Ceramic Beam Dump Insulator Yield Test #1

October 17, 2014

With 60 psi water pressure we applied a load 12” from ceramic center with a dial indicator positioned under the insulator two inches from ceramic center. In ten pound increments we applied an upward force noting changes in the dial position. Once we reached 60 lbs. of load we found that the upstream tubing was bending and that we needed to keep steady tension on the chain fall in order to stop the extended tube from relaxing. Once we reached 125 lbs. we stopped advancing the chain fall in order to record data and after sitting for one minute the ceramic let go and failed. This failure was not preceded by any release of pressure due to cracking or fissuring in the ceramic.

Load Deflection

5lbs- .000”

15lbs- . 006”

25lbs- .014”

35lbs- .020”

45lbs- .030”

55lbs- .045”

65lbs- .050”

75lbs- .060”

85lbs- .070”

95lbs- .090”

105lbs- .113”

115lbs- .150”

125lbs- .250”