



# BLACK LIQUOR RECOVERY BOILER ADVISORY COMMITTEE

## MINUTES OF MEETING Crowne Plaza Hotel/Atlanta Airport Atlanta, Georgia October 3, 4, & 5, 2005

### OBJECTIVE

The objective of BLRBAC is to promote improved safety of chemical recovery boilers and their auxiliaries through the interchange of technical knowledge, experience, and data on past and any future recovery boiler incidents.  
*Bylaws - 2.1*

### OFFICERS

<b>Chairman:</b>	<b>Karl Morency</b> Georgia-Pacific P. O. Box 105605 Atlanta, GA 30348-5605	Tel: (404-652-4629 Fax: 404-584-1466 <b>ktmorenc@gapac.com</b>
<b>Vice- Chairman:</b>	<b>Len Erickson</b> Boise Paper Solutions P. O. Box 50 Boise, ID 83728-0001	Tel: 208-384-4933 Fax: 208-384-7637 <b>lenerickson@boisepaper.com</b>
<b>Secretary:</b>	<b>Mike Polagye</b> FM Global P. O. Box 9102 Norwood, MA 02062	Tel: 781-255-4730 Fax: 781-762-9375 <b>michael.polagye@fmglobal.com</b>
<b>Treasurer:</b>	<b>Ron Hess</b> HSB Forest Products Group 110 Cedar Cove Court	Tel: 706-484-1723 Fax: 706-485-5267 <b>ronald_hess@hsb.com</b>

### REGULAR MEMBERSHIP

Organizations operating, manufacturing, or insuring chemical recovery boilers are eligible.

### ASSOCIATE MEMBERSHIP

Organizations having a direct interest or role in the safety of chemical recovery boilers are eligible.

### CORRESPONDING MEMBERSHIP

A company residing outside of the United States which finds it impractical to attend meetings on a regular basis because of distance and expenses, but desires to be involved and informed of BLRBAC activities.

*Bylaws - 3.1*

**BLRBAC INTERNET ADDRESS: ---- [www.blrbac.org](http://www.blrbac.org)**

**IRS Employer ID/Tax ID (IRS E.I.N.T./T.I.N) ---- #13-366-5137**

**EXECUTIVE COMMITTEE**

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## BLRBAC SUBCOMMITTEES

<p><b>EMERGENCY SHUTDOWN PROCEDURES</b> <b>John Andrews, Chairman</b> MeadWestvaco Corp. P. O. Box 118005 Charleston, SC 29423-8005 Tel: 843-745-3212 Fax: 843-745-3229 <b>JDANDRE@westvaco.com</b></p>	<p><b>FIRE PROTECTION IN DIRECT CONTACT EVAPORATORS</b> <b>Chris Jackson, Chairman</b> Global Risk Consultants Corp. c/o 12848 SW Thunderhead Way Beaverton, OR 97008 Tel/Fax: 503-671-9829 Fax: (901) 763-6900 <b>chris-jackson@globalriskconsultants.com</b></p>
<p><b>INSTRUMENTATION</b> <b>David Avery, Chairman</b> Weyerhaeuser P.O. Box 678 Bennettsville, SC 29512 Tel: 843-479-0200, Ext. 458 or 335 Fax: 843-479-6603 <b>dave.avery@weyerhaeuser.com</b></p>	<p><b>MATERIALS &amp; WELDING</b> <b>Dan Phillips, Chairman</b> Industra Service Corp. 4122 NE 185th Avenue Portland, OR 97230 Tel: 503-624-9100 Fax: 503-624-9994 <b>dphillips@industrainc.com</b></p>
<p><b>PERSONNEL SAFETY</b> <b>Robert Zawistowski, Chairman</b> Power Specialists Associates, Inc. 531 Main Street Somers, CT 06071 Tel: 860-763-3241, Ext. 126 Fax: 860-763-3608 <b>bob.zawistowski@psaengineering.com</b></p>	<p><b>PUBLICITY &amp; NEWS RELEASE</b> <b>Craig Cooke, Chairman</b> FM Global 815 Byron Drive Oconomowoc, WI 53066 Tel: 262-567-7370 Fax: 972-731-1820 <b>craig.cooke@fmglobal.com</b></p>
<p><b>SAFE FIRING OF AUXILIARY FUEL</b> <b>Dave Streit, Chairman</b> Buckeye Florida One Buckeye Drive Perry, FL 32348 Tel: 850-584-1402 Fax: 850-584-1717 <b>dave_streit@bkitech.com</b></p>	<p><b>SAFE FIRING OF BLACK LIQUOR</b> <b>Mark Sargent, Chairman</b> International Paper 6285 Tri-Ridge Boulevard Loveland, OH 45140-7910 Tel: 513-248-6086 Fax: 513-248-6679 <b>mark.sargent@ipaper.com</b></p>

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**BLRBAC MEETING SCHEDULE**

Spring	April	3, 4 & 5	--	2006
Fall*	October	9, 10 & 11	--	2006
Spring*	March	26, 27 & 28	--	2007
Fall	October	1, 2 & 3	--	2007

**"Bring Operator(s). Give them a chance to hear first hand!"**

■ Past Chairman Lon Schroeder

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\* = Executive Committee has chosen to reschedule these two meetings.

The Fall 2006 and Spring 2007 meeting dates have been moved from the "traditional" first week of the October and April, respectively, to eliminate conflicts with Yom Kippur (October 2006) and with Passover and Easter (April 2007).

BLRBAC has established its own WEB Site which is:

[www.blrbac.org](http://www.blrbac.org)

At this WEB site you will find a copy of the next Meeting Notice. Therefore, each Representative and Associate Representative is asked to inform their people of this WEB site. This is where they can obtain the following BLRBAC documents:

**BLRBAC MEETING NOTICE**

**COVER LETTER**

General Information

**REGISTRATION FORM**

Print and mail to Said & Done with appropriate fees

**CROWNE PLAZA HOTEL**

Blocked room dates, pricing, address, hotel phone numbers, alternate hotel information, etc.

**SCHEDULE**

List of Subcommittee activities on Monday & Tuesday

**AGENDA**

Reports given to Joint BLRBAC Meeting on Wednesday

**QUESTIONNAIRE**

Mail/e-mail completed questionnaires back to Said & Done. These will be given to the Operating Problems Subcommittee Chairman, Dean Clay. He will see that your concerns are brought up and discussed during the Operating Problems session at the next meeting.

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# BLRBAC Publications

Below is the current status of the BLRBAC publications. They are available at the  
**BLRBAC INTERNET ADDRESS:**

**[www.blrbac.org](http://www.blrbac.org)**

## Recommended Practices by BLRBAC

**Safe Firing of Black Liquor in Black Liquor Recovery Boilers**  
727kb (October 2005)

Post ESP Water Level  
21kb (January 2005)

Emergency Shutdown Procedure (ESP)  
106kb (October 2004)

Fire Protection in Direct Contact Evaporators and Associated Equipment  
177kb (October 2004)

Checklist and Classification Guide for Instruments and Control Systems  
178kb (October 2004)

Personnel Safety & Training  
138kb (April 2004)

Post ESP Guidelines  
139kb (October 2002)

Safe Firing of Auxiliary Fuel in Black Liquor Recovery Boilers  
653kb (October 2002)

Waste Stream Incineration  
374kb (April 2002)

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\* = Attended 10/05/05 Meeting

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\* = Attended 10/05/05 Meeting

**PERSONNEL SAFETY SUBCOMMITTEE (Cont.)**

<p>Daryl Hoffman          FM Global          601 108<sup>th</sup> Avenue SE, Ste. 1400          Bellevue, WA 98004          Tel: 425-637-2363          Fax: n/a  <u><a href="mailto:daryl.hoffman@fmglobal.com">daryl.hoffman@fmglobal.com</a></u></p>	<p>Marko Kvist          Andritz Services, Inc.          10745 Westside Parkway          Alpharetta, GA 30004          Tel: 770-640-2516          Fax: 770-640-2455  <u><a href="mailto:marko.kvist@andritz.com">marko.kvist@andritz.com</a></u></p>	<p>Larry Lindsey*          MeadWestvaco          P. O. Box 940          Phenix City, AL 36868-0940          Tel: 334-855-5024          Fax: 334-855-5172  <u><a href="mailto:GLL1@meadwestvaco.com">GLL1@meadwestvaco.com</a></u></p>
<p>Jamison Manion          Mead Westvaco          35 Hartford Street          Rumford, ME 04276          Tel: 207-369-2476          Fax: 207-369-2813  <u><a href="mailto:jjm11@meadwestvaco.com">jjm11@meadwestvaco.com</a></u></p>	<p>Preston Morgan          Kvaerner Power, Inc.          3430 Toringdon Drive          Suite 201          Charlotte, NC 28277          Tel: 704-414-3402          Fax: 704-541-3683  <u><a href="mailto:preston.morgan@akerkvaerner.com">preston.morgan@akerkvaerner.com</a></u></p>	<p>Len Olavessen*          Buckman Laboratories          International, Inc.          1256 North McLean Blvd.          Memphis, TN 38108-1241          Cell Ph: +8613818975112          Fax: (86-21) 69210500  <u><a href="mailto:lrolavessen@buckman.com">lrolavessen@buckman.com</a></u></p>
<p>Lynn Rawls          GE GAP Services          200 College Avenue          Charlotte, NC          Tel: 601-928-9420          Fax: 601-928-9420  <u><a href="mailto:lynn.rawls@gegapservices.com">lynn.rawls@gegapservices.com</a></u></p>	<p>Rick Spangler*          Rick Spangler, Inc.          310 John Shaw Road          St. Simons Island, GA 31522          Tel: 912-638-1324          Fax: 912-634-9697  <u><a href="mailto:spangler@thebest.net">spangler@thebest.net</a></u></p>	

\* = Attended 10/05/05 Meeting

**SAFE FIRING OF AUXILIARY FUEL SUBCOMMITTEE**

**Dave Streit – Chairman**

Buckeye Florida  
One Buckeye Drive  
Perry, FL 32348

Tel: 850-584-1402; Fax: 850-584-1717

**dave\_streit@bkitech.com**

<p>Allen L. Ray – Sec. Process Equipment Barron Industries, Inc. 2770 Welborn Street P. O. Box 1607 Birmingham, AL 35210 Tel: 205-624-1908 Fax: 205-662-6037 <b><u>aray@processbarron.com</u></b></p>	<p>John Alesandrini Babcock &amp; Wilcox Co. P. O. Box 351 Barberton, OH 44203-0315 Tel: 330-860-6001 Fax: 330-860-2220 <b><u>jmalesandrini@babcock.com</u></b></p>	<p>Scott Crysel FM Global 5800 Granite Pkwy. Ste. 600 Plano, TX 75024 Tel: 972-731-1658 Fax: 972-731-1820 <b><u>scott.crysel@fmglobal.com</u></b></p>
<p>Robert DeCarrera Georgia-Pacific Corp. 133 Peachtree Street N.E. Atlanta, GA 30303 Tel: 404-652-4686 Fax: 404-654-4746 <b><u>rdecarre@gapac.com</u></b></p>	<p>Lino DiLeonardo Zurich 400 University Ave., 16<sup>th</sup> Floor Toronto, ON M5G 1S7 Tel: 519-824-4548 Fax: 519-824-0916 <b><u>lino.di.leonardo@zurich.com</u></b></p>	<p>Bruce Knowlen Weyerhaeuser Company WTC1B22 P. O. Box 9777 Federal Way, WA 98063 Tel: 253-924-6434 Fax: 253-924-4380 <b><u>bruce.knowlen@weyerhaeuser.com</u></b></p>
<p>Jim Quandt (Alt.) Weyerhaeuser Company P. O. Box 275 Springfield, OR 97477 Tel: 541-741-5428 Fax: 541-741-5895 <b><u>jim.quandt@weyerhaeuser.com</u></b></p>	<p>Ivan Semyanko, PE ABB Alstom Power, Inc. CEP Code 1017-2406 200 Day Hill Road Windsor, CT 06095 Tel: 860-285-3953 Fax: 860-285-4020 <b><u>ivan.semyanko@us.abb.com</u></b></p>	

This Subcommittee did not meet in the fall of 2005. They are scheduled to meet in the spring of 2006.

**SAFE FIRING OF BLACK LIQUOR SUBCOMMITTEE**

**Mark Sargent – Chairman\***

International Paper  
6285 Tri-Ridge Blvd.  
Loveland, OH 45140-7910  
Tel: 513-248-6086; Fax: 513-148-6679  
**mark.sargent@ipaper.com**

<p>Clif Barreca* Weyerhaeuser P. O. Box 1391 New Bern, NC 28563 Tel: 252-633-7696 Fax: 252-633-7657 <b><u>clif.barreca@weyerhaeuser.com</u></b></p>	<p>Len Erickson* Boise Paper Solutions P. O. Box 50 Boise, ID 83728-0001 Tel: 208-384-4933 Fax: 208-384-7637 <b><u>lenerickson@boisepaper.com</u></b></p>	<p>Larry Hiner* Babcock &amp; Wilcox P. O. Box 351 Barberton, OH 44203-0351 Tel: 330-860-6525 Fax: 330-860-9295 <b><u>lahiner@babcock.com</u></b></p>
<p>Majed Ja'arah Temple Inland, Inc. 1750 Inland Road Orange, TX 77632 Tel: 409-746-7315 Fax: 409-746-7249 <b><u>majedjaarah@templeinland.com</u></b></p>	<p>Brian Lemay* FM Global 165 Commerce Valley Dr. West Suite 500 Thornhill, ON L3T 7V8 Tel: 905-763-5683 Fax: 905-763-5622 <b><u>brian.lemay@fmglobal.com</u></b></p>	<p>Scott Moyer* Rayonier Performance Fibers P. O. Box 2070 4470 Savannah Highway Jessup, GA 31598 Tel: 912-427-5140 Fax: 912-427-5008 <b><u>scott.moyer@rayonier.com</u></b></p>
<p>Doug Murch* MeadWestvaco 3475 Newmark Drive Miamisburg, OH 45342 Tel: 937-495-9237 Fax: n/a <b><u>douglas.murch@meadwestvaco.com</u></b></p>	<p>Rick Young* Alstom Power 1119 Riverfront Parkway Chattanooga, TN 37402 Tel: 423-752-2603 Fax: 423-752-2660 <b><u>frederick.young@power.alstom.com</u></b></p>	

\* = Attended 10/05/05 Meeting

**FIRE PROTECTION IN DIRECT CONTACT EVAPORATORS  
AND ASSOCIATED EQUIPMENT SUBCOMMITTEE**

**Chris Jackson – Chairman\***

Global Risk Consultants Corp.  
c/o 12848 SW Thunderhead Way  
Beaverton, OR 97008  
Tel/Fax: 503-671-9829

**[chris.jackson@globalriskconsultants.com](mailto:chris.jackson@globalriskconsultants.com)**

<p>Randy Baker* Buckeye Technologies One Buckeye Drive Perry, FL 32348 Tel: 850-584-13808 Fax: 850-584-1738 <b><u><a href="mailto:randy_baker@bkitech.com">randy_baker@bkitech.com</a></u></b></p>	<p>Craig Cooke-Vice chairman* FM Global 815 Byron Drive Oconomowoc, WI 53066 Tel: 262-567-7370 Fax: 972-731-1820 <b><u><a href="mailto:craig.cooke@fmglobal.com">craig.cooke@fmglobal.com</a></u></b></p>	<p>Joe Goss* Delta Natural Kraft 1701 Jefferson Parkway Pine Bluff, AR 71612 Tel: 870-541-5052 Fax: 870-541-5089 <b><u><a href="mailto:jgoss@pbmill.com">jgoss@pbmill.com</a></u></b></p>
<p>Don Lacey* Eurocan P. O. Box 1400, Eurocan Way Kitimat, BC Canada V8C 2H1 Tel: 250-639-3440 Mobile: 250-639-4239 Fax: 250-639-3584 <b><u><a href="mailto:dlace@epp.westfrasertimber.ca">dlace@epp.westfrasertimber.ca</a></u></b></p>	<p>Joseph Lynch GE GAP Services 1105 Sanctuary Parkway Suite 200 Alpharetta, GA 30004-4741 Tel: 770-569-7091 Fax: 888-964-7348 <b><u><a href="mailto:joe.lynych@ge.com">joe.lynych@ge.com</a></u></b></p>	<p>Nick Merriman* SAPPI SMS Johannesburg, Republic of South Africa Tel: +27 (0) 32 456 1433 Fax: +27 (0) 83 661 8165 <b><u><a href="mailto:nick.merriman@sappi.com">nick.merriman@sappi.com</a></u></b></p>
<p>Steve Osborne (Alternate: John Yash*) Babcock &amp; Wilcox 20 S. Van Buren Avenue Barberton, OH 44203 Tel: 330-860-1686 Fax: 330-860-9023 <b><u><a href="mailto:slosborne@babcock.com">slosborne@babcock.com</a></u></b></p>		

\* = Attended 10/05/05 Meeting

**WASTE STREAMS SUBCOMMITTEE**

**John Rickard\* - Chairman**

Jacobs Engineering  
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 Greenville, SC 29606  
 Tel: 864-676-6393; Fax: 864-676-6005  
[john.rickard@jacobs.com](mailto:john.rickard@jacobs.com)

<p>Craig J. Aderman*                  SAPPI                  P. O. Box 5000                  Westbrook, ME 04098-1597                  Tel: 207-238-3177                  Fax: 207-856-3675  <u><a href="mailto:craig-aderman@sappi-na.com">craig-aderman@sappi-na.com</a></u></p>	<p>Henry Beder                  Weyerhaeuser                  WTC 2G25                  P. O. Box 9777                  Federal Way, WA 98003                  Tel: 253-924-4242                  Fax: 253-924-5920  <u><a href="mailto:hank.beder@weyerhaeuser.com">hank.beder@weyerhaeuser.com</a></u></p>	<p>Mark E. Cooper*                  FM Global                  Key Center                  601 108<sup>th</sup> Avenue, NE Ste.1400                  Bellevue, WA 98004                  Tel: 425-709-5084                  Fax: 425-454-7847  <u><a href="mailto:mark.cooper@fmglobal.com">mark.cooper@fmglobal.com</a></u></p>
<p>E. Scott Crysel                  FM Global                  Granite Park One                  Plano, TX 75024                  Tel: 972-731-1658                  Fax: 972-731-1820  <u><a href="mailto:scott.crysel@fmglobal.com">scott.crysel@fmglobal.com</a></u></p>	<p>Ned Dye*                  Jansen Combustion and                  Boiler Technologies                  12025 115<sup>th</sup> Ave., N.E., Ste. 250                  Kirkland, WA 98034-6935                  Tel: 425-825-0500, Ext. 125                  Fax: 425-825-1131  <u><a href="mailto:ned.dye@jansenboiler.com">ned.dye@jansenboiler.com</a></u></p>	<p>Arnie Iwanick*                  Harris Group, Inc.                  1750 NW Naito Parkway                  Portland, OR 97209-2530                  Tel: 503-345-4516                  Fax: 503-228-0422  <u><a href="mailto:arnie.iwanick@harrisgroup.com">arnie.iwanick@harrisgroup.com</a></u></p>
<p>Olie Kujanpaa*                  Andritz                  10745 Westside Parkway                  Alpharetta, GA 30004                  Tel: 770-640-2571                  Fax: 770-640-2455  <u><a href="mailto:olli.kujanpaa@andritz.com">olli.kujanpaa@andritz.com</a></u></p>	<p>John Lewis*                  Fluor Daniel Forest Products                  100 Fluor Daniel Drive                  Greenville, SC 29607-2762                  Tel: (864) 281-8535                  Fax: (864) 676-7630  <u><a href="mailto:john.lewis@fluor.com">john.lewis@fluor.com</a></u></p>	<p>Rob Orender*                  Georgia Pacific Corp.                  133 Peachtree Street, 18th Floor                  Atlanta, GA 30303                  Tel: 404-652-4606                  Fax: 404-584-1466  <u><a href="mailto:rhorende@gapac.com">rhorende@gapac.com</a></u></p>
<p>Winston "Jerry" Pate*                  Smurfit Stone Container Corp.                  P. O. Box 709                  Brewton, AL 36427                  Tel: 251-867-8371                  Fax: 251-867-1153  <u><a href="mailto:wpate@smurfit.com">wpate@smurfit.com</a></u></p>	<p>Jean-Claude Patel                  A.H. Lundberg Associates, Inc.                  406 Sagebrush Road                  Naperville, IL 60565                  Tel: (630) 355-5120                  Fax: (630) 355-5120  <u><a href="mailto:jc.patel@lundbergassociates.com">jc.patel@lundbergassociates.com</a></u></p>	<p>Paul Seefeld                  A.H. Lundberg Associates, Inc.                  4577 Pebble Brook Drive                  Jacksonville, FL 32224-7643                  Tel: 904-223-4147                  Fax: 904-223-4146  <u><a href="mailto:paul.seefeld@lundbergassociates.com">paul.seefeld@lundbergassociates.com</a></u></p>

\* = Attended 10/05/05 Meeting



## WASTE STREAMS SUBCOMMITTEE (Cont.)

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<p>Arie Verloop* Jansen Combustion and Boiler Technologies 12025 115<sup>th</sup> Avenue N.E. Suite 250 Kirkland, WA 98034-6935 Tel: 425-952-2825 Fax: 425-825-1131 <b><u>arie.verloop@ansenboiler.com</u></b></p>		

\* = Attended 10/05/05 Meeting

## PUBLICITY & NEWS RELEASE SUBCOMMITTEE

**Craig Cooke – Chairman\***  
FM Global  
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**craig.cooke@fmglobal.com**

\* = Attended 10/05/05 Meeting

**Registered for the meeting were:**

**Acuren**

Cooper, Mike, North Charleston, SC

**Alabama Pine Pulp**

Browning, John, Perdue Hill, AL  
Casey, Sherman, Perdue Hill, AL

**Alabama River Pulp**

Cameron, Willie, Perdue Hill, AL  
Gornto, Bruce, Perdue Hill, AL  
Kennedy, Jeff, Perdue Hill, AL  
Needham, Chris, Perdue, Hill, AL

**Alstom Power**

Gadai, David, Chattanooga, TN  
Gibowski, Steve, Windsor, CT  
Hollenbach, Dennis, Windsor, CT  
Kistka, Gerry, Jacksonville, FL  
LeBel, Mark, W. Simsbury, CT  
Young, Rick, Pensacola, FL

**American Forest & Paper Assoc.**

Grant, Thomas, Yonkers, NY

**Andritz, Inc.**

Collins, Peter, Alpharetta, GA  
Davis, Joe, Roswell, GA  
Frykmo, Christer, Alpharetta, GA  
Holm, Ralf, Alpharetta, GA  
Kujanpaa, Olli, Alpharetta, GA  
Lindh, Timo, Roswell, GA  
Phillips, John, Alpharetta, GA  
Sopanen, Jari, Roswell, GA

**Aon Risk Services**

Weiss, Barry, Miami, FL

**AXA Corporate Solutions**

Abel, Frederic, Lyon, France

**Axcon Corporation**

David, Mark, Milton, FL  
Pedicord, Brian, Milton, FL

**Babcock & Wilcox**

Allison, Samuel, Atlanta, GA  
Dickinson, Jim, Atlanta, GA  
Hiner, Larry, Barberton, OH  
Kulig, John, Barberton, OH  
Lance, Gail, Barberton, OH  
Osborne, Steve, Barberton, OH  
Sherlock, H. Bentley, Barberton, OH  
Yash, John, Benicia, CA

**BE&K Construction Co.**

Beebe, Don, Birmingham, AL

**Boise Cascade**

Erickson, Leonard, Boise, ID  
Villa-Real, Lorenzo, International Falls, MN

**Boise Paper**

Breaux, Bob, Jackson, AL  
Heritage, Johnny, Jackson, AL  
Welch, Eddie, Jackson, AL

**Buckeye Technologies**

Baker, Randy, Perry, FL  
Graham, Jim, Memphis, TN  
Olavessen, Len, Memphis, TN

**CNA Risk Control**

Walker, Billy, Apex, NC

**CBC Industrials Pesadas S/A**

Franca, Marco, Sao Paulo, Brazil

**Charles Higginbotham, PE, LLC**

Higginbotham, Charles, St. Simons Island, GA

**Registered for the meeting were:**

**ChemTreat**

Kanney, Mike, Glen Allen, VA

**Clement Consulting**

Clement, Jack, Akron, OH

**Coen Company**

Wadhvani, B. K., Burlingame, CA

**CORR System, Inc.**

Ruiz de Molina, Eladio, Birmingham, AL

**Diamond Power**

Kaminski, Bob, Lancaster, OH  
McAllister, Phil, Lancaster, OH  
Tavares, Alarick, Lancaster, OH

**DTE Engineering Services, Inc.**

Dietel, Chris, Ann Arbor, MI  
Empie, Jeff, Ann Arbor, MI  
McPherson, Bill, Ann Arbor, MI

**Dynamic Energy Systems**

McClain, Cliff, Exton, PA

**Eurocan Pulp & Paper**

Lacey, Don, Kitimat, B.C.

