The Kraft Recovery Course examines key recovery operations in a kraft pulp mill to help participants increase their ability to improve pulp production efficiency while minimizing operating costs and environmental problems. The course will cover chemistry, physics and engineering relating to kraft recovery.

Course participants are encouraged to bring questions and specific problems to the experts! The experts faculty will provide practical day-to-day information through traditional workshops and team-based problem solving exercises. Teams will work on real-world problems and present their results to the class.

Register by December 15, 2011 and Save!
Go to www.tappi.org/12kros

Learning Outcomes
After successfully completing this course, participants should be able to:

• Describe the kraft recovery process
• Describe the black liquor evaporator operation and list ways to improve it
• Identify causes and solutions for recausticizing problems
• Describe lime reburning principles and devise a means to improve kiln performance
• Identify causes and solutions for recovery boiler problems
• List the main causes of corrosion in recovery boilers and ways to minimize them
• List ways to reduce energy consumption and to optimize energy utilization

“I felt fortunate finally to be able to make the trip to the KROS this year. It is certainly worth the efforts and I very much enjoyed the lectures. No wonder so many people came to the event year after year. One classmate told me that it was his second time to be there.”

Principal Scientist
Thermochemical Processes
FPInnovations
Pulp and Paper Division
Vancouver, BC
MONDAY, JANUARY 9, 2012

Session 1
8:00 am - Introduction to the Course
Honghi Tran, University of Toronto, ON, Canada
8:20 am - 1.1 The Kraft Recovery Process, Jim Brewster and Honghi Tran

Session 2: Recausticizing/Lime Reburning
9:00 am - 2.1 Recausticizing Principles and Practice, Dale R. Sanchez, Vector Process Equipment, Inc., Burlington, ON, Canada
9:40 am - Morning Break
10:00 am - 2.1 Recaust. Principles and Practice (Cont’d)
10:40 am - 2.2 Lime Kiln Principles & Operations, Glenn M. Hanson, Metso Minerals, Atlanta, GA & Richard Manning, Kiln Flame Systems, High Wycombe, UK
11:30 am - Team Conference
11:50 pm - Lunch on Your Own
1:10 pm - 2.2 Lime Kiln Principles & Operations (Cont’d), Glenn M. Hanson
1:50 pm - 2.3 Lime Kiln Chemistry, Honghi Tran, University of Toronto, ON, Canada
2:30 pm - Afternoon Break
2:50 pm - 2.4 Refractory Installation and Maintenance, Thomas Gencarelli, Harbison-Walker Refractories, Pittsburgh, PA
3:30 pm - Kiln/Recausticizing Operations Workshop
4:30–5:30 pm - Homework/Networking Hour

TUESDAY, JANUARY 10, 2012

8:00 am - Introduction to Day 2 & Team Presentation, Honghi Tran
Session 3: Black Liquor Evaporation
8:30 am - 3.1 Liquor Properties & Evaporation Basics, David Clay, Jacobs Engineering, Portland, OR
9:10 am - 3.2 Evaporator Design and Operations, Jean-Claude Patel, AH Lundberg Associates, Inc. Naperville, IL
9:50 am - Morning Break
10:10 am - 3.3 Evaporator Fouling, David Clay, Jacobs Engineering, Portland, OR
10:50 am - 3.4 Evaporator Optimization, Jean-Claude Patel
11:30 pm - Team Conference
11:50 pm - Lunch on Your Own
1:10 pm - 3.5 - Foul Condensate Stripping, Paul Johnson, AH Lundberg Associates, Inc. Bellevue, WA
1:50 pm - 3.6 NCG Handling, Paul Johnson
2:30 pm - Afternoon Break
2:50 pm - 3.7 Tall Oil Soap Recovery, Doug Foran, Arizona Chemical Co., Savannah, GA
3:30 pm - Evaporator Operations Workshop
4:30–5:30 pm - Homework/Networking Hour

WEDNESDAY, JANUARY 11, 2012

8:00 am - Introduction to Day 3 & Team Presentation, Honghi Tran
Session 4: Recovery Boilers
8:30 am - 4.1 Recovery Boiler Equipment and Operation, Thomas M. Grace, T. M. Grace Company, Appleton, WI
9:10 am - 4.2 Black Liquor Droplet Burning, Mikko Hupa, Åbo Akademi University, Turku, Finland
9:50 am - Morning Break
10:10 am - 4.3 Black Liquor and Air Delivery, David Clay
10:50 am - 4.4 Recovery Boiler Chemical Principles, Mikko Hupa
11:30 am - Team Conference
11:50 am - Lunch on Your Own
1:10 pm - 4.5 Recovery Boiler Optimization, David Clay
1:50 pm - 4.6 Recovery Boiler Safety and Audits, Thomas M. Grace, T. M. Grace Company, Appleton, WI
2:30 pm - Afternoon Break
2:50 pm - 4.7 Fireside Deposits and Plugging Prevention, Honghi Tran
3:40 pm - Recovery Boiler Workshop
4:30–5:30 pm - Homework/Networking Hour

THURSDAY, JANUARY 12, 2012

8:00 am - Introduction to Day 4 & Team Presentation, Honghi Tran
Session 5: Recovery Maintenance & Management
8:30 am - 5.1 Emissions from Recovery Processes, Mikko Hupa and Honghi Tran
9:10 am - 5.2 Recovery Boiler Water Treatment, Bob Bartholomew, Sheppard T. Powell Associates, Baltimore, MD
9:50 am - Morning Break
10:10 am - 5.3 Recovery and Utility Management, Jim Brewster, Irving Pulp & Paper, Saint John, NB, Canada
10:50 am - 5.4 Corrosion & Cracking in Recovery Equipment I, W. B. A. (Sandy) Sharp, Sharp Consultant, Columbia, MD
11:30 pm - Team Conference
11:50 pm - Lunch on Your Own
1:10 pm - 5.5 Corrosion & Cracking in Recovery Equipment II, W. B. A. (Sandy) Sharp

Session 6: Emerging Issues
1:50 pm - 6.1 Energy Optimization, Jim Brewster, Irving Pulp & Paper, Saint John, NB
2:30 pm - Afternoon Break
2:50 pm - 6.2 Biomass Combustion Principles and Boiler Optimization, Arie Verloop, Jansen Combustion and Boiler Technologies, Inc., Kirkland, WA
3:30 pm - Energy and Cost Reduction Workshop
4:20 pm - Concluding Remarks, Honghi Tran