

## AF&PA RECOVERY BOILER STUDIES

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December 2, 2016

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<b>Title</b>	<b>Date</b>	<b>Authors</b>
Analysis of Dissolving Tank Violence - Presentation	February 12, 2014	Dr. T. Grace
Survey for Best Practices for The Safe Operation of Dissolving Tanks - Analysis of Responses to Survey	December 19, 2013	Dr. T. Grace
Dissolving Tank Explosions - A Review of Incidents Reported to BLRBAC - Report	November 26, 2013	Dr. T. Grace
Calculation of Green Liquor Density vs. TTA as a Function of Composition	April 3, 2009	Dr. N. De Martini (IPST)
Recovery Boiler Superheater Investigation	July 31, 2008	Dr. T. Grace and Mr. Jack Clement
A Review of Incidents of Dissolving Tank Explosions between 1973 and 2008	March 2008	Dr. N. De Martini (IPST)
Non-Destructive Waterside Deposit Monitors of Chemical Boilers – Phase II	January 2008	Babcock & Wilcox Tech. Service Group - Steven Clark
Investigation of the Causes of Recovery Boilers Economizer Failures – Identification of Means for Preventing their Occurrence	March 14, 2006	Dr. T. Grace and Mr. Jack Clement
Joint AF&PA - BLRBAC Water Treatment and Chemical Cleaning Seminar	April 6 & 7, 2005	
Damage Mechanisms Affecting Fixed Equipment in the Pulp & Paper Industry	January 2004	Welding Research Council
Practical Implications on the use of Coolant in Char Beds	December 12, 2003	Dr. T. Grace and Dr. H. Tran (University of Toronto)
Non-Destructive Waterside Deposit Monitors of Chemical Recovery Boilers	October 22, 2003	BWXT Services - Steven Clark
Thermal characteristics of Char Bed Materials	August 25, 2003	Dr. T. Grace and Dr. H. Tran (University of Toronto)

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Investigation of Industry Experiences with Floor Tube Failures in Recovery Boilers	January 23, 2003	Dr. T. Grace and Mr. Jack Clement
Corrosivity Monitoring of Kraft Recovery Boilers	January 2002	Dr. P. Singh (IPST) DOE & AF&PA
Investigation of the Relationship between Recovery Boiler Furnace Design and Explosion Damage – Volume II Section 3 – Description of Explosion Damage	September 2001	Dr. T. Grace and Mr. Jack Clement
Recovery Boiler Char Bed Cooling Following an ESP -Phase II – Facilitating Effective Use of Accelerated Cooling Methods and Report on Accelerated and cooling Test at Willamette Ind. Albany OR mill	January 2001	Dr. T. Grace and Dr. H. Tran (University of Toronto)
Joint AF&PA – BLRBAC Recovery Boiler Pressure Parts Repair Processes Seminar	April 5, 2000	
Recovery boiler char bed cooling – Task I – Review and Interpretation of Available information	June 18, 1999	Dr. T. Grace and Dr. H. Tran (University of Toronto)
Recovery boiler char bed cooling following an Emergency Shutdown – Task II – Assessment of Accelerated Bed Cooling Methods	May 20, 1999	Dr. T. Grace and Dr. H. Tran (University of Toronto)
Kraft III Modeling – Black Liquor Combustion Recovery Boiler Modeling – DOE	August 1998	Dr. T. Grace, IPST; Dr. W. J. Frederick, Oregon St. U.; Dr. M. Salandean, U. of BC and Dr. R. Wessel, Babcock & Wilcox
A Strategy for Monitoring Furnace Wall Corrosion in Kraft Recovery Boilers	July 1997	Drs. R. Prescott, D. Singbeil and L. Frederick (PPRIC)
Joint AF&PA – BLRBAC Corrosion Seminar	April 3 & 4, 1996	

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Testing the Effects of Operating Conditions on Corrosion of Water Wall Materials in Kraft Recovery Boilers – Phase D	July 1995	Dr. D. Singbeil & others PPRIC
Testing the Effects of Operating Conditions on Corrosion of Water Wall Materials in Kraft Recovery Boilers Phase C – Validation		Dr. D. Singbeil & others PPRIC
Joint AF&PA – BLRBAC Lower Furnace Seminar	June 13 – 15, 1995	
Testing Materials for Resistance to Fireside Corrosion – Kraft Recovery Boiler – Phase C Extension	June 1994	Drs. Singbeil and L. Frederick (Pulp & Paper Institute of Canada)
Joint AF&PA – BLRBAC Recovery Boiler Maintenance Seminar	April 7-8, 1993	
Estimation of the Effect of Changing Boiler Operating Parameters on Fireside Corrosion in the Lower Furnace of a Kraft Recovery Boiler	October 1992	Dr. J. Colwell, IPST
Recovery Boiler Advisor	December 1991	Stone & Webster
Development of a Laboratory Test Method for Fireside Corrosion in Kraft Recovery Boilers	April 1990	R. Thompson and D. Singbeil - PPRIC
In-Situ Fume Particle Size and Number Density Measurement from Synthetic Smelt – IPC Tech Paper 300	August 1988	Drs. J. Hsu, D. Clay and C. Presser (DOE & API)
Test Methods for the Evaluation of Fireside Corrosion in Kraft Recovery Boiler	January 15, 1988	Drs. D. Singbeil and A. Garner PPRIC
Droplet Flight Pattern Predictive Simulation of Recovery Furnace Processors	January 1987	Dr. P. Shick
Char Burning	September 23, 1985	Institute of Paper Chemistry
Review of Smelt – Water Explosions; A Special Report. Available on-line at: <a href="https://www.google.com/#q=Review+of+Smelt-Water+Explosions+1982">https://www.google.com/#q=Review+of+Smelt-Water+Explosions+1982</a>	January 1982	Philip E. Shick and Thomas M. Grace

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