**F. L. Smidth Airtech, Inc.**

Shanahan, Dennis, Bethlehem, PA

**Fluor Daniel Forest Products**

Lewis, John, Greenville, SC  
Oscarsson, Bo, Greenville, SC

**FM Global**

Beaulieu, Andre, Thornhill, Ont.  
Cooke, Craig, Bedminster, NJ  
Cooper, Mark, Bellevue, WA  
Judge, Chris, Manchester, UK  
Lang, David, Montreal, Que.  
Lemay, Brian, Oconomowoc, WI

**FM Global (Cont.)**

Matarrese, Rick, Plano, TX  
Morgan, Rick, Norwood, MA  
Onstead, Jimmy, Alpharetta, GA  
Parrish, David, Bellevue, WA  
Polagye, Mike, Plano, TX

**GA Department of Labor**

Welch, Paul, Atlanta, GA

**GE GAP Services**

Franks, James, Somerville, TN

**General Reinsurance Corp.**

Freeman, Stuart, Atlanta, GA

**General Reinsurance Corp.**

Freeman, Stuart, Atlanta, GA

**Generali Consulting Solutions**

Lynch, Enrique, Allen, TX

**George H. Bodman, Inc.**

Bayse, Michael, Kingwood, TX  
Bodman, George, Kingwood, TX

**Georgia-Pacific**

Burney, S. L., Atlanta, GA  
Durham, Rick, Atlanta, GA  
Morency, Karl, Atlanta, GA  
Orender, Robert, Atlanta, GA  
Ripple, Mark, Atlanta, GA  
Smith, Roger, Atlanta, GA  
Tenbrunsel, Robert, Zachary, LA  
Walsh, Frank, Clatskanie, OR

**Glatfelter Co.**

Gentzler, Bill, Spring Grove, PA  
Scott, George, Spring Grove, PA

**Registered for the meeting were:**

**Global Risk Consultants**

Jackson, Christopher, Atlanta, GA  
Macaulay, Charlie, Beaverton, OR  
Smith, Andy, Tssaquah, WA

**Graphic Packaging International**

Gillis, Heath, Macon, GA  
Hutchison, Frank, Macon, GA  
Moore, Kevin, Macon, GA

**Harris Group**

Iwanick, Arnie, Portland, OR

**Hartford Steam Boiler**

Hess, Ron, Buckhead, GA

**Hercules**

Durham, Virginia, Philadelphia, PA

**Inst. of Paper Science & Tech.**

Verrill, Chris, Atlanta, GA

**International Paper**

Camp, Bill, Prattville, AL  
Carroll, Billy, Loveland, OH  
Clay, Dean, Loveland, OH  
Fuhrmann, Dave, Loveland, OH  
Kiper, Michael, Loveland, OH  
Sargent, Mark, Loveland, OH  
Stringfellow, David, Roanoke Rapids, NC

**Interstate Paper Corp.**

Crosby, Phillip, Riceboro, GA  
Hardy, Michael, Riceboro, GA

**Irving Pulp & Paper**

Mott, Dan, Saint John, NB

**Jacobs Engineers, Inc.**

Rickard, John, Greenville, SC

**Jansen Technologies**

Dye, Ned, Kirkland, WA  
Verloop, Arie, Kirkland, WA

**John E. Cover Engineering, Inc.**

Cover, John, Birmingham, AL

**Koch Cellulose**

Jackson, Robert, Brunswick, GA  
Lane, Terry, Brunswick, GA  
Roberson, Dale, Brunswick, GA

**K-Patents, Inc.**

Pyorala, Keijo, Naperville, IL

**Kvaerner Pulping**

Abrams, Larry, Charlotte, NC  
Blackard, Vernon, Charlotte, NC  
Christiansen, Gene, Charlotte, NC  
Conley, Clark, Charlotte, NC  
Geedey, Jim, Charlotte, NC  
Langstine, Robert, Charlotte, NC  
Morgan, Preston, Charlotte, NC  
Morris, Richard, Charlotte, NC  
Sherrod, Hank, Charlotte, NC  
Wasson, Eric, Charlotte, NC  
Weikmann, John, Charlotte, NC

**Lewis B. Bringman**

Bringman, Lewis, Baltimore, MD

**Lincoln Paper & Tissue**

LaFlamme, Alan, Lincoln, ME  
MacEachern, Pat, Lincoln, ME

**Liquid Solids Control**

Sweeney, Michael, Upton, MA

**Longview Fibre**

Berg, Greg, Longview, WA

**Registered for the meeting were:**

**Marsh, Inc.**

Hyche, Dwight, Atlanta, GA

**MeadWestvaco**

Andrews, John, Covington, VA  
Clemmons, Curtis, Charleston, SC  
Hammer, Lory, Covington, VA  
Klitzke, Rudimar, Covington, VA  
Lindsey, Larry, Charleston, SC  
Murch, Douglas, Miamisburg, OH  
Ramsey, Phil, Phenix City, AL  
Williams, Jimmy, Phenix City, AL

**Mid-America Packaging**

Goss, Joe, Pine Bluff, AR

**Nalco**

Singletary, Scott, Duluth

**National Board of BPVI**

Bynog, George, Columbus, OH

**Neenah Paper**

Sitko, Rick, Terrance Bay, ON

**NewPage Corporation**

Barry, Carson, Chillicothe, OH  
Fornetti, Michael, Chillicothe, OH  
Henriques, Fabian, Escanaba, MI  
Keane, Jim, Escanaba, MI  
Paulsen, Greg, Escanaba, MI  
Thompson, Craig, Wickliffe, KY

**Packaging Corp. of America**

Farris, Mike, Counce, TN  
Peeters, Steve, Tomahawk, WI  
Stelling, John, Tomahawk, WI

**Power Specialists Assoc, Inc.**

Bernard, Ron, Somers, CT  
Zamistowski, Bob, Somers, CT

**Process Equipment**

Nolen, Ken, Pelham, AL  
Ray, Allen, Pelham, AL

**Rayonier**

McDonald, Jesup, GA  
Moyer, Scott, Jesup, GA

**Recirculation Technologies**

Finley, Robert, Shreveport, LA  
Gaus, Jeff, Shreveport, LA

**Redwood Global Services**

Treger, Glen, Acworth, GA

**Rick Spangler, Inc.**

Spangler, Rick, St. Simons Island, GA

**RiNan, Inc.**

Pothier, Richard, Peabody, MA

**RMR Mechanical**

Roy, Bob, Cumming, GA

**Rotork**

Warnett, Chris, Rochester, NY

**SAPPI Forest Products**

Aderman, Craig, Skowhegan, ME  
McQuillan, Bill, Westbrook, ME  
Merriman, Nick, Braamfontein, So. Africa  
Norman, David, Cloquet, MN  
Potgieter, Louis, Ngodwana, So. Africa

**Smurfit Carton de Colombia**

Cubillos, Jairo, Cali, Colombia  
Franco, Daniel, Cali, Colombia

**Smurfit-Stone Container**

Burnham, Jamie, Jacksonville, FL  
English, Phil, Brewton, AL  
Pate, Jerry, Brewton, AL

**Registered for the meeting were:**

**SOMPO Japan Insurance**

Matsuo, Yasuo, Tokyo, Japan  
Muramatsu, Kenichi, Tokyo, Japan

**Stasuk Testing & Inspection Ltd.**

Stasuk, David, Burnaby, BC

**Stora Enso North America**

Giese, Jim, Wisconsin Rapids, WI  
Jirschele, Dale, Wisconsin Rapids, WI  
Wouters, Matt, Wisconsin Rapids, WI

**Tembec**

Tillman, Debra, St. Francisville, LA  
Tillman, Mike, St. Francisville, LA

**Turner Industries**

Breaux, Ronnie, Baton Rouge, LA

**Utilities Project Mgt., Inc.**

Osthoff, James, Ray, OH

**V&S Engineering, Inc.**

Viel, Jeff, Gorham, ME

**Western Pulp Limited**

Norton, Bob, Squamish, BC

**Weyerhaeuser**

Avery, David, Bennettsville, SC  
Barr, George, Bennettsville, SC  
Barreca, Clif, Albany, OR  
Blevins, Ron, Albany, OR  
Cason, Corey, Campti, LA  
Coyle, Wendy, Campti, LA  
Gore, Chris, Bennettsville, SC  
Hayward, John, Bennettsville, SC  
Hekkala, Eric, New Bern, NC  
Lewko, Will, Hanesville, KY  
McIntosh, Matt, Hanesville, KY  
Morgan, Charlie, Columbus, MS  
Roberts, Steve, Columbus, MS  
Walker, Robert, n/a  
Worsham, Jesse, Bennettsville, SC  
Yang, Heidi, Kamloops, BC

**Zampell Refractories, Inc.**

Barrett, Lynn, Tampa, FL  
Heffernan, John, Tampa, FL

## INTRODUCTION

BLRBAC's Chairman, Karl Morency, called the meeting to order at 8:00 a.m. on Wednesday, October 5, 2005.

**CHAIRMAN:** I would like to welcome all of you to the BLRBAC Main Committee meeting.

We will follow the published agenda for this meeting. We want to thank each of you for your continued support and attendance.

## OLD BUSINESS

### ACCEPTANCE OF MINUTES OF SPRING OF 2005 – Karl Morency

The first thing I'd like to do is Acceptance of the Minutes of the spring 2005 meeting. The Minutes are posted on the Web page. Hopefully, everyone has had a chance to see those. Would someone like to present a motion to approve the Minutes? Second? All in favor say "Aye"? "Opposed"? Thank you. The Minutes are approved as written.

## NEW BUSINESS

### 1. NEW MEMBERS/REPRESENTATIVE CHANGES REPORT

#### NEW REGULAR MEMBERSHIP

##### **KOCH CELLULOSE (a/d/b/a Brunswick Cellulose)**

Keith Miller has been designated as Representative

Terry Lane has been designated as Alternate Representative

**NEWPAGE CORPORATION** – former MeadWestvaco Papers group and operate five mills with recovery boilers.

Michael Fornetti has been designated as Representative.

Designated Alternate Representative has not been named yet.

**THILMANY LLC** – operates two recovery boilers at the former IP Kaukauna Mill.

Heath Hoffmann has been designated as Representative

Keith Morgan has been designated as Alternate Representative.

**NEW ASSOCIATE MEMBERSHIPS**

**LEWIS B. BRINGMAN LLC** – provides consulting services for air pollution control systems for the pulp and paper industry.

Lewis Bringman has been designated as Associate Representative  
Designated Alternate Associate Representative has not been named.

**REDWOOD GLOBAL SERVICES** – provides recovery boiler technical support to Power and Recovery Departments of Pulp & Paper Mills.

Glen Treger as sole proprietor is designated as Associate Representative.  
No Alternate Representative will be named.

**ZAMPELL REFRACTORIES** – supplier of refractory and its installation in recovery boilers.

Lynn Barrett has been designated as Associate Representative  
John Heffernan has been designated as Alternate Associate Representative

**NEW CORRESPONDING MEMBERSHIPS**

**JINHAI PULP AND PAPER COMPANY** – a new mill on Hainan Island, Peoples Republic of China with a single recovery boiler.

Yang Charng Jiann has been designated as Corresponding Representative  
Richard Stonebridge has been designated as Alternate Corresponding Representative

**REGULAR REPRESENTATIVE CHANGES**

**FM GLOBAL**

Jimmy Onstead replaced Ron Lamb as designated Alternate Representative

**GENERAL REINSURANCE CORPORATION**

Per Hellstrand replaced Michael Pero as designated Alternate Representative

**NORSKECANADA**

Rinus Jellema replaced Bob Norton as designated Representative  
Mark Wunderlick replaced Phil Jones as designated Alternate Representative

**WESTERN PULP**

Bob Norton replaced Terry Gadsden as Representative  
Designated Alternate Representative still to be chosen.



**ASSOCIATE REPRESENTATIVE CHANGES**

**GLOBAL RISK CONSULTANTS**

Christopher Jackson replaced Charles Macaulay as designated Associate Representative  
Charles Macaulay replaced David Lowell as designated Alternate Associate Representative

**CORRESPONDING MEMBERSHIP CHANGES - None**

**MEMBERSHIP COMPANY NAME CHANGES**

**ACUREN**

Previously known as Longview Inspection

**GENERAL REINSURANCE CORPORATION (d/b/a GEN RE)**

Previously known as General Cologne Re

**NEWPAGE CORPORATION**

Previously part of MeadWestvaco

**2. EXECUTIVE COMMITTEE REPORT – Karl Morency**

First I have a couple of administrative items. We currently have two short-term task groups that have been set up to address several issues. The first one is a joint task group between the ESP Subcommittee, the Instrumentation Subcommittee and the Safe Firing of Black Liquor subcommittee to define what is meant by “stand alone” with regard to the ESP systems. As control systems have advanced, this has become a little more difficult to define with regard to ESP. So the three committees are going to work together to come up with a consensus agreement about what is meant by the term “stand alone” when we talk about an ESP system. Mike Polagye has agreed to lead this joint task group.

The second one is a task group led by Len Erickson and looking at follow-up on the results to the BLRBAC survey with the intent of improving the BLRBAC organization. As soon as I finish up, Len will give an update on the results of that task group.

The next item I want to cover is we have three proposals that have been posted on the BLRBAC Web site that we want to vote on this morning. All three are questions addressing whether or not to make information available on the BLRBAC Web site. Before voting, I want to read through them one more time to make sure everybody understands what it is we are talking about. Then we will get into some open discussion because there have been opinions expressed both ways with regard to how we should handle this.

2. **EXECUTIVE COMMITTEE REPORT** – (Cont.)

Item #1: Should a database currently maintained by the Secretary of the ESP Subcommittee listing recovery boilers in service in North America be posted on the BLRBAC Web site? The database contains the following fields:

- Operating Company
- Location
- Year of Start Up
- Manufacturer's Contract Number
- Manufacturer
- Design Capacity
- Temperature & Pressure
- Lower Furnace Wall Tube Material
- Tubing Supplier
- Floor Tube Material
- Remarks

Item #2: Should the Critical Incident List currently maintained by BLRBAC be posted on the BLRBAC Web site? The database contains the following fields:

- Company Name
- Location
- Date of Incident
- Start Up Year
- Boiler Manufacturer
- Contract Number
- Capacity
- Operating Pressure
- Total Outage Time
- Leak Size
- Leak Location
- Bed Status
- Brief Summary
- Time of Day Incident Occurred

Item #3: This is the last item. Should the Explosion List currently maintained by BLRBAC be posted on the BLRBAC Web site? The database contains the following fields:

- Company Name
- Location
- Incident Date & Time (if known)
- Boiler Manufacturer
- Type of Explosion (for example, smelt water, auxiliary fuel)
- Damage Classification
- Water Source (if known)
- Cause

2. **EXECUTIVE COMMITTEE REPORT** – (Cont.)

There is a statement at the bottom that reads:

“BLRBAC currently does not have a policy regarding release of this information to either member companies or non-member companies. The Executive Committee does not know of any reason that the information shouldn't be available to anyone who wants it. However, before posting on the BLRBAC Web site, it was decided to solicit the membership for their views and approval.”

I will give a little background on some of the discussions that have taken place over the last two days. We debated this in the ESP Subcommittee and again at the Executive Committee meeting yesterday afternoon and we will open it up for discussion at this meeting, because I certainly want everybody to get a chance to express their viewpoints.

Certainly one of the reasons for collecting this information is to have it all together in one place and being able to look at it in total so that you can identify issues that span across the companies and address them. There is not a whole lot of value in collecting a bunch of data if nothing is done with it. So we on the Executive Committee felt the value in collecting this data is in making it available to members and supporting companies to try to improve the operation and safety of recovery boilers. On the other hand, there certainly is the possibility that somebody could access the information with not the best intent of member companies or the industry as a whole. So there was concern in that regard.

Starting with the discussion in the ESP Subcommittee, there were views presented from both sides. Some wanted to post it and some not wanting to post it. Most of the members of the ESP Subcommittee felt like they didn't see any reason not to post the information about the operating units. There was one exception to that; one member felt that he didn't want that posted as well. And everybody felt like they didn't want to post the Incident and Explosion Lists, but wanted to make it available only to member companies upon request to the Executive Committee. Therefore, it would not be posted for public viewing. At the end we had a vote and the ESP Subcommittee voted to recommend that the contract information as far as the operating units be posted to the Web page and be available to anybody that wanted to view it; but the committee recommended that the Incident and the Explosion Lists not be posted on the Web site. We would continue to maintain those lists, but the information would only be made available upon request to member companies. Anybody that is a member could make a request to BLRBAC through the Executive Committee and ask for the information and it would be made available.

2. **EXECUTIVE COMMITTEE REPORT** – (Cont.)

We had similar discussions yesterday in the Executive Committee meeting and I think after we discussed it we pretty much were aligned with the discussions that took place in the ESP Subcommittee and with the recommendations that came out of there. In the way of more background, we do periodically get requests from people who are not member companies looking for the Incident Lists, Explosion Lists, Contract Data Lists, etc. Historically we have handled each request individually at the Executive Committee level. We will normally ask people why they want the information and what they intend to do with it. If we think it's a valid request and is beneficial to the membership, then we have agreed to release the information; if we don't think it is beneficial, then we decline. I guess it has been kind of an arbitrary decision that the Executive Committee makes, but that is how we have handled it in the past.

At this point I would like to open it up to discussion on the floor. Is there anybody who would like to express an opinion one way or the other as far as posting of this information? I don't know if any of you have talked with your management and received strong opinions one way or the other.

**LEN ERICKSON – BOISE PAPER SOLUTIONS:** I discussed this with our management and with our Legal Department. Our opinion and the reason we think that the basic data should be posted is in looking at several Web sites we were able to find erroneous information out there now as far as the construction, age, type, manufacturer, etc. of our units and some of the other units that use to be ours and that we are familiar with. It is our opinion that we would rather have information out there that is accurate than information that is not accurate. On the second and third proposal, it is our opinion those databases should be held in reserve and available only on request.

**CHAIRMAN:** Thank you. One of the other items that we discussed was we don't want to put member companies in a position that if their company is strongly opposed to having this information (I'm talking about Items 2 & 3) being made publicly available, there is a possibility it's going to influence whether or not they would continue to report incidents to BLRBAC and we don't want to get into that situation.

Does anyone else want to discuss this?

**DEAN CLAY – INTERNATIONAL PAPER:** I guess our internal opinion after review was to not post any of it and just have it available for members by having Barbara provide it via an e-mail request or some other way. We didn't see the need to publish any of it on an open Web site.

**ATTENDEE (unidentified):** Karl, could you clarify how it would be posted and what we discussed at the meeting?

**CHAIRMAN:** It was my understanding that it would be one of the menu items on the Web page. You would click on it and it would be available to view or copy.

2. **EXECUTIVE COMMITTEE REPORT** – (Cont.)

