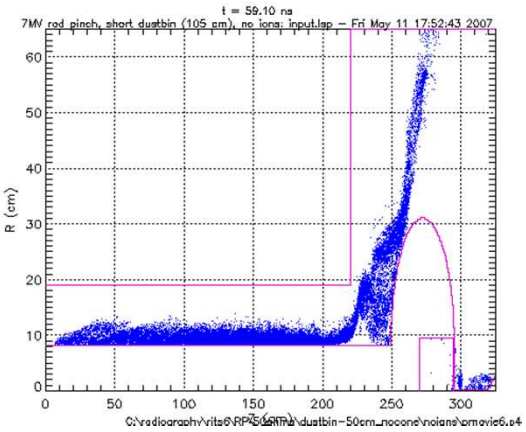
Dustbin Modifications were studied to improve power flow.

Normal Dustbin

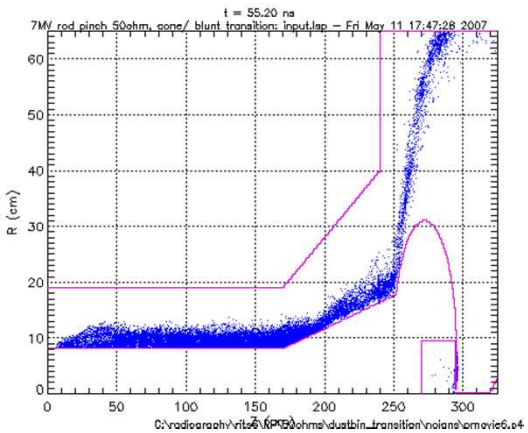


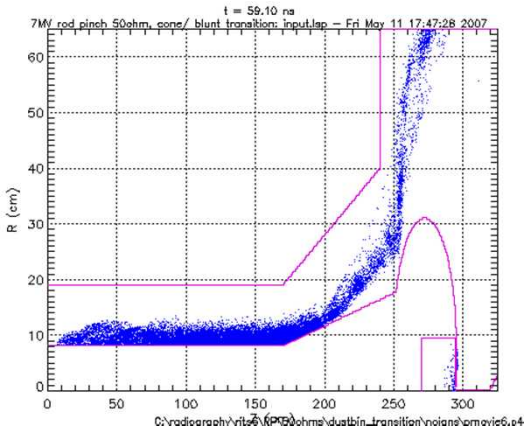
Shortened Dustbin





Tapered Transition





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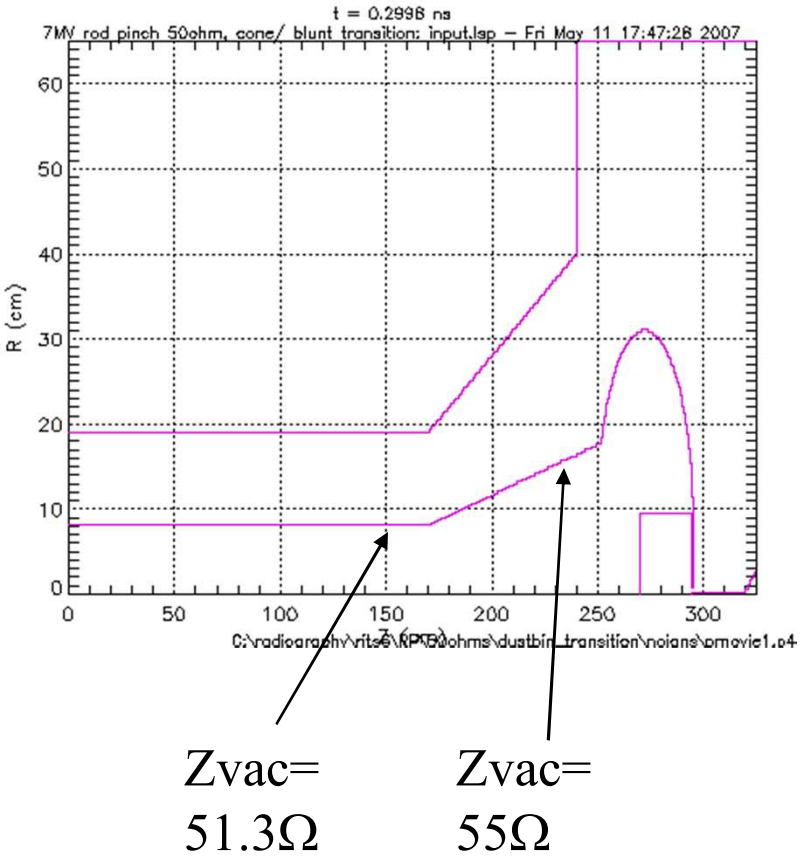
The tapered dustbin transition design will be fielded on the NPRP experiments.

- The tapered anode and cathode maintain almost constant impedance up to 10cm behind the knob.
- Field stress on the back of the knob is lower than the very short dustbin design.
- The dustbin modification should greatly reduce the effect of the power flow on the diode performance.



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