**JOHN WEIKMANN – AKER KVAERNER:** Karl, I know we update lists for recovery boilers and try to keep on top of which company owns what boiler, but on the explosions and incidents I don't think we're ever going to go back and change the company name. Or what if it's a boiler that has been rebuilt several times, how do you stay on top of that? So at least I think maybe that information should be taken off of the two lists if you are going to put them out.

**CHAIRMAN:** When you say, "take the information off", you mean the manufacturer of the boiler?

**JOHN WEIKMANN – AKER KVAERNER:** Take off the information regarding the manufacturer and possibly the owner as well because owners change more often than the manufacturers any more.

**CHAIRMAN:** It's a close race! The names will be confused to protect the innocent! Anyone else?

**CRAIG ADERMAN – SAPPI:** Regarding that last comment, one of the things that I could see that this database would be valuable for would be looking at whether a condition that you might have on a particular unit made in a certain time period by a certain manufacturer might have ramifications for your unit. Then removing that manufacturer's information from that database would really lessen the value of that database. If maybe just a qualifying statement were put in, such as, "at the time of the incident this was the manufacturer and this was the owner. There is no guarantee that it is in the same condition at this point in time." I would prefer more of that type of a statement then taking the manufacturers' information off in particular.

**CHAIRMAN:** Thank you.

**JOHN ANDREWS – MEADWESTVACO & ESP SUBCOMMITTEE:** I just wanted to make a comment on the databases. These databases are not gospel information. They are the best attempt that several people have put together over the years to collect this data. Very much along the line that Craig said, there obviously needs to be a disclaimer in this that says that the information in these databases, both the units in service and the incident reports, are best effort information. Certainly one of the advantages of having at least the boiler in service available would be to have the member companies able to look at that and provide feedback to the committee for any information that needs to be updated.

**CHAIRMAN:** Thank you. Anyone else? Are you ready to vote? I don't know if it conforms to *Robert's Rules of Order*, but the comment was made earlier this morning that a lot of times people are reluctant to vote against something at BLRBAC assuming that it has been reviewed and approved and received everybody's blessing. I certainly don't think that is the case here and the suggestions was made maybe to take the pressure off people against maybe voting against one of these resolutions by asking for the "no" votes first as opposed to asking for the "yes" votes first.

2. **EXECUTIVE COMMITTEE REPORT** – (Cont.)

So just in summary, we have three proposals out there. One is to post the information about the operating units; the second one is to post information about critical incidents; and the third is to post the information on explosions. To review the ESP Subcommittee's recommendations one last time, it was to go ahead and post the information about the operating units; not post the Critical Incident List or the Explosion List. Now if you are opposed to even posting the list of operating units, let us know that because we certainly don't want to do something that the membership is opposed to. I'm going to start and we are going to do it one at a time.

**ATTENDEE (Unidentified):** Just based on the controversy or opinions that some of you might have, could I request that we have that on three separate votes: one for the Incidents; one for the Explosions; and one for the general information?

**CHAIRMAN:** That is what we are going to do. Three separate votes. It's only regular voting members or their alternates that can vote on this. When we vote, I'm going to ask you to stand up instead of raising your hand. You must have a red ribbon on your nametag in order to be able to vote. Alternates can only vote if the regular voting member does not vote.

**Item #1:** On listing the information on operating units, I'm going to ask for the "no" votes first. If you don't want that information posted on the Web site, please stand up. We have two people opposed. If you would like to see that information posted on the Web site, please stand up. We have 22 people voting "yes". How many people abstained from voting, please stand up? There was one.

This motion was voted on and passed.

**Item #2:** Whether to post the Critical Incident List on the BLRBAC Web page and make it available. Those opposed, please stand up. There were 13 opposed. Those who were in favor, please stand up. There were seven in favor. This motion was voted on and defeated.

**Item #3:** Whether to post the Explosion List on the BLRBAC Web page and make it available. Those opposed, please stand up. There were 14 opposed. Those who were in favor, please stand up. There were seven in favor. This motion was voted on and defeated also.

At this point the second and third motions have been defeated and I think we should vote on how we will handle the requests for that information going forward. Right now the Executive Committee reviews those requests. We would release it to member companies on request. The Executive Committee would continue to review any requests from outside organizations. If we felt it was for the good of the organization, then we would release that information; if we didn't feel it was beneficial, then we would decline to release it. Are there any comments about doing it that way? Are you in favor of this? Opposed? I'll now take one more vote and just make sure that we have a consensus on how we will handle this situation as we go forward.

2. **EXECUTIVE COMMITTEE REPORT** – (Cont.)

**Item #4:** Critical Incident Lists and Explosion Lists will be released to member companies on request and to non-member companies only after a case-by-case review by the Executive Committee.

Those in favor of those requests coming in through the Executive Committee being released to any member company that asked for it and then for non-member companies, the Executive Committee would make the decision whether or not to release it. All those in favor of handling it that way, please stands. Anybody opposed? This has been approved unanimously.

This will be in the Meeting Minutes so that everyone will understand how we are going to deal with this going forward.

**ATTENDEE (unidentified):** In the votes we have just taken, does a member company mean regular members only, or does it include associate and corresponding members as well?

**CHAIRMAN:** In our discussions on the Executive Committee, and I think also at the ESP, we agreed it would be any member, not just Regular members, but Associate and Corresponding members as well. The thinking here is, we are an organization of recovery boiler operators, insurers and manufacturers, but we also have the Associate members. We feel like this is a partnership. We are all working for the same end, that is to improve the operation and safety of recovery boilers. In partnership with our vendors we want to make that information available to them as well.

The next item I want to cover is the dates for future meetings. We discussed last time that we're changing some of the meeting dates from the normal first week of April and October to avoid interfering with some religious holidays. The next meeting this will impact is the fall of 2006 meeting. That will be moved to the second week of October. Those meeting dates are October 9, 10 & 11, 2006. Of course, that will be posted on the Web site. Also, for the spring of 2007, instead of having the meeting the first week in April, it will actually be a week ahead of time. It will be held in the last week of March. So it will be March 26, 27 & 28, 2007.

The next item is vendor handouts. We have had a couple requests this time to include vendor handouts in the registration packets. Because of the burden this could potentially place on the people who assemble the registration packets, we declined those requests. What we are going to ask you to do if you have handouts, such as if you have a hospitality room or some information that you want to make available to the membership, that you place them at the side table in the Registration Room. You are welcome to bring your handouts in there so they are available to people as they come in to register and pick up their registration material. So if you have information you want to make available to the membership, you can bring it to the Registration Room and leave it there. All future flyers, etc. will be handled in that manner.

## 2. EXECUTIVE COMMITTEE REPORT – (Cont.)

The last item I have is subcommittee participation. It is really within the subcommittees where all the work of this organization gets done. This is an all-volunteer organization. So nothing happens unless somebody volunteers their time to do it. Some of it comes from your company time; some of it comes from your personal time. Certainly your companies are approving your coming to attend these meetings, but there is a lot of work that goes on outside of the meeting times as well. The quality of the recommendations and the work that comes out of here is dependent on the quality of the work that goes into it. We depend on the membership to provide that. We want to encourage everyone to continue to participate in the subcommittee meetings if you are already doing so; if you are not, I certainly would like to encourage you to think about participating. I want to ask the Subcommittee Chairmen when they get up give a status of where you are in terms of membership wise, what you have coming up, and what you can use some help on in future meetings so that people are aware of the areas where we need some additional assistance.

Next, Len Erickson is going to give us an update on the work that the Task Group has done to analyze the BLRBAC survey results and go over the recommendations that came out of that survey.

### 2.1 REPORT ON SURVEY RESULTS

**LEN ERICKSON:** A year ago a membership survey was sent out and we had a number of respondents. The questions ranged from the quality of the facilities, location of the meetings, timing of the meetings, do you participate in subcommittees, etc. Last spring I gave a short brief summary to this group of what the survey responses were. I was asked by the Executive Committee to put together a working task group. The task group consisted of Dave Avery from Weyerhaeuser, David Craig from Smurfit, Jim Dickinson from B&W, Mike Fay from Simpson, Len Olavessen from Buckman, John Browning from Alabama River, Chris Jackson from Global Risk and myself. In addition to seeing each other here at the meeting, we also met via two conference calls. We have about four or five key recommendations. They were presented to the Executive Committee yesterday with some discussion and then the action items were agreed on. I'll summarize these for you now.

The first area was meeting participation. One recommendation that came up was to enhance meeting participation would be to couple BLRBAC with TAPPI Steam & Power at the spring meeting which has been done in the past and perhaps AF&PA with their fall meeting or another venue. If that is not consistent with the goals of those organizations, we perhaps can talk to ISPT or Oakridge and couple that with an afternoon session on Wednesday. The thought and reasoning on this was that it would give people a little bit more ammunition to go to their managers to get approval to come to the meeting as another half day or so generally isn't a big imposition. So there is some follow-up required by myself with Tom and the other organizations. Any questions on this?



2. **EXECUTIVE COMMITTEE REPORT** – (Cont.)  
2.1 **REPORT ON SURVEY RESULTS** – (Cont.)

The next area was subcommittee membership. It was recommended that advanced information on what the subcommittees were working on be provided out on the website and perhaps even in the Advance Registration package. The operating guidelines for BLRBAC ask the subcommittees to submit their agendas two weeks prior to the spring and fall meetings. I don't know if we will have that in enough time to have it posted on the Web site, but the intent is to have them available upon registration. The Subcommittee Chairs will also be asked to submit topics for inclusion in the Advance Registration Notices. For instance, if the Safe Firing Subcommittee is working on lower furnace wash switches, or something like that, the topic would be listed on a page within the meeting packets so that the membership would have an idea of what is going on in that subcommittee.

The next item was to reinforce the open meeting and open subcommittee membership by announcing it at all meetings. In other words, get the message out that these meetings are "open." There are some meetings that need to be "closed." The ESP Subcommittee is one of those and the other subcommittees have them from time to time. Certainly, on most of the subcommittees that have posted a "closed" meeting, you could approach the Subcommittee Chair and ask to monitor the meeting. When I was Chairman of a subcommittee and someone approached me to ask if they could monitor and just listen in, I would generally accommodate them. The Subcommittee Chairpersons and the Executive Committee will solicit volunteers to fill vacancies on the subcommittees, but also members can ask to participate. I know of several committees right now that are looking for members. When they get up to give their Subcommittee Reports later this morning, they will let you know how many new members they are looking for. There is a balance some of the Subcommittees try to keep between operating companies, insurers, and boiler manufacturers.

Another suggestion was get a list of new members and attendees to the Subcommittee Chairs. The Meeting Minutes and the Registration Lists are available now for the subcommittee chairs to use, but we don't intend to publish anything more than we do now.

One comment was pretty common throughout the returned surveys. It was regarding the Operating Problems Session and how to keep it going, how to make it more interesting, to improve participation, etc. The first recommendation was to have a technical focus for part of the Operating Problems Session. Ideas included asking a supplier to give a Technical Presentation to kick off the session and having a panel discuss a hot topic on their subcommittee, for example, dissolving tank explosions. We tried doing some of that this time and we put in a little on changes that were made to the Safe Firing of Black Liquor as approved by membership vote last April. We also had a presentation by Rotork. It is my responsibility as Vice Chair to coordinate the Operating Problems session. If the membership has topics or panel discussions that they would like to see, please e-mail or call me. I'm always open to suggestions.

2. **EXECUTIVE COMMITTEE REPORT** – (Cont.)  
2.1 **REPORT ON SURVEY RESULTS** – (Cont.)

It was also suggested that we provide advanced notice on the focus topic and leave time for the open forum. As I stated in the spring meeting, we will start working these in to the extent we can. Are there any questions?

The next are that was discussed, and it was common throughout the survey, is how do we maintain and improve the participation of members. One option is to make the Technical Presentations part of the BLRBAC meeting. Right now we adjourn the BLRBAC meeting at around 10 o'clock and then we get about a quarter of the membership staying for the Technical Sessions. We have had some very good Technical Presentations. The recommended action item is that the meeting adjourns after the Technical Presentations and adjusts the morning break to make the Technical Presentations more inclusive. One option that the subcommittee recommended was moving the Technical Presentation to prior to the business meeting. That was discussed at the Executive Committee meeting and it was decided not to try that at this time.

Lastly, on follow-up, where do we go from here on the surveys; how do we know if we are being effective or if the changes are actually moving us forward? The first thought was to hand out survey forms at the meetings for feedback. The AF&PA, University of Toronto, and TAPPI do it that way. But we've never done it. We are going to start by developing a short fill out the card form. Hopefully next spring at the Main Committee Meeting on Wednesday we will have a short survey form for people to fill out and turn in to give us some feedback on how the meetings are going. The second option is to repeat the survey in a modified format and E-mail it out. We deferred that as we felt it was too soon since the last survey, but we will look into this again at a future date and we're keeping it on the table.

I would like to again thank the people who participated in the task group for all their work. I think we received good input and if anyone has any other suggestions, certainly contact myself or one of the people on the task group.

**ATTENDEE (unidentified):** I have one concern about trying to combine the BLRBAC meeting with TAPPI or AF&PA or some other organization. We've got an initiative or some kind of proposal every year about cutting costs, etc. It is very difficult for people to get approval sometimes to attend what are considered to be conferences, such as, TAPPI where there are lots of things going on. In fact some of the member companies in this meeting, aren't TAPPI members. There are ups and downs a little bit in participation, but attendance at BLRBAC meetings is at quite a stable participation level. Personally I have never had any problem with is getting acceptance to go to this meeting. I worry a little bit if that level of acceptance will continue if we combine with TAPPI and start meeting in other parts of the country, especially those that may be considered resort areas.

2. **EXECUTIVE COMMITTEE REPORT** – (Cont.)  
2.1 **REPORT ON SURVEY RESULTS** – (Cont.)

**LEN ERICKSON:** I might have misstated what I meant. The intent isn't to have a combined meeting; rather it's more like TAPPI Power & Recovery piggybacking onto this meeting on Wednesday afternoons of the spring BLRBAC meeting. So you can go to BLRBAC (and it's going to continue to be Atlanta) and then, if you want to, you can stick around for the TAPPI Power and Recovery meeting. Or, if you are going to the TAPPI Power and Recovery meeting, you want to come early for BLRBAC. It gives you an additional opportunity without having to make an additional trip. It's not intended to link the meetings as far as attendance at one is attendance at the other. It is just an opportunity to reduce travel. A number of people who come to this meeting I also see at TAPPI when I get there or I see them at the University of Toronto or any number of different locations. Piggy-backing meetings in this way also gives the opportunity for operators that don't get to some of those other meetings the ability to stay on for that part of the meeting if they so choose. But it's certainly not the intent to say that if you are going to attend BLRBAC, you are going to the AF&PA meeting or you are going to the TAPPI meeting or you are going to the Oakridge Presentation, or whatever it happens to be. It's just an opportunity to link a couple to give more exposure. Did I say that right, Jim? Are there any other questions? Thank you.

3. **TREASURER'S REPORT** – Ron Hess

Good morning everyone. I usually cover the registration, the financials and co-ordinate with the hotel.

Attendance consisted of 166 advanced and 40 at door. There were 25 paper companies, four boiler manufacturers, ten underwriting and loss control companies, 25 associate member companies represented and we had seven guests attend this particular meeting. Our overseas guests for this meeting came to us from Brazil, Colombia, France, Great Britain, Japan and South Africa. So again we would like to thank those individuals that traveled a great distance to get here and participate.

On the financial side we have two sources or repositories of money. We have a Certificate of Deposit and the balance in that account equals \$13,475.00 and in our Checking Account as of today we have \$51,699.00. Since the last meeting the average balance in the checking account after we pay our bills is normally around \$35,000.00 or \$36,000.00. We had an accounting review and audit for the last fiscal year to keep us in compliance with our "not for profit" status and the rules and by-laws of BLRBAC. That audit produced a couple of recommendations for us to increase some efficiency and reduce a couple of our expenses on our business checking account and things like that. The Executive Committee voted to implement those activities; so we will be doing that over the next year. I also submitted the operating budget for 2006 and the Executive Committee approved that. We are planning on about an 8% to 9% increase in our operating costs for the next year. So that is the budget that we will be working to. I encourage you to keep attending and get the word out at the mills to increase the attendance from there because that will help me stay on budget because of more people showing up for BLRBAC. So you can help me out there.

3. **TREASURER'S REPORT** – (Cont.)

We announced the dates for the 2006 and the 2007 meetings. We will be back here at this facility for those two years. We just renewed the contract here for 2006 and 2007.

I've got two Water Treatment Seminar binders left and I'm not going to take them home. So, if two people would help me out, I'll make you a deal you can't refuse on those two binders.

As far as the hotel feedback and comments on the registration process, feedback on registration, when you come to the desk or if you see Frank or myself, take a minute to give us some feedback if you have some suggestions or if you have experienced something that we need to know about. Feel free to give us some feedback. The survey and the questionnaire gave us a little bit of information, but hearing from you guys about your experiences or anything that we can do to try to make things a little bit easier in those areas would be helpful. Your feedback is certainly appreciated.

We want to remind everybody that a lot of the communications for registration is driven off your e-mail addresses. So if that has changed, be sure to make a note on the back of your luncheon ticket card. If your e-mail address changed, if your company name changed, if you moved, let us know that so we can keep our database current and maintain effective communications with everybody. Does anyone have any questions on financials or the hotel, etc.?

**GEORGE BODMAN:** I would just like to make a comment that I thought last night at the gathering downstairs was probably the best that I have ever seen at BLRBAC. The food was outstanding, the camaraderie was outstanding; the trivia quiz was outstanding; and I think that you guys deserve a lot of credit for doing that for us last night.

**RON:** The companies that supported that are listed on the handout sheet and they are the ones who deserve the credit. I mean the hotel is here to provide service to you guys and that is what we pay them to do. We do appreciate your comment. Any other questions or comments? Thank you very much.

4. **SECRETARY'S REPORT** – Mike Polagye

In terms of the survey review Task Group recommendations, we will try implementing a couple of them for the spring 2006 meeting. As Ron mentioned, our BLRBAC Operating Procedures are posted on the Web site. Section 3-6, Item d, states: "The Subcommittees will issue a written agenda to all subcommittee members and task group members at least two weeks in advance of each scheduled meeting." We have had one or two subcommittee chairmen who have actually done that, but we are going to try to encourage others to do it as well. I will be sending a request to each of the subcommittee members about a month before the spring meeting asking them for their agendas and I will post any of those agendas as they come in onto the BLRBAC Web site. We certainly hope that this will make it easier for you to decide which meeting you should attend.

4. **SECRETARY'S REPORT** – Mike Polagye

Also, again to try to promote the attendance at the subcommittee meetings by people attending BLRBAC who are not official subcommittee members, I will be asking the subcommittee chairs for a bullet list of items that they expect to address at their meeting. I'll be doing this at about January 1<sup>st</sup> for the spring meeting and July 1<sup>st</sup> for the fall meeting so that those bullets can be included as part of the meeting registration package. I'm not exactly sure how we are going to incorporate it into that package yet, but we will work on that issue. Again it is to try to help all the people who are planning to attend or are considering attending to understand what is going on in the various subcommittees.

Are there any questions? Thank you.

**SECRETARIAL SERVICES REPORT** – Barbara Holich

It is required that each regular member company (boiler insurers, boiler operators and boiler manufacturers – voting members) keep me advised of names and e-mail addresses of their designated Representative and designated Alternate Representative. Preferably they will be someone who regularly attends BLRBAC. It is the member company's responsibility to keep me informed of any changes in representation by e-mailing me a letter stating the changes in responsibility and/or any e-mail address changes.

Anyone who wishes to be added to the BLRBAC e-mail list, please e-mail me ([fhholich@aol.com](mailto:fhholich@aol.com)) your name, company and e-mail address.

I need someone to take the initiative (in best case scenario, this should be the designated Representative) to keep me advised of any member company name changes, mergers, etc. so that the BLRBAC database can be properly maintained.

No changes are made to the database until written (e-mail are acceptable) notification is received. I keep a file folder for each member company that includes correspondence naming the Representative and Alternate for each organization. These letters usually contain the e-mail addresses I must have in order to maintain the BLRBAC address book. Therefore, be sure that I have your current working e-mail address. BLRBAC notice of meetings and meeting minutes will only be sent via e-mail. If an e-mailed notice is returned to me as "undeliverable," that e-mail address will be deleted from the BLRBAC database after a second attempt has been made. This second attempt is made in case someone's mailbox is full at the time of the first mailing.

If you are a designated Representative or Alternate Representative for your organization and something happens wherein you will no longer be functioning in this capacity, such as, retirement, occupational change, downsizing, etc., please let me know ([fhholich@aol.com](mailto:fhholich@aol.com)) and supply me with the name and e-mail address of whomever will fill your vacated position within BLRBAC.

## 5. SUBCOMMITTEE REPORTS

### 5.1 ESP SUBCOMMITTEE REPORT – John Andrews (See *Appendix A* – Incident List)

The ESP Subcommittee met in closed session on Monday October 3rd with 12 of 13 members represented. Bob Norton was not able to attend due to job commitments.

The Subcommittee met in open session on Tuesday morning October 4th with 12 of the 13 members represented and about 180 guests. During the open session, the Subcommittee reviewed 40 incident reports from North America. Of the 40 incidents, there were no explosions and there were no boiler or dissolving tank explosions reported this year. The Subcommittee had received notice of a dissolving tank inspection but the incident report was not submitted prior to the meeting. It is expected that the report will be available for the Spring 2006 Meeting. Seventeen (17) of the leaks were classified as critical incidents and 22 were non-critical incidents. An ESP was performed in 11 of the incidents including 10 of the critical incidents. There was one ESP reported with no leak found on subsequent inspection but that incident was considered critical due to water entering the furnace from an external source.

The basic definitions of Explosions, Critical Incidents and Non-Critical Incidents were re-established by the Executive Committee in September 1999. They are summarized as follows:

**Explosions:** Only if discernible damage has occurred. This does not include incidents where there is only evidence of puffs or blowback alone. With the new emphasis on damage, more attention will be given to the extent of damage and the amount of downtime for the damage repair (as opposed to total downtime that includes other activities).

**Critical Incidents:** All cases where water in any amount entered the recovery unit forward of isolating baffles (and therefore would be a similar criterion to the need to perform an ESP). This includes leaks of pressure parts of all sizes. Since small leaks often wash adjacent tubes to failure, this category is important to our learnings. This new definition will result in more entries for the Critical Incident list. (This new category is being re-titled Critical Incidents, rather than Critical Exposures, since we are not restricting the cases only to “exposure” of smelt to water, as in the past.)

**Non-Critical Incidents:** Those cases that did not admit water to the boiler cavity defined above.

5. **SUBCOMMITTEE REPORTS** – (Cont.)

5.1 **ESP SUBCOMMITTEE REPORT** – (Cont.)

Some explosions reported before 1999 occurred with no discernable damage or injury, but were reported to be an explosion. Before 1999, the term Critical Exposure was used rather than Critical Incident. A Critical Exposure required the presence of smelt that could be contacted by the water. If there was a leak found and there was a clean furnace, it was considered a Non-critical Exposure. The 1999 change had the effect of increasing the cases classified as Critical Incidents from this standpoint.

**Incident Locations**

The general locations of the leaks for boilers in North America are shown in Figure 1, which displays a typical boiler, not representing any particular style or model. The yellow marks are the non-critical incidents and the red were listed as critical incidents. The leaks locations are summarized as follows:

- 21 – Economizer
- 3 – Superheater
- 4 – Boiler Bank
- 1 – Furnace Screen
- 8 – Wall Tubes
- 1 – Floor Tubes
- 1 – Smelt Spout
- 1 – External Water Source

**Root Cause**

The determination of the root cause is somewhat of a subjective determination by the Subcommittee based on information in the reports. The breakdown is listed below:

- 10 – Fatigue
- 2 – Thermal Fatigue
- 3 – Unknown
- 8 – Weld Failure
- 7 – Corrosion / Erosion
- 8 – Stress Assisted Corrosion or Corrosion Fatigue
- 1 – Overheat

5. **SUBCOMMITTEE REPORTS – (Cont.)**

5.1 **ESP SUBCOMMITTEE REPORT – (Cont.)**

**How Discovered**

Operator observations during boiler walkdowns continue to be the prevalent method of detecting leaks and accounted for identification of 32 of the leaks. Three (3) of the leaks were identified by the control room indications and Leak Detection Systems identified 3 of the leaks.

Leak detection systems were installed on units in 13 of the incidents. The mills reported that the leak detection system provided the initial indication of the leak in 3 incidents and that the system confirmed the leak in 5 other incidents. Several of the reports commented that the leaks were so small they were probably below the sensitivity of the detection system and 6 of the units with leak detection systems reported leaks in the economizer section that would not be expected to show up on most leak detection systems. It is important that mill operations be familiar with the capabilities and the shortcomings of any leak detection system installed. It is also important to dedicate the necessary resources to properly maintain the leak detection systems. Mills should consider dedicating maintenance personnel to the calibration and repair of the systems.

Two reports included leaks found during hydrostatic testing.

**Incident Review**

Appendix A contains a summary of the incidents reviewed during the meeting.

Figure 2 shows the critical incidents reported each year. There have been 32 Critical Incidents reported in 2005 and there looks to be an increasing trend in the critical incidents reported even though there has been a decrease in the explosions. The change in the Critical Incident definition in 1999 from the previous description of Critical Exposure had increased the number of classified incidents because the new definition does not require molten smelt to be present, only that the leak was in a critical area of the furnace.

Figure 3 shows that the predominance of explosion history for the recent past has been dissolving tank explosions with two explosions last year and none reported in 2005. Although, we are expecting a report from a dissolving tank explosion that occurred at Weyerhaeuser mill in Kingsport, TN. Fortunately, there have been only four boiler explosions in the last 10 years.

Figure 4 shows the five year running average of smelt water explosions and gives a good indication of the progress that has been made in reducing smelt water explosions with only two incidents reported in the last 5 years.



5. **SUBCOMMITTEE REPORTS – (Cont.)**

5.1 **ESP SUBCOMMITTEE REPORT – (Cont.)**

BLRBAC changed the definition of an Explosion in 1999 to only include incidents that had discernable damage. Figure 5 is similar to Figure 4 but it excludes the previous incidents that had been listed as an Explosion even though no damage was reported. The general shape of the curve is similar but the reported rate prior to about 1997 has decreased.

Figure 6 is a plot of explosion history per 100-boiler operating years. The smelt water explosion experience is continuing to trend down over time and is down to just under 0.8 explosions per 100 boiler operating years, but the total explosions have been holding steady but are starting to drop slightly at just under 1.2 explosions per 100 boiler years. The Total Explosions includes all causes combined, and is being driven by the recent dissolving tank explosions. The factor is calculated by a summation of all reported explosions since 1948 divided by a summation of the number of boilers reported in service each year during the same period. We all need to continue the making the efforts to try to keep that trending down. Effort should be focused in developing better procedures to handle heavy smelt runs and plugged spouts.

Figure 7 is similar to Figure 6 but it has been revised to take out the incidents that had no damage reported. Again, the shape is similar but the Total Explosion rate is down to 0.9 incidents per 100 boiler-operating years and the Smelt Water Explosion rate is down to 0.55 incidents per 100 operating years.

**Learnings**

There were several reports that had similar leak locations and causes that indicate areas for emphasis during future inspections. One area for inspection on older B&W units is the side wall riser tubes from the upper headers to the drum, especially those that are closest to the drum and those risers with a close connected, tight bend by the header that leaves little room for expansion, to see if cracking on the ID of the riser is occurring.

A reported floor tube failure and two reported floor tube leaks last meeting suggest that it is a good idea to check for possible thinning at welds in the floor, especially on flat floors. “Push Through” of the weld into the ID of the tube can be causing steam blanketing and thinning of the tube near the weld. Karl Morency of GP made an interesting presentation of several instances where they had observed the problem.

Mills need to emphasize training and empowerment of operators to identify and react to tube leaks in critical areas of the boiler by timely initiation of an ESP.

Proper maintenance and support of leak detection systems is critical to their reliability so that operators will trust the indications they are receiving from the systems. The required resources should be dedicated to the leak detection system maintenance and calibration.

5. **SUBCOMMITTEE REPORTS – (Cont.)**  
5.1 **ESP SUBCOMMITTEE REPORT – (Cont.)**

**ESP Document Changes and Clarifications**

There was a request for clarification of the statement in the ESP document that requires “a dedicated, stand-alone system” for initiation of the ESP. The Subcommittee discussed the nature of the ESP system and some differences in the system from the other Boiler Safety Systems. The ESP system is generally an “energize to trip” system that relies on energizing outputs to initiate the desired functions where the Boiler Safety Systems are de-energize to trip. Because of that, the input and especially the output components must have maximum reliability. In addition, the ESP system uses relatively simple logic where one action initiates all functions of the system.

The Executive Committee has proposed the formation of a working group with participation from the ESP Subcommittee, the Instrumentation Subcommittee and the Executive Committee to review the recommended system for imitation of the ESP. Any comments or suggestions on the matter would be greatly appreciated.

The Black Liquors Safe Firing Subcommittee has recently changed the recommended trip logic for the black liquor system to include tripping the black liquor fuel pump as part of a black liquor trip. The Subcommittee will be reviewing the ESP document to determine any revisions that are necessary to conform the ESP document to the Black Liquors Safe Firing document.

The Subcommittee discussed a request on the need to close the steam stop valve on an ESP in order to maintain pressure on the unit until the relief valve opens to assure rapid drain. Mills need to review their specific situation to determine if closing the valve should be part of their specific procedure.

Examples of situations that may require closing the main stop valve would be if the recovery boiler is the only unit on a high pressure header such that a trip of the boiler would allow the header pressure to quickly decay or if the unit does not have a non-return valve, or the non-return valve is unreliable to prevent backfeeding steam into the drum during following an ESP. The Subcommittee will develop language to include closing the MSV as an “Optional Item to Consider” (Section 3.9).

The Post ESP Procedure document states that “consideration should be also be given to isolating the feedwater header and all steam headers (with the exception of the header providing steam to the smelt shatter jets) if it can be done safely from remote locations.”

5. **SUBCOMMITTEE REPORTS** – (Cont.)

5.1 **ESP SUBCOMMITTEE REPORT** – (Cont.)

The Subcommittee will develop a revision of the Post ESP Guidelines to include a provision to confirm that all ESP functions are in the proper control state following initiation of the ESP. The Subcommittee discussed a suggestion that the ESP procedure include the provision to automatically switch any controller that relates to a function of the ESP process (such as the ID Fan speed control) to the “automatic” state if it is in “manual” state. The Subcommittee felt that there may be reasons that the controllers are in the manual state and forcing them to automatic may cause problems.

**Revised ESP Questionnaire**

The ESP questionnaire form has been simplified so that it will be easier to fill out and is more interactive. You will fill out certain sections depending upon the type of incident and the form contains a table that tells you which sections you need to fill out and which sections you can leave blank.

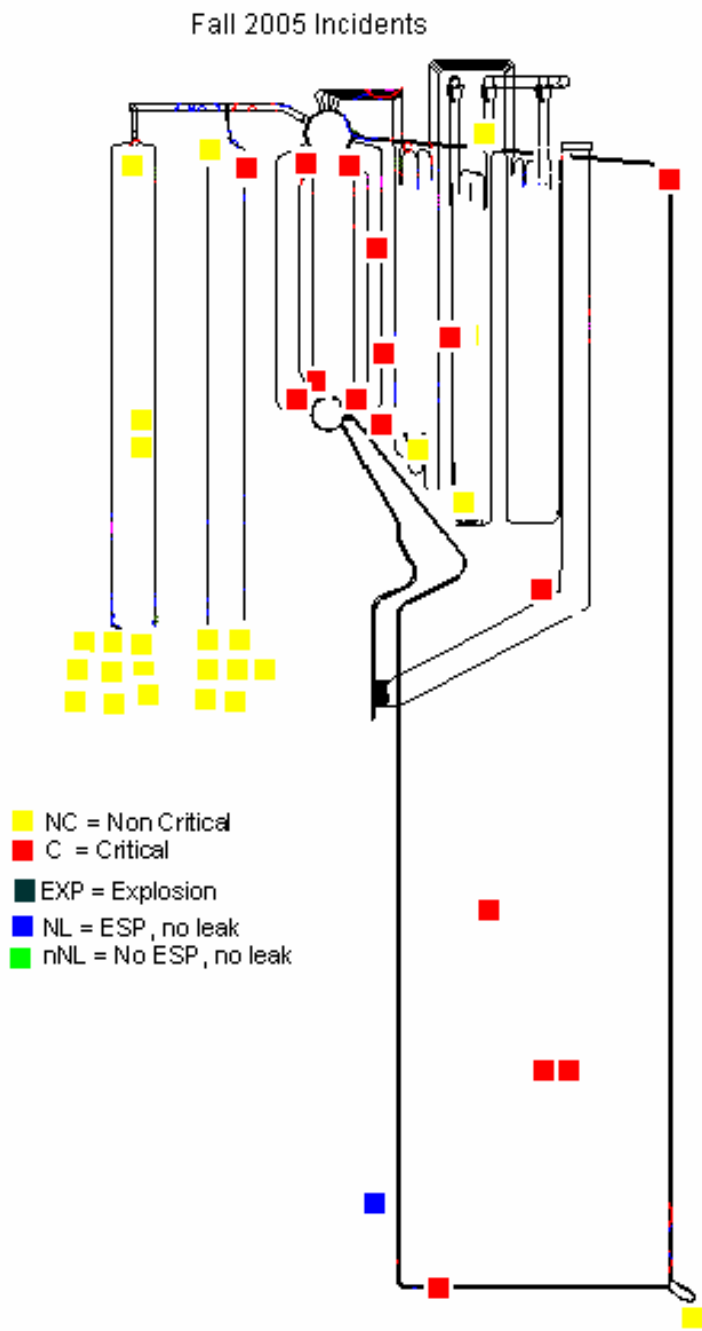
Questionnaires received less than two weeks prior to each BLRBAC meeting will be held to the following meeting for reporting in order that a summary of the incidents that will be reported at the meeting can be included in the registration packets.

The Questionnaire has been updated based on comments received by the Subcommittee so, whenever you need to fill out an ESP Questionnaire please go into the BLRBAC Web site [www.blrbac.org](http://www.blrbac.org) and pull up the latest copy of the form. The form can be filled in electronically and sent in by e-mail to [jlcllement3315@sbcglobal.net](mailto:jlcllement3315@sbcglobal.net) or it can be printed out and filled in by hand and mailed in. Either way is appreciated. Just be sure to fill it out and send it in.

The Subcommittee is now copying visuals that are included in the ESP questionnaires into a Power Point presentation to be used in the open session. Please consider the quality of visuals included with a questionnaire, in particular for those reports submitted as hard copy.

5. SUBCOMMITTEE REPORTS – (Cont.)  
5.1 ESP SUBCOMMITTEE REPORT – (Cont.)

|



Cont.)

Figure 1

5. SUBCOMMITTEE REPORTS – (Cont.)  
5.1 ESP SUBCOMMITTEE REPORT – (Cont.)

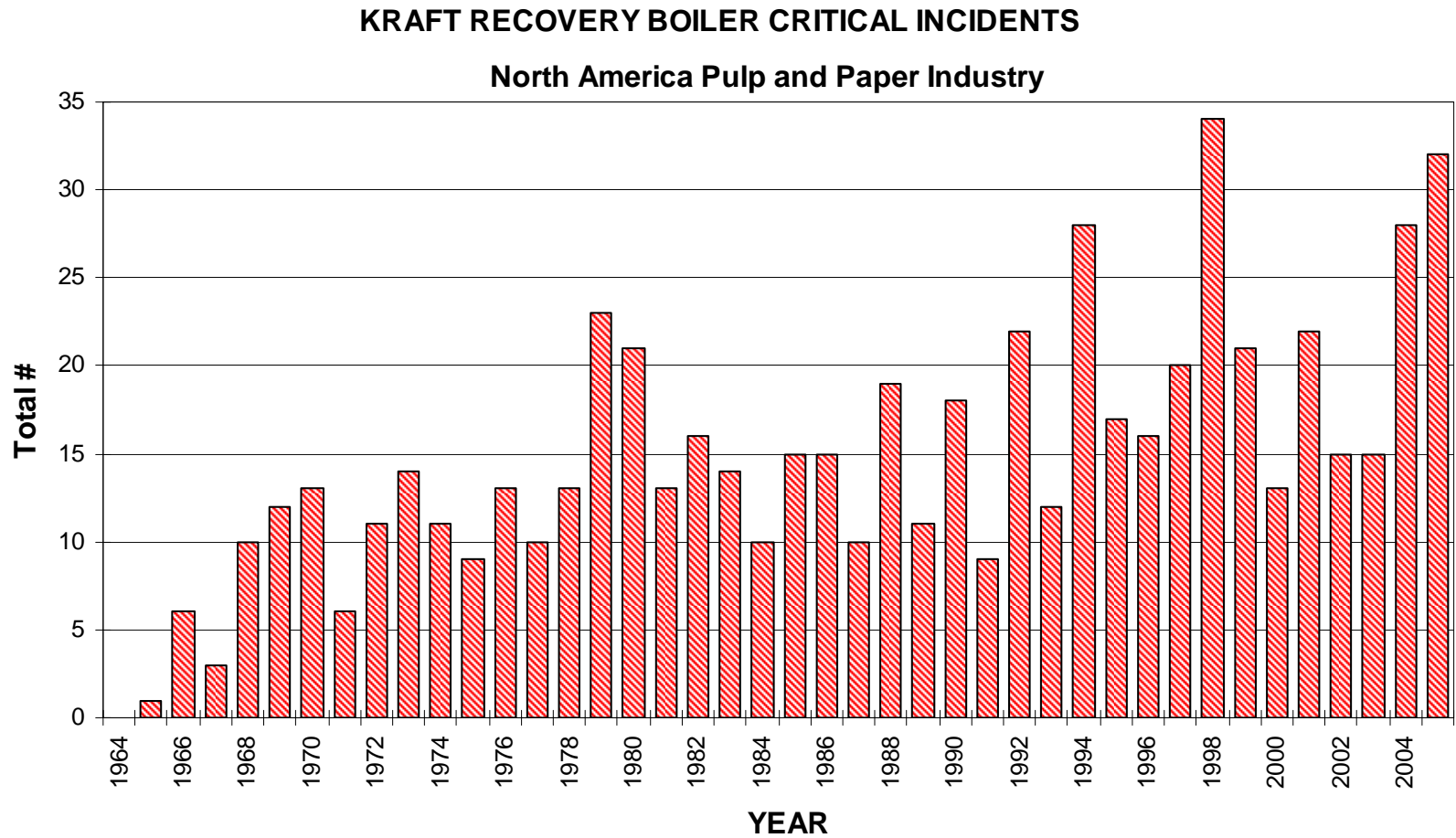


Figure 2

(Critical Exposure Classification Began in 1965, Changed to Critical Incident in 1999)

5. SUBCOMMITTEE REPORTS – (Cont.)  
 5.1 ESP SUBCOMMITTEE REPORT – (Cont.)

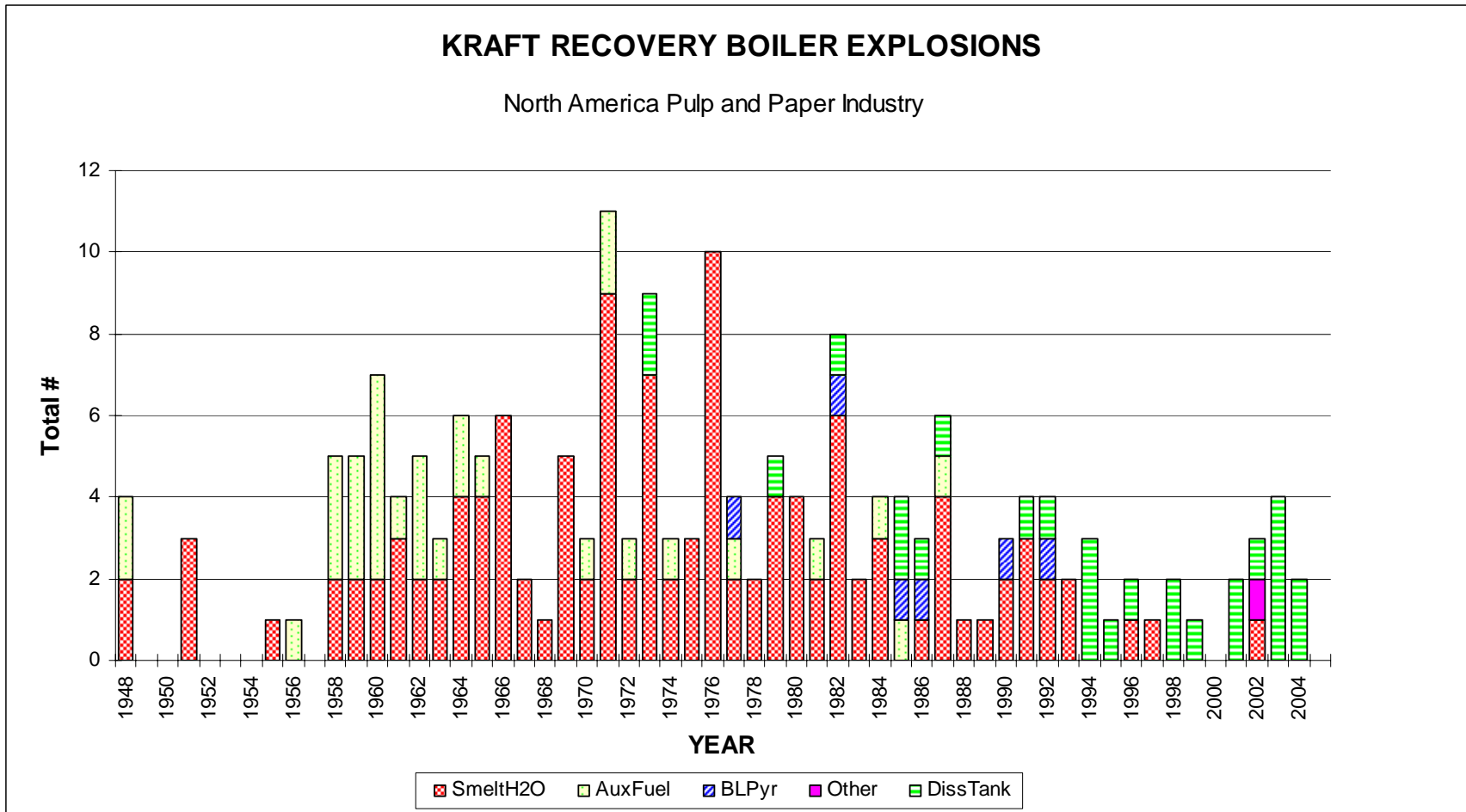


Figure 3

5. SUBCOMMITTEE REPORTS – (Cont.)  
5.1 ESP SUBCOMMITTEE REPORT – (Cont.)

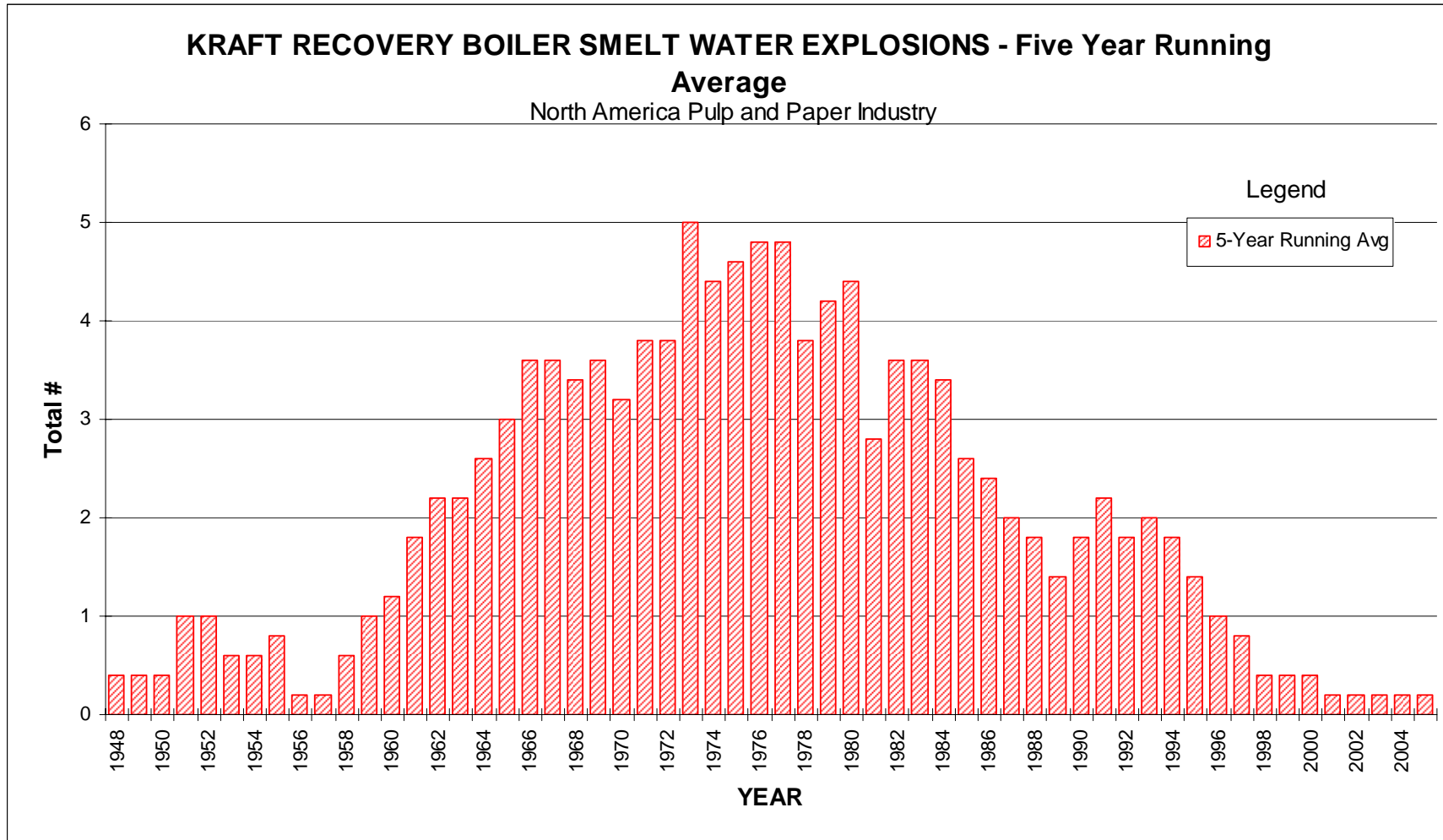
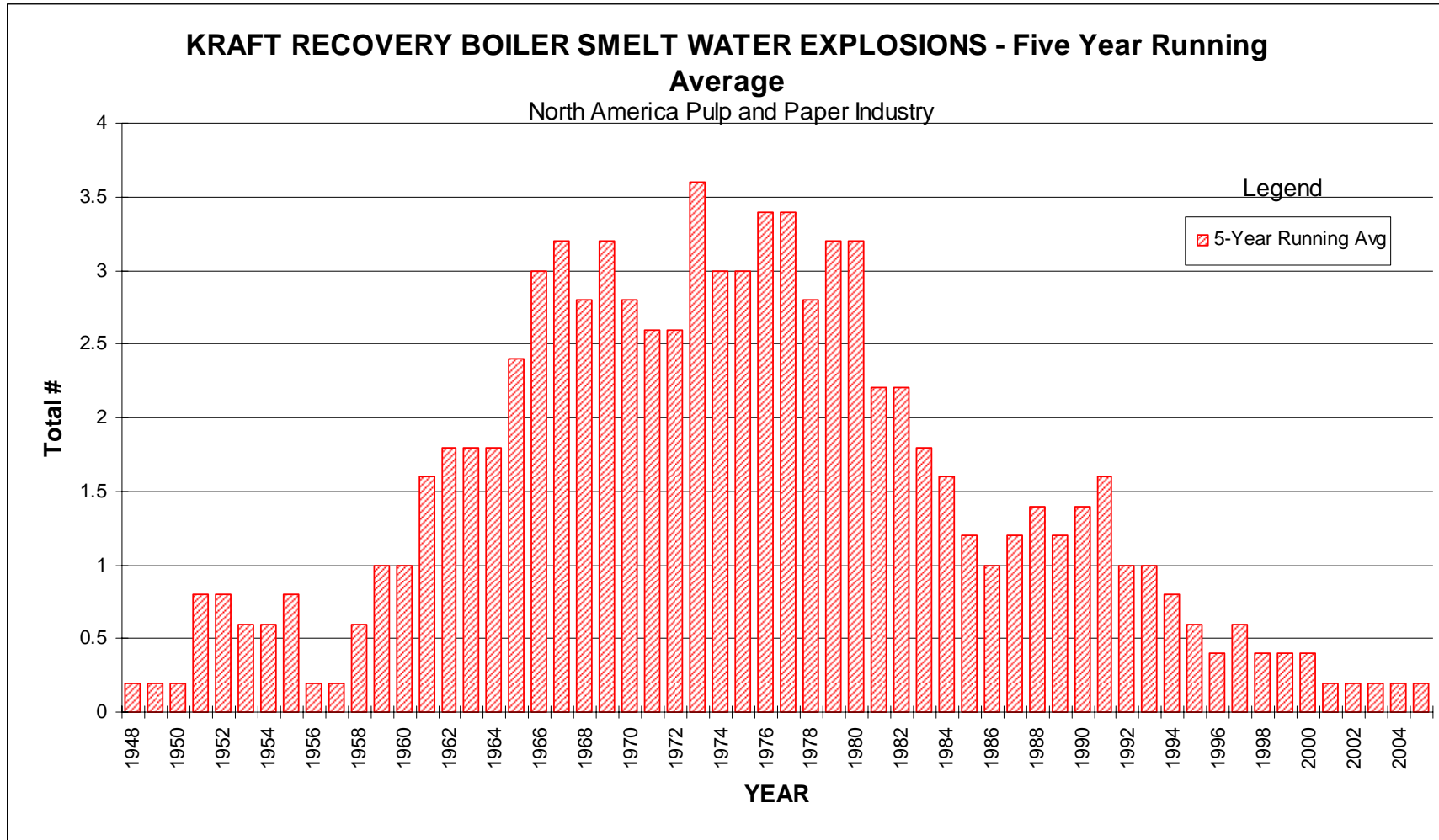


Figure 4

5. SUBCOMMITTEE REPORTS – (Cont.)  
5.1 ESP SUBCOMMITTEE REPORT – (Cont.)



**Figure 5**  
**Explosion Data Using the Current Definition of Incidents with Discernable Damage**



5. SUBCOMMITTEE REPORTS – (Cont.)  
5.1 ESP SUBCOMMITTEE REPORT – (Cont.)

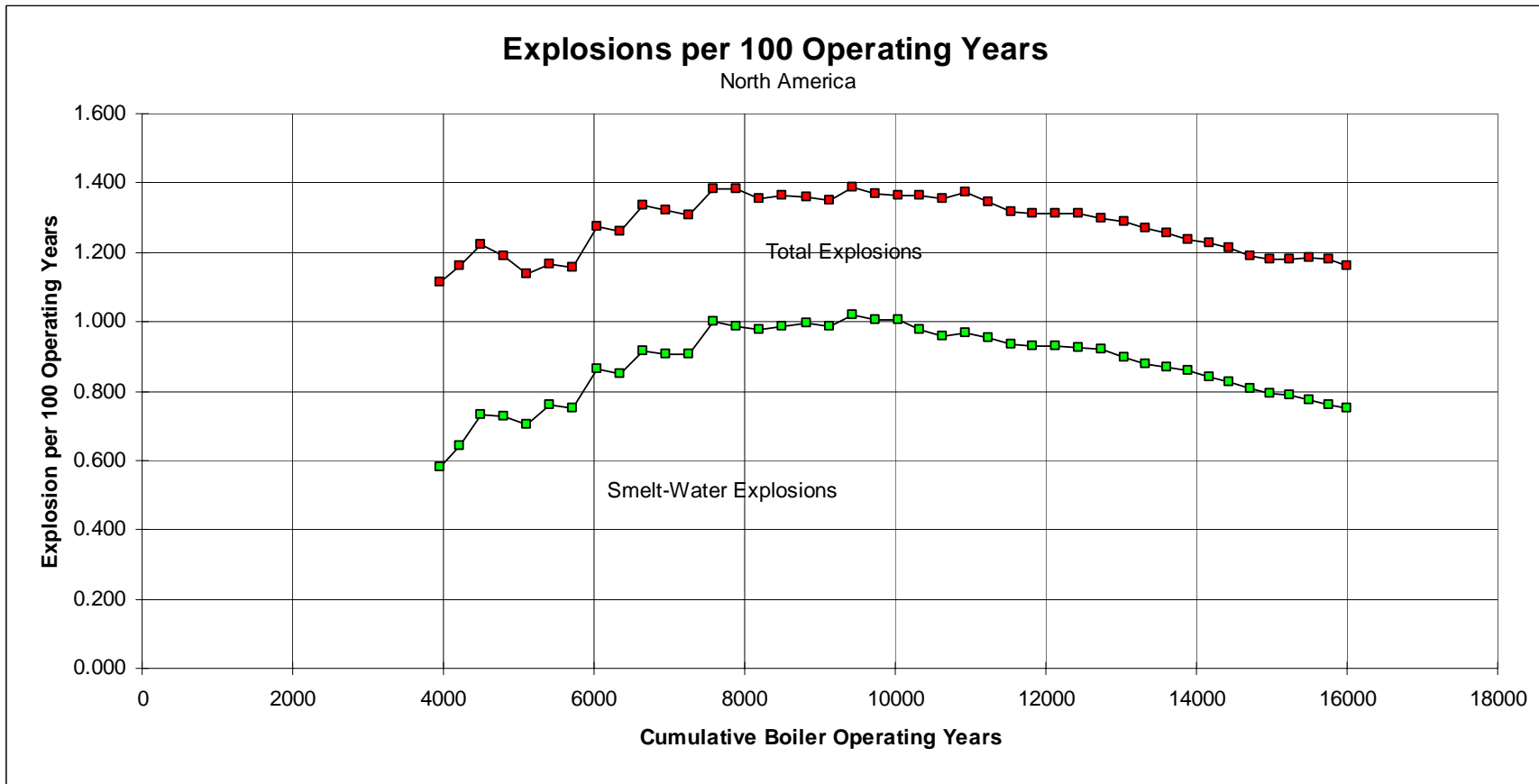


Figure 6

5. SUBCOMMITTEE REPORTS – (Cont.)  
5.1 ESP SUBCOMMITTEE REPORT – (Cont.)

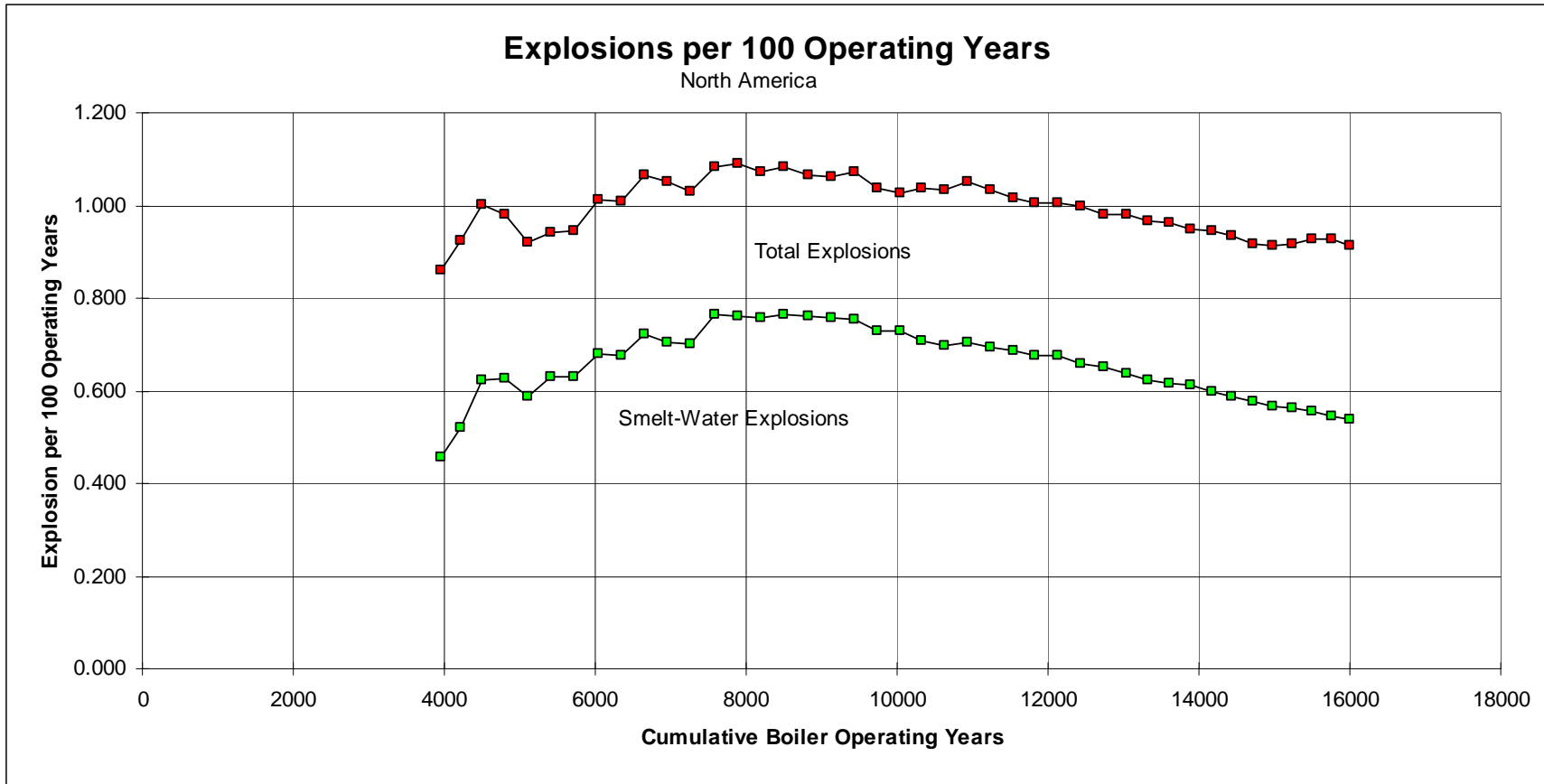


Figure 7  
Explosion Rate Using the Current Definition of Incidents with Discernable Damage

5. **SUBCOMMITTEE REPORTS – (Cont.)**

5.1 **ESP SUBCOMMITTEE REPORT – (Cont.)**

Are there any questions or comments?

**CRAIG ADERMAN – SAPPI:** I'd like to compliment your Subcommittee on presentation of data and the graphs. It has been very helpful to see. I have a suggestion for you to consider:

I wonder sometimes if higher incidents and lower explosions might be due to better reporting or might be better reaction to the situation. One statistic that I would like to see is percentage of critical incidents that are ESP'd. That might be some of the reason the explosions have gone down because people have taken quicker and more dramatic action to alleviate that possibility. Another possibility, I'm not sure this one would be as valuable, would be to track the time from leak indication to initiation of the ESP. These would be interesting statistics to see but I really do appreciate the ones you have put together.

**JOHN ANDREWS:** Actually I was working at this meeting to put some information together on the time to initiate an ESP. Looking at the reports that came in, the median time to ESP for those that were ESP'd was 20 minutes. So half of the units were ESP'd before 20 minutes and half of the incidents took more than 20 minutes to initiate the ESP. In some cases, it is difficult say when the initial indication of the leak actually occurred, but the longest time from what could have been the initial leak indication to the ESP was two days, ten hours and 50 minutes. It is easy to be a "Monday Morning Quarterback" but we do appreciate the challenges that the operators and must reiterate that that is very important to make sure that the operators are well trained in identifying the leaks and certainly empowered that they can make those decisions and initiate the ESP. Thanks, Craig.

(A review of past data shows the percentage of critical incidents that were ESP'd by year: 2005 - 63%; 2004 - 68%; 2003 – 60%; 2002 – 63%)

Any others?

5.2 **INSTRUMENTATION SUBCOMMITTEE REPORT – Dave Avery**

The Instrumentation Subcommittee met in two sessions Monday. The morning had thirteen members, five guests in attendance. A brief review of the last meeting's minutes brought members up to-date and was followed by the presentation of our current meeting's agenda. We began with a presentation from Chris Warnett Vice-President After Sales Rotork Controls Inc. The discussion included a history of Rotork's installed Rapid drain valves on Recovery Boilers. The "Non-Intelligent" 'A' series ran from 1970 to 1991. The "Intelligent" Mark I & Mark II series were introduced and installed from 1991 to present.

5. **SUBCOMMITTEE REPORTS – (Cont.)**

5.2 **INSTRUMENTATION SUBCOMMITTEE REPORT – (Cont.)**

Chris reviewed problems discovered by several mills after having performed their periodic pre-shut/post-shut functional test. The issues involve the intelligent actuators “Mark I & Mark II” series, the “A” series Non-Intelligent units are not involved. The first problem is with the unit’s back-up battery that provides local indication, remote indication update and position processor update. If the unit’s battery fails during a mill power outage (no 480V service at the valve) and the valve is manual moved during this period the valve will stay in its last manual position upon resumption of service power. It should be noted that Rotork actuators are designed to incorporate multiple features that are used differently depending upon the application. Rapid drain valve applications require specific programming parameters to meet BLRBAC requirements. Rotork working with the mills for rapid drain valve installations and has developed recommended settings for this application and Feedwater Stop valves.

Chris reviewed these proposed settings with the subcommittee and after a robust group discussion we were able to come to consensus on alignment of the requirements and settings. The discussion led to a group discovery of another base software related issue. The actuator has a motor stall protection program that will be evaluated by Rotork for change when used in an ESP application. Rotork has agreed to follow-up on this problem and for a few edits for their new “Guide and Recommendations for setting up Rotork Valve Actuators on Rapid Drain Valves and Feedwater Stop valves on Black Liquor Recovery Boilers” manual. I would like to acknowledge and recognize Rotork for the positive, rapid response and full cooperation in developing solutions to these application issues. Their continuing commitment is appreciated by all.

We concluded the morning session with an examination of the proposed changes for the Instrument Checklist – Section D. Fire Protection system concerning boilers with DCE’s. These accepted changes will align the checklist with the DCE document.

The afternoon session had thirteen members and fourteen guests attending. Preliminary checklist for SOG, DNCG and SOG systems were reviewed. These preliminary checklists will be forwarded to the Waste Streams subcommittee for examination and edit. The remainder of the meeting turned into a brain storming exercise to identify current areas’ of concern that the group should pursue.

Items discussed were:

- ◆ Functional test
- ◆ Smart Field devices
- ◆ Field Bus Utilization
- ◆ System Security, integrating multiple platforms and equipment in a common system.
- ◆ Networking of critical control systems and what is appropriate for IT involvement.
- ◆ Alarms, they are a part of our control systems, how do we manage and PM them?
- ◆ Dedicated standalone – what does this mean?

5. **SUBCOMMITTEE REPORTS – (Cont.)**

5.2 **INSTRUMENTATION SUBCOMMITTEE REPORT – (Cont.)**

It should be noted that the ESP and Instrumentation sub committees are forming a joint task force to develop a definition for “Dedicated Standalone” and common requirements for Rapid Drain Valves.

A check on our progress for ‘Functional test’ – The committee feels that we have clearly defined ‘Functional Testing’ and that our scope of work is complete. Our focus now is to promote ‘Functional Testing’ as a routine part of our business. We need owner/operators to recognize that functional testing demonstrates that our controls/interlocks work according to design and are functional.

Next spring our meeting will be open. The agenda will include the use of smart devices and system security. I would like to thank the members and all our guests for their participation and support of our activities that enables us to work on the things that are important for the Safe Operation of our Recovery Boilers. Finally, I would like to extend to anyone interested in our subcommittee activities an open invitation to check us out, we are an inclusive group not an exclusive one.

**MIKE POLAGYE:** I would just like to add to David’s report that the Rotork document, as was mentioned at the Operating Problems Session yesterday, will be posted on the BLRBAC Web site. Its permanent home will be in the area with the Recommended Practices, but as a new item, reference to it will initially be located on the BLRBAC home page as well.

5.3 **MATERIAL & WELDING SUBCOMMITTEE REPORT – David Fuhrmann reporting for Dan Phillips**

The Materials and Welding Subcommittee met in closed session on Monday morning with 8 of 14 members present and one guest. The subcommittee reviewed the status of the current document, the main elements of which include Forewords for the general document, the Welding Section, the Materials Section, Technical Bulletins, Procedures, and Survey Results.

Review of the flow diagram for a successful weld repair (figure 1 in the draft document) revealed that some steps were missing and that the diagram needed revision.

It is intended that the level of detail become more specific moving from the Foreword to Technical Bulletins, to the Procedures. The Foreword will provide general good practices. The Technical Bulletins will cover a specific issues, describing symptoms, typical locations, inspection techniques, general repair considerations, and references. The Procedures will provide detailed guidelines for pre-repair inspection, repair evaluation, method of repair, repair traveler as appropriate, final repair acceptance criteria, and references.

5. **SUBCOMMITTEE REPORTS – (Cont.)**

5.3 **MATERIAL & WELDING SUBCOMMITTEE REPORT – (Cont.)**

The subcommittee developed and approved a format for procedure development.

The open afternoon session included 8 of 14 subcommittee members and 8 guests. Two presentations were made:

1. David K. Fuhrmann of International Paper presented Black Liquor Piping and Corrosion of Stainless Steel and Duplex Piping. Two mill failures were highlighted. The failures were the result of high temperature alkaline corrosion in 316 stainless steel piping carrying liquor with more than 70 % solids under pressure. 304L and especially duplex steels offer improved resistance to high temperature alkaline corrosion.
2. Deborah Britt of International Paper presented digital Weld Imaging. Digital Weld Imaging was used to detect waterside cracks in boiler tubing and weld defects during tube replacement. The Selenium 70 source allowed restricted access boundaries to be reduced and allowed work to continue in other boiler areas. Image development was rapid and transferred to a digital media, allowing the image receiver to be reused. When using software and high-resolution monitors, defect detection was satisfactory.

After the presentations the minutes of the closed session was discussed. The new format for the procedure section of the manual was outlined which raised a question regarding the repair traveler. It was asked if the traveler in the document is intended to supercede the repair traveler of the R stamp holder. It was made clear that the repair traveler in the materials and welding document is there as a guide and not intended to supercede the R stamp holder's traveler.

Participants then divided into 4 task teams to edit welding procedure drafts into the approved format.

The Materials and Welding Subcommittee has previously approved Forwards for the General Document, Welding Section, and the Materials Section. The subcommittee has also previously approved Technical Bulletins for:

1. Stress Assisted Corrosion
2. Weld Repair of Cracks in Water Tubes
3. Repair of Pressure Boundary Materials
4. Repair of Corrosion resistant Weld Overlay Applications on Tubes
5. Repair of Composite Materials on Tubes

5. **SUBCOMMITTEE REPORTS – (Cont.)**

5.3 **MATERIAL & WELDING SUBCOMMITTEE REPORT – (Cont.)**

Procedures under development for subcommittee review at the Spring 2006 meeting include:

1. Replacing Weld in Style Hand hole Caps – Dave Fuhrmann
2. Weld Repair of Small Holes in Superheater Tubes – Billy Walker
3. Weld Repair of small Cracks in Boiler water Tubes – Dennis Henthorne and Steve Osborne
4. Weld Repair of Small Holes in Boiler water Tubes – Jesse Worsham
5. Overlay Procedure for Field Repairs of Boiler Tubes – Fabian Henriques

Plans for the next meeting include:

1. Finalize procedure drafts and get subcommittee approval
2. Develop Technical Bulletins for Materials
3. Submit a base document to the Executive Committee for approval and general comment
  - a. Additional Technical Bulletins and Procedures will be developed, approved and inserted as completed.
4. Presentations of experiences that may be of interest to this group.

5.4 **PERSONNEL SAFETY SUBCOMMITTEE REPORT – Robert Zawistowski**

The Personnel Safety Sub-committee met in an "open" session on Monday, October 3, 2004. There were 12 members and 14 guests in attendance during the meeting.

Representation at our meeting by regular members and guests included original equipment manufacturers ALSTOM Power, Babcock & Wilcox, Diamond Power and Kvaerner Power. Representation from insurance and insurance service companies included AXA Corporate Solutions, Global Risk Consultants and Sampo Japan Risk Management. Operating company representation included Georgia Pacific, International Paper, Lincoln Paper & Tissue, MeadWestvaco, Packaging Corporation of America, Smurfit-Stone Container, and Weyerhaeuser. Consultant representation included Power Specialists Associates, Inc. and RSI.

There were four changes in membership to our subcommittee since the last meeting. Bob Sullivan recently retired from the National Board and submitted a written resignation. Dave Fuhrmann is now on the Materials Subcommittee. New to the Personnel Safety Subcommittee are Phil English of Smurfit Stone and Lorry Hammer of MeadWestvaco.

It was brought to our attention that excessive weld "push through" contributed to two failures reported during the April 2005 meeting. Though backing rings were not involved in these incidents, a BLRBAC member suggested that we review the language in our guidelines to determine if it needed to be changed and/or strengthened. After discussing the incidents and reviewing paragraph 3.1.3, the subcommittee did not feel it was necessary to alter the current wording. The current wording of paragraph 3.1.3 is and will remain: "Backing rings should not be used in butt welds exposed to the fireside."

5. **SUBCOMMITTEE REPORTS – (Cont.)**

5.4 **PERSONNEL SAFETY SUBCOMMITTEE REPORT – (Cont.)**

Over a year ago an auxiliary fuel explosion occurred in Mobile, Alabama in a recovery boiler that was converted to a power boiler. During the October 2004 meeting information on this incident was presented to our subcommittee by Alstom. At that time a complete information and root cause was not available. Since last year there has been a change of ownership with this facility. No additional information has become available on the root cause of this incident though some efforts will be made to see if additional information has been released.

A question was raised regarding personnel safety around smelt spouts. We discussed the use of "chain curtains," size and composition of rods, arrangement of spout access doors, hood wash arrangements, shatter jet position, shatter jet wash arrangements, and shatter jet protection.

A question was asked regarding frequency of testing ESP systems and temporary isolation of the system. It appeared that the plant might be testing the system at a greater frequency than necessary. We suggested following the current ESP testing guidelines for exercising the valves monthly and testing the entire system when the boiler is shutting down for an outage.

We are in the process of adding language to the Personnel Safety guidelines for water washing recovery boilers following a normal shutdown. This meeting we reviewed information that was compiled from several mill specific procedures. This information is being used to help develop generic guidelines. Over the winter we plan to draft and review these guidelines. Discussing and drafting will continue during the spring 2006 BLRBAC meeting. During the Executive Committee meeting it was recommended that we review the Safe Firing of Black Liquor guidelines to ensure there are no conflicts with that document.

Based on input from people attending the meeting there seems to be an increased number of injuries among operating personnel. A number of these injuries appeared to be personal protection equipment (PPE) related. Currently the Personnel Safety document does not contain much information on this topic. There was agreement in the subcommittee that there is a need to develop guidelines for PPE. This will be started between now and the next meeting. As part of the discussion in this past meeting, it was brought to our attention that one mill found some PPE that was in use in their mill was substandard. For example, a full clear face shield was found to melt quickly when exposed to hot liquor. In tests conducted by this mill, different products were found to perform quite differently. The test information done by this mill will be made available to this subcommittee for review.

A discussion was held regarding harness usage in boilers that are scaffolded. Subsequent discussion ranged from wearing harnesses to not wearing them, depending on mill policy and type of scaffold construction. Additional information was provided that indicates it is probably just a matter of time before safety standards such as this will become more stringent.



5. **SUBCOMMITTEE REPORTS – (Cont.)**

5.4 **PERSONNEL SAFETY SUBCOMMITTEE REPORT – (Cont.)**

The topic of operator response to initiating an ESP was discussed. There were several people who provided input that in some mill operators hesitate longer than they should when making the decision to ESP the boiler. The Personnel Safety guidelines indicate that scenario refresher training should be done annually for emergency procedures. Some folks indicated that while that may be the guideline, something different is happening at some mills. We encourage proper training for operators to recognize and act when signs of a leak are suspected. In addition, each operator should complete refresher training for all emergency procedures annually.

In closing, we welcome the two new members of the subcommittee who come from the operating companies. As always, we welcome new committee members who can participate in any capacity.

5.5 **PRESS RELEASE & PUBLICITY REPORT – Craig Cooke**

Rarely do I agree to reveal the activities of my subcommittee. You are the fortunate group to be present as I remove the veil of mystery.

First I would like to answer some of the questions I often get asked. Yes, I am the only member of my subcommittee. How did I get that position? I'm the only one that volunteered. Why did I volunteer? Well, I won't answer that one. Getting down to the basics, what do I do? Basically I generate a brief news release and publicize future meeting dates and information for approximately ten magazines and technical newsletters. Another question that I am asked is do you ever do anything extra or different? Glad you asked! Along with the meeting dates that hopefully get entered into the various calendars in the trade magazines, I would like to get an article published regarding BLRBAC. I'd like it published at least in several of the trade journals. Not a technical article, but more of a public relations article and it will highlight who we are, our purpose, our history, our successes, and why we need to continue to be vigilant to maintain the success we have obtained. Hopefully this will encourage some increased participation. Hopefully, like I say, it will be published in one, two or three trade journals. I have already sent the rough draft to the Executive Committee for their comments. Any questions?

**CHAIRMAN:** Thanks, Craig. It was very enlightening.

5.6 **SAFE FIRING OF AUXILIARY FUEL SUBCOMMITTEE REPORT – Dave Streit**

There is no report since this Subcommittee did not meet in the fall of 2005. They are scheduled to meet in the spring of 2006.

5. **SUBCOMMITTEE REPORTS – (Cont.)**

5.7 **SAFE FIRING OF BLACK LIQUOR SUBCOMMITTEE REPORT – Mark Sargent**

The open morning meeting was held with eight of nine members present and 12 guests. Eight of nine members present and an additional 30 guests attended the afternoon open meeting. The following items were discussed and acted on during the sessions:

The spring 2005 minutes were reviewed and approved.

The Revised Safe Firing of Black Liquor document was posted on the BLRBAC Website since the April 2005 meeting.

Three grammatical changes of the approved changes to the SFBL document were submitted to the Executive Committee as well as a revised Figure 6 showing just a non-pressurized storage tank for liquor storage. There is a new Figure, 6A, showing a pressurized storage tank and a safety shutoff valve on the recirc line to the tank from the boiler ring header. These two figures were submitted to the executive committee for vote and approval. *{BLRBAC Secretary's Note: These changes are considered "editorial" by the Executive Committee as they create no change to the technical recommendations in the document. They have been incorporated and I revised document posted on the website.}*

We fielded a question from a member company between meetings. The question was regarding the need to retain the black liquor temperature and pressure permissives for header purge. The company did not feel that the temperature and pressure permissives added any value for them and requested that we drop them from our logic sequence. We discussed as a Subcommittee and agreed that there is value in preparing the black liquor for firing by raising the temperature and pressure to firing conditions as a permissive for purging the header. Without these permissives you could conceivably spray liquor into a furnace that will not combust properly. Len Erickson will contact the member company to determine if there are logic problems or inherent piping design issues that prevent them from properly preparing the black liquor for combustion.

The Subcommittee fielded a question regarding purging of black liquor sub-headers on a very large recovery boiler. Apparently a European design has individual black liquor sub-headers on each wall that are not purged during the black liquor header purge sequence. One of the OEM's contacted stated that they have a European design where the individual walls are controlled by a FCV or PCV and these sub-headers are not purged. They do state that they have a US design where the piping is configured to provide equal flow to each wall and the sub-headers are eliminated. Scott Moyer will modify the SFBL language to address all types of black liquor header designs to assure that all portions of the piping system are purged as close to the liquor gun piping as practical. Once Scott has modified the language he will circulate to the Subcommittee for comment.

5. **SUBCOMMITTEE REPORTS – (Cont.)**

5.7 **SAFE FIRING OF BLACK LIQUOR SUBCOMMITTEE REPORT – (Cont.)**

The Subcommittee will contact sootblower suppliers to see what information we can gain regarding purging of wall box piping after a water wash. This issue was raised at the Operating Problems Session.

One member company raised some logic questions around starting and tripping black liquor pumps on a DCE design during the Operating Problems Session. We will attempt to gather more information on this topic to see if there are any inherent flaws in our permissive starting and protective tripping logic sequences.

Mark Sargent will be circulating the Revised SFBL document to the Subcommittee for another review for any grammar changes. We hope to have all comments back by year-end, consolidated and then distributed again. We will work through all of the grammar changes at the morning open meeting April 2006.

A number of questions from guests attending the meeting were fielded & discussed.

Contact:

- Mark Sargent at 513-248-6086, e-mail [mark.sergeant@ipaper.com](mailto:mark.sergeant@ipaper.com), or fax 513-248-6679 with questions or comments.

5.8 **FIRE PROTECTION IN DIRECT CONTACT EVAPORATORS SUBCOMMITTEE REPORT – Chris Jackson**

The Fire Protection for Direct Contact Evaporators Subcommittee met Monday morning in an Open meeting with seven subcommittee members and no guests present. There was no afternoon meeting.

There was no meeting in April meeting. Minutes from October 2005 were reviewed and accepted.

Old Business was reviewed and aside from requests to the other subcommittees for help to coordinate the recommendations in our document, there was no old business. These requests are being processed through the Executive Committee.

**Incident 05-01** – Under New Business we reviewed the single incident report that came in since our last meeting. One of our subcommittee members, who is also an employee at the subject mill, made a presentation detailing the circumstances of the fire that destroyed a cyclone, a precipitator and an ID Fan on one of the two boilers at this mill. The incident was subsequently presented to the larger membership on Tuesday at the end of the ESP subcommittee open meeting.

5. **SUBCOMMITTEE REPORTS – (Cont.)**

5.8 **FIRE PROTECTION IN DIRECT CONTACT EVAPORATORS SUBCOMMITTEE REPORT – (Cont.)**

The subcommittee decided that no revisions were needed to the Fire Protection of DCE's Recommended Practice based on the incident. Deficiencies in Lock-Out-Tag-Out, Management of Change and Jumper Management procedures were all factors in the loss, but these are considered to be outside the scope of our document.

**Vertical Duct Protection** – Questions about appropriate water sprinkler protection for vertical runs of duct were brought to the subcommittee. The consensus of the subcommittee was that the document adequately addresses this subject as it stands. The document was not meant to promote specific designs but to guide experienced engineers in determining the appropriate design.

The discussion raised an important point: any time a user or builder is being told that the document requires something that to them seems onerous or unreasonable; it is the right and responsibility of that person to come back to the subcommittee with a request for assistance and interpretation. This subcommittee exists to support the document and we will make ourselves available for discussion about your situation, especially when you feel the document does not properly address your installation.

**Proposed Change** – One subcommittee member has proposed that we include the recommendation that the capability for density measurement of the recirculation medium at the DCE be a consideration in the design or refurbishment of any direct contact evaporator where there is recirculation. The consensus of the subcommittee was that this would be a valuable addition to the document and the proposed wording was submitted to the Executive Committee for review. *{BLRBAC Secretary's Note: This change has been posted on the BLRBAC website for membership review and comment.}*

**Next Meeting** – It is the subcommittee's intention to hold a Spring meeting only if an incident report is received or if a request for assistance comes in that cannot be handled satisfactorily otherwise. There will be a meeting in the fall, regardless.

The subcommittee would like to point out that the incident report was revised last year to make it easy to complete. We want to encourage users of DCEs to send in a report under any conditions when the fire protection was activated, when the fire protection system should have been activated but was not, or if an event holds learning for the subcommittee regardless if there was a fire or not. We have reports of many "successful" ESP's. Successful fire protection is just as valuable to hear about.

Any questions? Thank you.

5. **SUBCOMMITTEE REPORTS – (Cont.)**

5.9 **WASTE STREAMS SUBCOMMITTEE REPORT – John Rickard**

The Waste Streams Subcommittee met in closed session at 8:00 AM on Monday with 12 members present and in an open session in the afternoon with 11 members and 10 guests present. One new member, Arie Verloop, joined the subcommittee replacing Ned Dye.

We reviewed questions received since the last meeting. The questions addressed the following topics:

- Benefit of proving DNCG pressure prior to injecting the gas.
- Necessity to prove DNCG isolation before the ID fan can be started.
- Need for double block and vent (or bleed) valves on DNCG lines and steam to CNCG lines.
- Piping service classification M for CNCG.
- Need for soap systems to have both double block valves and pump shut down for isolation.
- Use of a viscosity probe rather than a density measurement to monitor the presence of water in soap.
- Addition of methanol to the suction side of black liquor pumps.

Most of the questions were the result of applying the existing guidelines at specific locations. These and earlier questions have led the committee to recognize the need for revisions. John Rickard will draft these revisions and send them to the subcommittee for review.

Chapter 6, Blending Liquid Waste Streams With Black Liquor, has been improved by addressing concerns from the Executive Committee. The subcommittee reviewed the latest changes and chapter 6 will be resubmitted to the Executive Committee.

Another part of the existing guidelines that will be revised and improved concerns chip bin vents. The hazard of low softwood chip level causing vent gas in the explosive range is well known. However, the subcommittee is aware there has been a DNCG system explosion that was attributed to chip bin vent gas from a hardwood digester.

We reviewed proposed revisions to the chip bin section prepared by Hank Beder and Paul Seefeld. There was much discussion concerning parameters to be used as permissives for admitting the chip bin vent gas to the recovery boiler. There was concern about crossing into a zone of “meddling” in the digester’s operation. Wendy Coyle, Arnie Iwanick and Hank Beder will investigate the choices further and make recommendations at the next meeting.

We have a draft of Chapter 7, Liquid Waste Streams in a Dedicated Burner, which was prepared by Bentley Sherlock. For some liquid waste streams, use of a dedicated burner will provide a safer method of incineration in a recovery boiler than by blending the wastes with black liquor. A dedicated burner can also provide a means for turpentine combustion. The subcommittee will review the document and submit comments to John Rickard or Bentley.

5. **SUBCOMMITTEE REPORTS – (Cont.)**

5.9 **WASTE STREAM SUBCOMMITTEE REPORT – (Cont.)**

The subcommittee discussed incineration of the dissolving tank vent gas fed directly into recovery boilers. This is the state of the art for new installations and a number of such installations are in service. Ollie Kujanpaa has provided us with an English translation of the Finnish Recovery Boiler Association's Recommended Procedure for Incineration of Non-Condensable Gases, which includes the dissolving tank vent. Rob Orender and John Lewis will begin work on this subject as Chapter 8.

6. **AMERICAN FOREST & PAPER ASOCIATION REPORT – Tom Grant**

The AF&PA Recovery Boiler Program is continuing in its efforts to produce greater awareness of safe practices and improvement in the operation, maintenance, safety and efficiency of recovery boilers.

**Membership**

Currently, we have 33 companies in the Program including six non-AF&PA member companies. The current members' production of sulfate pulp represents 99% of the total produced in the U.S. We have a couple of other companies operating recovery boilers that are not in the Program. We continue to encourage them to join with the current members in the cooperative efforts for the safe operation and research to improve the reliability of the recovery boilers. All companies operating recovery boilers gain directly from the benefits of the Program.

**Operational Safety Seminars**

AF&PA sponsored three Operational Safety Seminars this year. The first was held in Portland OR followed by the other two in Atlanta. Since we started the seminars in 1985, we have had 2,432 superintendents, supervisors, operators and maintenance personnel attend. In 2002, attendance was down to 78, but after two explosions later that year, the attendance increased to 148 from 19 companies and 34 mills; in 2003 attendance was 143 from 18 companies and 38 mills; and this year attendance was down again to 111 from 17 companies and 30 mills. We strive to coordinate dates to avoid planned outages, but we cannot meet everyone's schedule. We are surveying companies and mills to respond to a request for changing the format to a one-day seminar rather than the two-half day format, to avoid extra travel. Also, we are surveying to see if mills would want a two-day session - one day for the seminar and a second day to review the AF&PA and BLRBAC guidelines and training.

**Explosion Monitor**

Mr. Jack Clement continues in his role as the AF&PA explosion monitor. He is also working with the BLRBAC ESP Subcommittee on collecting, reporting and tracking recovery boiler incidents.

6. **AMERICAN FOREST & PAPER ASSOCIATION REPORT – (Cont.)**

**Training Program**

The Committee worked with Power Specialists Associates (PSA) in converting the AF&PA Recovery Boiler Training Program to use for computer-based training (CBT). It is now in place and available through PSA. Information may be found on the AF&PA and PSA websites. Ron Bernard of PSA has information available here and may be reached to arrange an electronic demonstration at the mills. This arrangement has worked very smoothly at the mills that have already done this.

**Non-Destructive Technologies for Detecting Waterside Deposits**

Phase I of the Non-Destructive Technologies for Detecting Water-Side Deposits study sponsored by the AF&PA R & D Subcommittee was completed earlier this year. The Subcommittee is working with the Advisory Group and BWXT to start Phase II of the study which will include looking at four technologies, including laser UT and a heat flux method. We expect Phase II of the project will be underway shortly and be completed in April 2006.

**Joint Seminar with AF&PA and BLRBAC**

As you know, AF&PA and BLRBAC sponsored a joint seminar for water treatment after the BLRBAC meeting in April. Mr. Dean Clay of IP who headed up the Task Group for the seminar and the presenters should be congratulated for the great job that they did to make this seminar most informative and successful. Some copies of the complete set of the presentations in binders are available through AF&PA or BLRBAC at a small cost.

**Study for Analysis of Economizer Tube Failures**

Phase I of the Economizer Tube Failures study was completed earlier this year. Phase I involved the acquisition, tabulation and preliminary interpretation of the available information on economizer tube failures. Phase II of the study has started and will be completed most likely in early January and will be presented at the AF&PA Annual Conference in February. This phase of the study will involve an in-depth analysis of the data with a view toward developing steps for preventing the future occurrence of the economizer tube failures. Guidelines will be written to highlight potential issues and questions that should be considered in preparing a product specification, proposal review, purchasing, monitoring of contract execution in manufacturing and erection, startup and operation. A similar document identifying operating practices believed to be detrimental to economizer integrity, supported by case evidence to the extent possible, will also be prepared.

**Study of Superheater Failures**

AF&PA is reviewing a proposal to study superheater failures, similar to the Economizer Tube Failure study. There will be three stages to the study. Phase I will cover the investigation of AF&PA, BLRBAC and manufacturers' files, publications and meetings with the major superheater suppliers and engineering organizations. Key issues will be identified and defined. Phase II will be a selective approach to operating installations for the purpose of obtaining specific history of failures and maintenance. Phase III will be the analysis of the data, with conclusions and recommendations that can be derived from the data. Guidelines and suggestions for the design of recovery boiler superheaters to operate at final steam temperatures exceeding those in current operation in the US. It is expected that the study will take about a year to complete.

6. **AMERICAN FOREST & PAPER ASSOCIATION REPORT – (Cont.)**

### **Other Research Projects Under Review**

The Committee is also considering a study for causes of smelt spout cracking and failures on chemical recovery boilers. The objective of this study will be to review the frequency of smelt spout cracking and corrosion; the correlation of spout failures with water-side deposits and other factors; prioritize and discuss research needs to achieve the goals. We are trying to coordinate with some DOE funded projects related to this. AF&PA will also be looking at different ways of reducing dissolving tank explosions.

Several other projects are also being considered.

### **Annual Meetings and Conference**

AF&PA's annual Recovery Boiler meetings and Conference is planned for February 7th and 8th in Atlanta. It is opened to all operating companies, insurers and manufacturers. The presentations will include reports on the projects currently sponsored by the AF&PA Recovery Boiler Program and subcommittee reports on their accomplishments. The object of the Conference is to keep not only the members advised, but also the remainder of the recovery boiler community, as well. We hope that many of you will plan to attend.

Thank you for your attention.

#### **7. TAPPI STEAM & POWER/ENERGY MANAGEMENT COMMITTEE - RECOVERY BOILER SUBCOMMITTEE REPORT – Jim Dickinson** *(See Attachment B – Slide Presentation) (Attachment C -- Steam & Power Meeting Notice)*

There hasn't been an update on TAPPI Steam & Power's Recovery Boiler Subcommittee in several meetings. So I wanted to take the opportunity to bring everyone up to speed on things. Maybe then we will try to make this as a routine update going forward.

The TAPPI Steam & Power/Energy Management Committee is a combination of the steam & power and energy management groups. There used to be two separate committees, and maybe four or five years ago they were joined together to combine purposes and to increase participation, etc. Therefore, the formal name today is Steam & Power/Energy Management Committee. The main purpose is to develop and disseminate information. Information in the areas of mill heat and power systems from the steam and power standpoint and effective energy management was brought over from the Energy Management Committee. The officers serve on a rotational assignment. They perform their assigned position and then rotate on up through Chairman, except for myself. I've managed to put myself as Membership Chair for perpetuity. So far this has worked out fine and will stay this way for a while.



**7. TAPPI STEAM & POWER/ENERGY MANAGEMENT COMMITTEE - RECOVERY BOILER SUBCOMMITTEE REPORT – (Cont.)**

We struggle a little bit with members. Right now there is a less mill participation than desired. This is somewhat indicative of the type of folks that come to TAPPI these days. TAPPI itself is struggling with continuing the mill participation and we try to address this at each meeting. So, the current breakdown of the Steam & Power/Energy Management Committee is 18-mill representatives, 16 suppliers, and 48 consultants. The mill category is pretty straight forward, which represents operating company representatives. Suppliers are pretty straightforward as well, which represents a supplier of equipment. The rest are considered consultants. They are not all really all consultants, but include university people, like the University of Toronto and several of the other universities around, ORNL, several of the National Labs, etc. It would probably be a little bit more meaningful if this were broken down into something else, but right now we will leave it as that overall category.

Four subcommittees make up the Steam & Power/Energy Management Committee. By far, Recovery Boilers is the largest one. Then in order of membership: Energy, Power Boilers and Water Treatment. The Power Boilers subcommittee has struggled a little bit in the last several meetings. So at last month's meeting in Philadelphia, in conjunction with TAPPI, we combined the Power Boilers into the Recovery Boiler Subcommittee. That will be voted on at the next meeting, but essentially the Power & Recovery are going to be pulled together because they have a lot of the same interests and the same intents, etc. As of now, I have it separated on my slide presentation. Andy Jones is going to continue to lead that combined subcommittee and a new mission statement for that subcommittee has been generated.

What do these subcommittees do? Well, their primary activity is to develop what we call "TIP's" (technical information procedures or technical information papers) building upon, maybe, technical papers that have been presented to the industry and disseminating them for further interest, building on them, etc. Secondly, the subcommittees have a charter to support the TAPPI conferences, primarily the TAPPI Engineering Conference in the fall, with appropriate technical items, technical coordination, session chairs, topics, etc.

I'm not going to go into the activities of all the subcommittees right now because the main interest here is on recovery boilers. My slide presentation shows a list of current activities that the Recovery Boiler Subcommittee has underway. It is a little shorter list right now, only because several things are being cleaned up and finalized. Later I'll show you a list of some things that we still anticipated to be tackled. There is always a hit list of ideas, so long as we get enough volunteers to work on it. There is a long version and a short version of the Recovery Boiler Performance Calculations Form, which is used to do recovery boiler performance on your operating units. Every so often all of these procedures come up for a mandatory review. There is a five-year review cycle and a ten-year review cycle. Both of these are in the review cycle and Andy Jones has taken on the main lead on both of these procedures, doing several clarifications, additions, qualifications to both the long form and the short form.

**7. TAPPI STEAM & POWER/ENERGY MANAGEMENT COMMITTEE - RECOVERY BOILER SUBCOMMITTEE REPORT – (Cont.)**

The effect of composition in the first melting temperature parallels along with a lot of work that Honghi Tran has done at the University of Toronto. There have been several papers generated on this topic. What the committee is doing is taking what he has done in those guidelines and forming it into a Technical Information Procedure Paper. This probably will take another year before anything is published.

Jack Clement, at yesterday's Operating Problem Session, addressed potassium & chloride measurement and control a little. The slide says the "TIP" is completed, but this is a little premature. There has been a lot of pulling together of information on it, but it has not been completed as yet, and Jack has the assignment to take that and try to get it into a "TIP" format by the end of the year or by the beginning of next year. I guess I'm correct in saying it is in somewhat of the review process, but there is still some pulling together that needs to occur.

My next slide shows a list of several "TIP's" that have been completed over the last few years. There are a variety of things listed and all sorts of different applications. These are all available through the TAPPI Web site. I think they are free or for a nominal charge for TAPPI members and maybe a little bit more for non-TAPPI members. To tell you the truth, I'm not even sure what the charges are. Anyway that is where you can go and find these documents. I guess one qualification is necessary on several of these topics; you'll see some things on the list may sound like they might be already being addressed within BLRBAC. We are very sensitive to the aspect that there are different committees and different subcommittees, etc., looking at some of these important items, like the collection and burning of NCG's from different standpoints. Certainly TAPPI's intent is not to address the same items as, say, John Rickard's BLRBAC Subcommittee on Waste Streams. Rather, we try to address it from a different standpoint; maybe from an operations standpoint, etc.

Some of the items that are being considered for future work come from a little brainstorming session at the end of each of the TAPPI meetings, when we discuss what else can we could generate some information on, what's out there that people are interested in, etc. This is a list of some of the ideas that have come up over the last several meetings. One item I want to call attention to is that the AF&PA has done several studies over the last couple years on recovery boiler floor tube failures and recovery boiler explosion damage. They are currently doing one on economizers that Jack Clement and Tom Grace are involved with. There have been some thoughts in taking those studies and making them into more of a generic technical information procedure that we could put out on the TAPPI Web site for people to use and refer to.

Allow me to address a little of what we started talking about back at the beginning of today's Business Meeting when Len Erickson was speaking of combining meetings. The TAPPI Steam & Power/Energy Management Committee meets twice a year. We meet in the fall in conjunction with the fall TAPPI Technical Conference...we just met in August in Philadelphia. Then there is one meeting in the spring. The spring meeting dates have bounced around for several years.

**7. TAPPI STEAM & POWER/ENERGY MANAGEMENT COMMITTEE - RECOVERY BOILER SUBCOMMITTEE REPORT – (Cont.)**

The spring meeting has historically gotten less-than-adequate participation. So, in an attempt to try to improve attendance & participation in the spring, we would like to combine it with another industry event so that attendees can participate in both events/meetings, minimize or eliminate additional travel, etc. We did this with BLRBAC a year or so ago, and again with the AF&PA meeting this past February. Combining with AF&PA was okay, but it ended up being a rather long week and participation wasn't what we really wanted it to be. We would very much like for the spring meeting to be held after, and in conjunction with, BLRBAC. Next spring, TAPPI's Steam & Power/Energy Management Committee meeting will be after BLRBAC. We have talked to everyone involved with BLRBAC. The methodology will be that it takes place Wednesday afternoon. Late Wednesday morning the Steering Committee will meet, but then the afternoon is available for the rest of the membership, and guests, to come participate with the Steam & Power/Energy Management Committee, participate with the subcommittee activities, etc. We will finish by the end of the day, so people don't have to stay any longer. You can do your return travel in the evening. This helps our participation and I think it is good for BLRBAC as well.

The only requirements to be a full time member of the Committee are to be a full time TAPPI member and to have the interest in working on the various activities of the subcommittees. There is no membership requirement to be able to come to the spring meetings, as we welcome guests and would like anybody interested to come. If anybody would like to become a member of the Steam & Power/Energy Management Committee, and has an interest in our subcommittee activities, I'm the one to contact. Therefore, feel free to contact me. My name is on the TAPPI Website.

Any questions? Thanks.

**VICE-CHAIRMAN:** Thank you, Jim. Bob Sullivan retired from the National Board. He was the Representative who came to BLRBAC over the past few years. George Bynog will give the National Board of Boiler & Pressure Vessel Report.

**8. NATIONAL BOARD OF BOILER & PRESSURE VESSEL INSPECTORS' REPORT –**  
George Bynog

Thank you, Karl. I'm George Bynog and I have replaced Bob Sullivan. This is my first meeting and I'm very happy to be here. I've been impressed with the format and structure that I have seen in place.

I want to make my report very brief and keep it to items of interest to you and that pertains to the National Board Inspection Code. The committees, subcommittees and task groups last met in Spokane, Washington, on August 15<sup>th</sup> through 18<sup>th</sup>. At that meeting the 2005 Addenda was approved to be published at the end of the year. As part of the 2005 Addenda, some clean up that we did was in an RB-5602 of the NBIC, which is the recovery boiler section. It was pointed out to us that we had a TAPPI standard 0402-12, which was obsolete or superseded, and we took that advice and removed it as a reference.

(Cont.)

One other important change that was made is historically the NBIC meets twice a year and that was January and August. We changed the meeting for the summer to July. So it will be in January and July of each year. The reason for the change is that we are going to two ANSI public review periods for the annual revisions. So by doing that it will let us establish a better workload.

The next meeting of the NBIC will be in Corpus Christi, Texas. That will be January 23 through 27, 2006. The July 2006 meeting will be in Chattanooga, Tennessee and will be held July 17<sup>th</sup> through 20<sup>th</sup>.

The other thing that I think will be of interest to this group, especially the owners and operators, is the National Board published synopsis of the jurisdictional laws, rules and regulations. Up until this time it has been published in hard copy and on CD ROM and there is a charge for it. Effective next Friday, the 14<sup>th</sup> of October, that document will be available on our website and it will be free of charge. You can access the website at [www.nationalboard.org](http://www.nationalboard.org) and the only requirement to obtain the synopsis is that you register as a "user." Once you have done that, you will be able to access it and print any or all parts of it. We decided to make this a free service and hopefully it will make it easier for you to deal with the various jurisdictions in complying with their laws, rules and regulations.

If there are any questions, I will be happy to answer them; if not, that concludes my report.

**VICE-CHAIRMAN:** George, there was one question that I was asked to ask you. We heard that a proposed change to the NBIC would be that plugging of boiler tubes would be considered an alteration. Could you comment on that, where that is, and how we can comment back on that?

**GEORGE BYNOG:** Yes, that was brought up yesterday in your ESP meeting. The only activity I'm aware of at the current time that would have any impact on that would be there was a Task Group appointed at the last NBIC Committee Meeting to charge a group with investigating tube plugging of fire tubes in fire tube boilers. That is the only current activity I know of that would impact it and generally, as far as an alteration is concerned, increasing the heating surface on any boiler is automatically considered an alteration. If your plugging tubes, generally you would be decreasing the heating surface, which would not be an alteration by the current wording.

As I mentioned, you can access our website at: [www.nationalboard.org](http://www.nationalboard.org). If there are any comments or questions pertaining to the NBIC, you can direct them to the Chairman of the NBIC, who is Chuck Withers. His e-mail address is: [cwithers@nationalboard.org](mailto:cwithers@nationalboard.org). The NBIC Committee Secretary is Robin Heilman. Her e-mail address is: [rheilman@nationalboard.org](mailto:rheilman@nationalboard.org).

8. **NATIONAL BOARD OF BOILER & PRESSURE VESSEL INSPECTORS' REPORT – (Cont.)**

If you have any questions or comments, such as the one you've just asked, we would certainly appreciate having you send them to us. We also encourage everyone who has the opportunity, to attend the NBIC Committee meetings. Generally the Task Groups meet on Monday, Subcommittees on Tuesday, and the Main Committee meets on Thursday. We certainly value your input, especially in the areas of any particular specialized type of repair procedures, operating procedures, etc., and I think we could all work well together.

*{BLRBAC Secretary's Note: The Meeting Minutes of the National Board Inspection Code Main Committee and the various subcommittees can be downloaded or viewed online at [www.nationalboard.org](http://www.nationalboard.org) by clicking the "NBIC" button.}*

9. **WESTERN CANADA BLRBAC REPORT – Bob Norton (submitted as a written report only)**

The spring meeting was held in Campbell River with 35 members and guests in attendance. The meeting included a tour of the Elk Falls pulp and paper mill. The Recovery boiler had just been rebuilt and was the highlight of the tour.

There were three incident reports for the meeting,

1. Recovery boiler ESP'd when the boiler flamed out. Highlights the need for training in how to recognize when an ESP is needed
2. Economizer tube leak found during an operator round. Boiler shutdown in an orderly fashion
3. Smelt leak in boiler furnace floor to sidewall seal. The boiler was shutdown in orderly fashion and seal repaired.

Report given from the Atlanta Spring meeting on ESP committee notes and a presentation on Materials and Welding Subcommittee.

Boiler manufactures gave a report on the following topics,

- Aker Kvaerner Presentation on XL Recovery boilers
- Andritz gave a presentation on new boiler technology including info on the beer can nozzles
- B&W gave a presentation on the use of a water coil air heater and some design issues.

Roundtable discussions

- Reviewed the ideas of running for 18-month durations. What are the criteria set by the insurance and boiler inspection department?
- Discussed time to waterwash after liquor is pulled. Many mills are using the contractors to help with mechanical lancing
- Beetle pine chips are causing some pluggage in the northern mill evaporators
- Some mills experimenting with ash conditioner to prolong the boiler running time before water washes

Next meeting to be held in Vancouver, BC on November 2, 2005

## 10. ACTIVITIES OUTSIDE NORTH AMERICA REPORTS

No reports were presented by organizations outside of North America. However, a PowerPoint presentation was received from Brazil and is included as Attachment D.

## 11. OPERATING PROBLEMS SESSION REPORT – Karl Morency

### **Operating problems Session Report:**

Approximately 25 questions / problems / opportunities were discussed in the operating problems session. The items discussed included:

- Load Burner (combustion induced) vibration
- Black Liquor Chloride levels and sources.
- Air purged sootblower wall boxes
- BLOX, (Black Liquor Oxidation)
- Boiler Walk-downs (soot blowers off)

The Safe Firing committee made a short presentation on the changes to the Safe Firing of Black Liquor Document, which was approved last fall.

Participation by the attendees was good. There were about 150 people in attendance. The session lasted nearly two hours. We are continuing to look for ways to improve the operating problems session.

## **CHAIRMAN'S CLOSING COMMENTS:**

**NEXT MEETING:** The next meeting will be held on April 3, 4 & 5, 2006, at the Crowne Plaza Hotel/Atlanta Airport, in Atlanta, Georgia.

## **ADJOURNMENT:**

**CHAIRMAN:** I'd like to adjourn the meeting. Again, the Technical Presentations will start up right after a short break. Everyone have a safe trip home.

## **TECHNICAL SESSIONS:**

New Installation Technique for ON-Line Green Liquor Density Measurement:  
Presented by Michael Sweeney of Liquid Solids Control

Black Liquor Enhancement Using Petroleum Coke  
Presented by Dr. Jeff Empie of IPST and Bill McPherson of DTE Energy Services

**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>Fall 2005 - 1</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>  <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>  <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>International Paper, Pine Bluff, Arkansas</b>                  No. 3 Recovery Boiler. B&amp;W Contract PR-60. Start-up 1960.                  1,170,000 ppd solids. Steam Flow 202,000 lb/hr. Operating at 1250 psig &amp; 900F. Design at 1425 psig. 2 drum boiler/ horizontal tube economizer/ DCE                  October 19, 2004  <b>Economizer</b> – pinhole leak in element 14, tube 1, above sootblower 31                  Total downtime 90 hours                  No  <b>Non-critical Incident</b>                  A decrease in solids at the liquor burners                  None                  Service Operator III investigating decrease in solids found water leaking from the economizer                  Enhancement used; no information in report                  No                  Replaced a section of the tube                  Impingement of condensate entrained in the sootblower steam severely thinned the tube                  Installed additional condensate drains on steam supply system to ensure condensate removal.                  Last through NDT inspection May 2004. Chemically cleaned May 2004</p>
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<p><b>Fall 2005 - 2</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>  <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>    <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>International Paper, Pine Bluff, Arkansas</b>                  No. 3 Recovery Boiler. B&amp;W Contract PR-60. Startup 1960                  1.17 million ppd solids. Steam flow 202,000 lb/hr. Operating at 1250 psig &amp; 900F. Design at 1425 psig. 2 drum boiler/ horizontal tube economizer/ DCE                  June 18, 2005  <b>Economizer</b> – leak in sootblower pass #2 in a weld in loop #14                  Total downtime 36 hours                  No  <b>Non-critical Incident</b>                  Liquor solids to the boiler had gradually decreased                  None installed                  Liquor solids to the furnace had gradually decreased to 63.9%. Service Operator III investigating the cause discovered water dripping into the ash hopper. Traced source through a place where water leaking around the economizer casing and thus to the weld                  No                  One additional bend was thinned but did not fail. It was replaced.                  Complete bend replaced. Leak in an old weld that probably had porosity                  Porosity in an old weld                  Area of damage visual and PT inspected May 2005. Acid cleaned May 2004</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 - 3</b>  <b>Location:</b>  <b>Unit:</b>    <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>    <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>  <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>International Paper, Texarkana, Texas</b>  Recovery Boiler No. 2. B&amp;W Contract PR-186. Startup 1976. Second, upper hot economizer installed by B&amp;W in 1985. Third at this location in October 2005. Cold economizer as part of control odor upgrade located below and to rear of hot economizer installed by B&amp;W in 1991. 4.55 million ppd solids. Steam flow 763,600 lb/hr. Operating at 1050 psig &amp; 813F. Design at 1200 psig. 2 drum boiler/ large economizer  February 23, 2005  <b>Economizer</b> – crack in seal weld of hand hole cap on right hand end of module lower rear header that is located next to LHSW in the secondary, cold economizer located below and to rear of 1<sup>st</sup> economizer (original)  Downtime for leak – zero hours (boiler continued to run for 12 days until scheduled inspection as leak was a fine mist not impinging on any pressure parts and zero potential to reach the furnace). Leak volume checked once per shift over the 12 days  No  <b>Non-critical Incident</b>  Area Manager observed water coming out of economizer hopper door  None installed  Boiler continued to operate with consensus of management and corporate technology  No  No  Gouged seal on cap for removal, repaired seat and welded new cap into header  Faulty seal weld  NA  Last inspection April 2004. Acid cleaning with HCl in 2004.</p>
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<p><b>FALL 2005 - 4</b>  <b>Location:</b>  <b>Unit:</b>    <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>  <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>  <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>International Paper, Texarkana, Texas</b>  Recovery Boiler No. 2. B&amp;W Contract PR-186. Startup 1976. Second, upper hot economizer installed by B&amp;W in 1985. Third at this location in October 2005. Cold economizer as part of control odor upgrade located below and to rear of hot economizer installed by B&amp;W in 1991. 4.55 million ppd solids. Steam flow 763,600 lb/hr. Operating at 1050 psig &amp; 813F. Design at 1200 psig. 2 drum boiler/ large economizer  March 4, 2005  <b>Economizer</b> – crack in Tube No. 1 from RHSW. 4<sup>th</sup> row from front, at lower rear header  Downtime for leak – zero hours (boiler was down for inspection)  No  <b>Non-critical Incident</b>  Hydro test following interim inspection  None installed  Leak discovered during hydrostatic test  NA  NA  Tube plugged at upper and lower headers  Stress corrosion crack  NA  Last inspection April 2004. Acid cleaning with HCl in 2004.</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 - 5</b>  <b>Location:</b>  <b>Unit:</b>    <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>    <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>International Paper, Texarkana, Texas</b>  Recovery Boiler No. 2. B&amp;W Contract PR-186. Startup 1976. Second, upper hot economizer installed by B&amp;W in 1985. Third at this location in October 2005. Cold economizer as part of control odor upgrade located below and to rear of hot economizer installed by B&amp;W in 1991.. 4.55 million ppd solids. Steam flow 763,600 lb/hr. Operating at 1050 psig &amp; 813F. Design at 1200 psig. 2 drum boiler/ large economizer  March 27, 2005  <b>Economizer</b> – hole in bottom side of tube just before the bend. Leak in tube 43 from LHSW, 1<sup>st</sup> row from furnace, at the lower, rear, center header of primary (Hot) economizer  Total downtime – 24.75 hours  No  <b>Non-critical Incident</b>  Found water in hopper ash conveyor during boiler walkdown  None installed  Conveyor receives ash from both generating bank and primary economizer hoppers. Further investigation determined water coming from economizer center hopper leg pipe.  No  No  Tube plugged at upper and lower headers  Tube sent out for analysis. Boiler operated in early years with poor oxygen control.  Pending analysis  Last inspection April 2004. Acid cleaning with HCl in 2004.</p>
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<p><b>FALL 2005 - 6</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>  <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>TEMBEC, Smooth Rock Falls, Ontario</b>  No. 1 Recovery Boiler. B&amp;W Contract CA5710. Startup 1965  1.2 million ppd solids. Steam flow 206,000 lb/hr. Operating at 625 psig &amp; 725F. Design at 700 psig. 2 drum boiler/ small economizer/ DCE  October 4, 2004  <b>Economizer</b> – 1/16 inch pinhole above lower header at 7<sup>th</sup> tube row from left hand sidewall, 4<sup>th</sup> tube of 8 in the row  Outage time due to leak- 44.75 hours. Total downtime 62.75 hours  No  Recovery Helper noticed water dripping from the lower economizer inspection door  None installed  No information. Boiler firing natural gas only at time if incident.  No  No  No information  Undetermined when report written  No information  Boiler acid cleaned in 1997</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 - 7</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b></p> <p><b>Incident Date:</b>  <b>Leak/Incident Loc:</b></p> <p><b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b></p> <p><b>Sequence of events:</b></p> <p><b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b></p> <p><b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Continued in Case No. 8</b>  <b>Sappi Fine Paper North America, Cloquet, Minnesota</b>                  Recovery Boiler No. 10. Tampella Contract No. 18258. Startup 1998.                  4.5 million ppd solids. Steam flow 696,000 lb/hr. Operating at 1300 psig &amp; 860F. Design at 1675 psig.                  July 19, 2005  <b>Economizer</b> – 1/32” pinhole centered in a 1” long circumferential crack at upper edge of tube to header weld. Second tube from right side in front row of tubes of No. 2 economizer (hot bank). Tube is welded to upper end cap of inclined lower bottle supply header. Tubes in this front row form a baffle with fins welded together.                  Total downtime 52 hours</p> <p>No  <b>Non-critical Incident</b>                  Operator discovered water in the ash-collecting conveyor.                  Leak detection system setup for boiler leak detection does not indicate economizer leaks. Nalco RBLI combines waterside mass balance and Tracer, and chemical balance. Installed 1998                  Operator traced water back to source at lower end of No. 2 bank where water was observed spraying inside a man-door. An orderly shutdown was taken.</p> <p>No                  No                  Access gained by cutting away casing near the leak. Crack ground out completely and tube rewelded (pad welded) to inclined header end cap. Radio graphed, hydroed and started up.                  Believed leak to be weld porosity; subsequent incident on July 23 showed cause was different                  Plan at time was to NDT weld in the 1<sup>st</sup> row.                  Damaged area last visually inspected April 2005. Chemically cleaned with Inhibited HCl during commissioning in 1998.</p>
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<p><b>FALL 2005 - 8</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b></p> <p><b>Incident Date:</b>  <b>Leak/Incident Loc:</b></p> <p><b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b></p> <p><b>Sequence of events:</b></p> <p><b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b></p> <p><b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Sappi Fine Paper North America, Cloquet, Minnesota</b>                  Recovery Boiler No. 10. Tampella Contract No. 18258. Startup 1998.                  4.5 million ppd solids. Steam flow 696,000 lb/hr. Operating at 1300 psig &amp; 860F. Design at 1675 psig.                  July 23, 2005  <b>Economizer</b> – 1-1/2” long crack at upper edge of weld of tube to header weld, centered at 0600 position. First tube from right side in front row of tubes of No. 2 economizer (hot bank). Tube is welded to upper end cap of inclined lower bottle supply header. Crack internally initiated                  Total downtime 40.5 hours</p> <p>No  <b>Non-critical Incident</b>                  Operator discovered water in the ash-collecting conveyor.                  Leak detection system setup for boiler leak detection and does not indicate economizer leaks. Nalco RBLI combines waterside mass balance and Tracer, and chemical balance. Installed 1998                  Water observed in collecting conveyor and dripping from lagging on right side of hopper lagging. Access door opened at location of previous leak and water noted to be running down hopper wall. Orderly shutdown followed</p> <p>No                  No                  Failed weld and adjacent welds in same row shear wave ultrasonic tested before grinding. Developing crack detected on 3<sup>rd</sup> tube. Welds on tubes 1 and 3 ground-out, and tube 4 partially, and then repaired. . Radio graphed, hydroed and started up                  Apparent fatigue stress crack. Believe stress caused by economizer not expanding freely                  NDT testing on first row and adjacent tubes to find and correct root cause                  Damaged area last visually inspected April 2005. Chemically cleaned with Inhibited HCl during commissioning in 1998.</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 - 9</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>    <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>International Paper, Quinnesec, Michigan</b>                  No. 1 Recovery Boiler. B&amp;W Contract PR-203. Startup 1983                  3.66 million ppd solids. Steam flow 564,000 lb/hr. Operating at 600 psig &amp; 752F. Design at 800 psig. 2 drum boiler/ large economizer                  August 1, 2005  <b>Economizer</b> – horizontal crack ~ 3/8 inch long and about 1/2 inch above tube weld to lower header. Tube leak in 3<sup>rd</sup> tube in row #1 on the NE header (left hdr of 3 hdr arrangement) of east (cold) economizer was at 0600 position. This tube was next to left wall casing                  Total downtime 23 hours/17 min                  No  <b>Non-critical Incident</b>                  Operator cleaning economizer hopper noticed water running down hopper wall.                  Leak detection system                  Operator notified shift manager to inspect the leak; he notified department manager who inspected leak 1 hour after first observation. Decision was to shutdown in orderly manner                  No                  No                  Ground out crack, dye penetrant checked, preheated to 350F and welded                  Stress crack                  Additional NDE on header and tubes during 2006 outage.                  Area of damage last inspected April 2005 using visual and UT for lower bends. Chemical cleaned in May 2003 with blended mix of 160F treated water, 7.5% HCl, 0.3% Rodine 426, 0.5% ammonium bifluoride and 0.075% thiourea</p>
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<p><b>FALL 2005- 10</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>    <b>Leak detection:</b>  <b>Sequence of events:</b>  <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>    <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>International Paper, Ticonderoga, New York</b>                  Recovery Boiler No. 1. B&amp;W Contract PR-131. Startup 1969.                  2.01 million ppd solids. Steam Flow 300,000 lb/hr. Operating at 875 psig &amp; 825F. Design at 975 psig. 2 drum boiler/ large B&amp;W economizer installed in 1981.                  July 8, 2005  <b>Economizer</b> – crack in tube 1 inch below top header in last section of the Economizer. Tube in #3 module, 3<sup>rd</sup> tube row from rear, tube 28. A relatively straight tube.                  Total downtime 31 hours                  No  <b>Non-critical Incident</b>                  Walkdown                  During startup walkdown found water leaking from ID fan inlet duct work.                  None installed.                  Power plant operator walking down unit using a startup checklist                  No                  No                  Tube removed from headers and replaced by plugs seal welded to the headers                  Appears to be external dew point corrosion that occurred during lay up [out of service] in combination with cyclical fatigue of this relatively straight tube                  Mill will clean and inspect this area early in the next outage.                  Last inspection May 2005. Acid cleaned at same time.</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 – 11</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>    <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>    <b>Root cause:</b>    <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Weyerhaeuser, Grand Prairie, Alberta</b>  CE Canada contract No. CA-70129. Startup 1973  4.2 million ppd solids. Steam flow 670,000 lb/hr. Operating at 900 psig &amp; 800 F. Design at 1050 psig. 2 drum boiler/ large crossflow economizer  June 15, 2005  <b>Economizer</b> - 1/8 inch pinhole in tube 2, platen 15 at approx, middle of bank (front to rear) and just above lower header. Several leaks repaired in past years.  Total downtime 23.5 hours    No  <b>Non-critical Incident</b>  Operator walkdown during Planned Maintenance Outage found leak  None installed  Boiler off-line for normal planned maintenance outage. Operator walkdown to assess pluggage revealed a wet section of salt cake when door opened at economizer.    No  No  Dye penetrant test of two tubes adjacent to the pinhole verified no significant washing of these tubes. Pinhole ground out and repaired with stick weld. PT after cooling. Hydro to 1.5 times operating pressure.  Corrosion and pitting on outside of tube due to wet sluicing of hoppers with hot water. Vapor condenses on the tubes to cause corrosion.  Complete boiler due to be replaced in 2007  Area of damage last inspected during April 2005 annual outage. Chemical cleaned 1990 using EDTA.</p>
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<p><b>Fall 2005 - 12</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>    <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>    <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Delta Natural Kraft, Pine Bluff, Arkansas</b>  Recovery boiler No. 1. CE Contract No. 06356. Startup 1957. Economizer dates from 1957 750,000 ppd solids. Steam flow 100,000 lb/hr. Operating at 450 psig &amp; 750F. Design at 675 psig. Three drum boiler/ small economizer/ DCE  March 28, 2005  <b>Economizer</b> – two leaks. 1) ½” circumferential crack in weld to upper header of tube 17, row 23. 2) pin hole in tube 33, row 21 at top of weld line 3 feet above lower header.  Total downtime 5.5 hours    No  <b>Non-critical Incident</b>  Operator walkdown  None installed  Operator on walkdown noticed water flowing from around the lower economizer header. No effect on normal operation. Day Supervisor notified upon arrival for day shift and leak confirmed at upper header. Liquor pulled and bed burned down as a part of controlled boiler shutdown    No  No  Leak 1- crack ground out and rewelded. Leak 2- found during hydro of repair of leak 1; pad weld made over pinhole. At July 2005 Annual Outage, 18” section of tube replaced  Poor weld in both cases- 1<sup>st</sup>, lack of fusion and porosity. 2<sup>nd</sup>, porosity.  Better QA on tube welds  Area of damage last inspected July 2004 using visual on welds and UT of tube thickness. Acid cleaned with HCl 1986.</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>Fall 2005 - 13</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>    <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>    <b>Root cause:</b>    <b>Future prevention:</b>    <b>Last full inspection:</b></p>	<p><b>Weyerhaeuser Company, Marlboro Mill, Bennettsville, South Carolina</b>                  No 1 Recovery Boiler. Ahlstrom Contract No. 5904. Startup 1990.                  4.4 million ppd solids. Steam flow 635,000 lb/hr. Operating at 1100 psig and 850F. Design at 1550 psig. Single drum/ long flow large economizer                  March 13, 2005  <b>Economizer</b> – first crack after 15 years. Crack in heat affected zone of weld on supply tube from feedwater inlet pipe to lower header of Economizer No. 1 (cold bank). Each header has an orifice welded in the feeder tube.                  Downtime assessed as zero. Boiler was being shutdown for scheduled Spring outage.                  No  <b>Non-critical Incident</b>                  Operator removing liquor gun observed water dripping from bottom of economizer area.                  None installed                  Operator found about 1/2" of water in bottom of economizer conveyor and notified team leader. ~ 1 hr after first observation of water, phone call to Department Manager resulted in decision to shutdown in orderly manner. Boiler isolated from steam header and ESP /Rapid Drain Test conducted per normal procedure.                  No                  No                  Tube sectioned and replaced with a Dutchman. [Mill thought boiler built with a weld backing ring. Subsequent leaks determined the location to be a 'J' bevel for the orifice] Future repairs will use a full penetration "V groove" and consider post-weld stress relief as advised by metallurgist.                  Corrosion fatigue crack that initiated internally at a bevel on the inside of the tube. Fatigue stimulated by cyclic stresses associated with the operation of the feedwater line                  Other welds were x-ray tested during repairs. Future outages will be planned with removing some of the other welds and analyzing for associated cracks.                  Visual inspection of area October 2004. Chemical acid cleaning with HCl during 1990 startup</p>
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<p><b>FALL 2005 - 14</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>    <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>    <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Weyerhaeuser Company, Marlboro Mill, Bennettsville, South Carolina</b>                  No. 1 Recovery Boiler. Ahlstrom Contract No. 5904. Startup 1989                  4.4 million ppd solids. Steam flow 633,000 lb/hr. Operating at 1080 psig &amp; 850F. Design at 1550 psig. Single drum/ large economizer.                  May 28, 2005  <b>Economizer</b> – 1-inch crack in the weld of 7<sup>th</sup> orifice to the main inlet bottom header of No. 2 economizer (hot economizer). A similar event in March 2005 (report No. 13) was a crack downstream of an orifice.                  Total downtime 37.5 hrs                  No  <b>Non-critical Incident</b>                  Operator making rounds saw water dripping from the economizer hopper.                  None installed                  Operator went to investigate. Asked control room operator to review the instruments for further leak investigation. Water source verified and unit shutdown in normal manner.                  No                  No                  Crack ground out, welded and PT'd.                  Tube was not sectioned for testing. Metallurgical examination of several tubes in this area indicated crack like flaws caused by lack of penetration of the original weld. Flaws of this type are known to be the initiation site for fatigue failures that can occur after years of service.                  Inlet headers in both economizers will be replaced                  Area of leak visually inspected March 2005. Acid cleaned in 1990 during startup with HCl.</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 - 15</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>      <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>      <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Weyerhaeuser Company, Marlboro Mill, Bennettsville, South Carolina</b>                  No. 1 Recovery Boiler. Ahlstrom Contract No. 5904. Startup 1989                  4.4 million ppd solids. Steam flow 633,000 lb/hr. Operating at 1080 psig &amp; 850F. Design at 1550 psig. Single drum/ large economizer.                  May 31, 2005  <b>Economizer</b> – circumferential crack in the No. 2 economizer (hot economizer) inlet header nozzle # 6. Crack about 2/3 rds of nozzle diameter. Crack was not in a weld, but just below a bevel cut where the nozzle OD had been machined down during construction to match the connection tube diameter. All cracks found near the orifices                  Total downtime 63 hrs                  No  <b>Non-critical Incident</b>                  Operator making rounds saw water dripping from the economizer hopper;                  None installed                  A large amount of water was confirmed to be in the hopper. No signs of water entering the furnace. Liquor removed, boiler cooled and economizer waterwashed. X-ray crew, inspector and manufacturer brought into mill. Cracked tube sectioned. 54 x-rays taken around the header. Two additional welds suspected as having cracks were removed.                  No                  No                  Tube sectioned and a Dutchman installed.                  Suspect insufficient freedom of movement between hopper, header and modules.                  Seal joint for headers were enlarged where header passes through the hopper wall.                  Area of leak visually inspected March 2005. Acid cleaned in 1990</p>
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<p><b>FALL 2005 - 16</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>      <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>      <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>      <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Weyerhaeuser Company, Marlboro Mill, Bennettsville, South Carolina</b>                  No. 1 Recovery Boiler. Ahlstrom Contract No. 5904. Startup 1989                  4.4 million ppd solids. Steam flow 633,000 lb/hr. Operating at 1080 psig &amp; 850F. Design at 1550 psig. Single drum/ large economizer.                  July 2, 2005  <b>Economizer</b> – 1/8-inch crack in the weld on the opposite side of 7<sup>th</sup> orifice to the main inlet bottom header of No. 2 economizer (hot economizer from where leak occurred on May 28 (report 14)).                  Total downtime 37.5 hrs                  No  <b>Non-critical Incident</b>                  Operator making rounds saw water dripping from the economizer hopper.                  None installed                  Confirmed that the leak was in the economizer. Liquor removed from boiler after a controlled shutdown. Visually confirmed leak in the main inlet header.                  No                  No                  Crack ground out and welded                  Tube was not sectioned for testing. Metallurgical examination of several tubes in this area indicated crack like flaws caused by lack of penetration of the original weld. Flaws of this type re known to be the initiation site for fatigue failures that can occur after years of service.                  Replacement of all inlet headers. Orifices eliminated; replaced by underdrilling tube holes in headers.                  Area of leak visually inspected March 2005. Additional PT and x-ray due to leak of May 28. Acid cleaned in 1990.</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 - 17</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>  Downtime hrs due to leak/total:  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>  <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Critical Incident No. 625</b>  <b>International Paper, Pine Bluff, Arkansas</b>  No. 4 Recovery Boiler. B&amp;W Contract PR-113. Startup 1967.  3,500,000 ppd solids. Steam flow 508,000 lb/hr. Operating at 1250 psig &amp; 850F. Design at 1500 psig. 2 drum boiler with single pass crossflow / 2 drum, 2 pass, crossflow economizer/ DCE  March 3, 2005  <b>Economizer</b> –pinhole leak in tube 8 in tube row 96 at surface of upper economizer drum.  Total downtime 72 hours    No  <b>Critical Incident</b> –there is no baffle between leak and furnace,  Service Operator III making routine walkdown of the boiler  None installed  Operator on rounds observed water on the east side of the economizer  No enhancement  No  Mechanically plugged the tube at both drums and UT tested other tubes in area of leak  Thinned economizer tube. 6 leaks in past year in the economizer section.  New economizer to be installed Spring 2006  Last through NDT inspection July 2004. Chemically cleaned July 2003</p>
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<p><b>FALL 2005 - 18</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    Downtime hrs due to leak/total:  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>    <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>    <b>Root cause:</b>    <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Critical Incident No. 626</b>  <b>International Paper, Courtland Mill, Alabama</b>  No. 2 Recovery Boiler. B&amp;W Contract PR-180. Startup 1979  4.0 million ppd solids. Steam flow 480,000 lb/hr. Operating at 450 psig and 550F. Design at 550 psig. 2 drum boiler/ 2-pass crossflow small economizer/ DCE  July 24, 2005  <b>Economizer</b> – economizer consists of two 6-tube modules. Tube split at lower header in last row of 2<sup>nd</sup> module, No. 35 (center module, leftmost tube). Three lower header &amp; 3 upper header handhole caps were leaking. 1/8" pinhole leak in generating bank tube No. 1 from left wall on the cold side 6" below the bend  Total downtime 48 hours for economic reasons; 42 due to delay in startup    No-boiler not on line  <b>Critical Incident</b> –leak probably present before the shutdown  Boiler was down when operators saw what appeared to be washing of salt cake on tubes  None installed  Operator preparing to wash ash deposits from surface and boiler hydrostatically tested disclosing the leaks  No  No  Economizer- Dutchman installed welded to header. Handhole caps removed and rewelded.  Generating tube pad welded  Economizer-internal pitting and crack at toe of weld to the header as a result of past operation with oxygen deficiency due to control method. Leak in gen bank probably result of mechanical damage caused by scaffolding that gouged the tube  All handhole caps removed and replaced with pipe stub and pipe cap  Last inspection July 2004. Acid cleaned in May 2001</p>
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Leak at same location as in Incident No. 20

**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 - 19</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    Downtime hrs due to leak/total:  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>    <b>Sequence of events:</b>  <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>    <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>International Paper, Savannah, Georgia</b>  No. 15 Recovery boiler. Tampella Contract. Startup 1995.  7.39 million ppd solids. Steam flow 1,050,000 lb/hr. Operating at 1200 psig &amp; 885F. Design at 1500 psig. Single drum/ large economizer using forged headers with extruded nozzles.  September 2, 2005  <b>Economizer</b> - ~ 1.5" circular stress crack in tube #1, platen 144 of economizer I (cold section, tube against west wall) at ~ 2" above lower header &amp; just above butt weld of tube to nozzle.  Total downtime 57 hours    No  <b>Non-critical</b>  Oiler on lubrication route noticed water coming out of the Economizer I ash conveyor  In house mass balance system using fuzzy logic installed in 1995 did provide initial detection of the leak. Alarms had been disabled due to history of false leak indication  Lubricator notified boiler operator and decision made that location permitted a normal shutdown.  No  No  Crack ground out and weld repaired. Radiography detected several weld defects, which were re-ground and repaired. Second radiography performed.  Stress on tube. Tube had dropped in relation to others  Further inspection December 2005 during annual outage  Area of damage has never been inspected. Acid cleaning in 2003 using reverse nitrogen circulation</p>
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<p><b>FALL 2005 - 20</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    Downtime hrs due to leak/total:  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>    <b>Sequence of events:</b>    <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>    <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Alabama River Pulp Company, Claiborne, Alabama</b>  ARP Recovery Boiler No. 1. B&amp;W Contract PR-192. Startup 1978.  5.5 million ppd solids. Steam Flow 711,000 lb/hr. Operating at 1225 psig &amp; 900F. Design at 1425 psig. 2 drum boiler/ large economizer  June 27, 2005  <b>Economizer</b> – hole ~ 1/16" longitudinal &amp; 1/8" transverse located ½: from tube to lower header weld of first tube, cold side of header at LH sidewall, rear economizer module. Tube is horizontal at leak location  Total downtime 33 hours    No  <b>Non-critical Incident</b>  During operator inspection of economizer ash rotary valve that tripped.  Hercules Water and Mass Balance System installed in May 2004 did not detect nor confirm a leak. Leak too small and did not exist long enough for system to respond.  Operator went to investigate the west economizer rotary discharge valve that tripped and noticed water in the hopper that was running down the hopper wall on rear economizer side of internal baffle plate. Opened door at economizer outlet and observed water spraying around the lower rear header. Liquor was pulled and orderly shutdown initiated  No  No  Grinding to remove all indications and weld repair with full penetration weld. Before repair, UT inspection of area showed surrounding tube wall to be well above minimum wall.  Unknown. Three prior leaks.  Further inspection and NDT planned for April 2006 outage  Area inspected visually April 2005.</p>
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Leak at same location as in Incident No. 18



**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 200 - 21</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    Downtime hrs due to leak/total:  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>    <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Abitibi Consolidated, Fort Frances, Ontario</b>  Recovery Unit No. 1. B&amp;W Contract No. 67550. Startup 1971  3.3 million ppd solids. Steam flow 350,000 lb/hr. Operating at 875 psig &amp; 825F. Design at 1000 psig. 2 drum boiler/ large economizer  May 13, 2005  <b>Superheater</b> – 1 ½” circumferential crack in 1<sup>st</sup> tube from RHSW at weld connection to rear intermediate (secondary inlet) header, located in penthouse.  None  No  <b>Non-critical Incident</b>  Found during hydro test at 1050 psig after annual shutdown  None installed  NDT found 5 additional circumferential cracks in weld connections in the same header. 3 cracks next to RHSW and 3 at LHSW. Believe cracks in original 1971 construction.  No  No  Cracks ground and seal welded  Fatigue  More extensive NDT inspection at next annual shutdown  Acid cleaned in 1983</p>
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<p><b>FALL 2005 - 22</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    Downtime hrs due to leak/total:  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>    <b>Sequence of events:</b>    <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>    <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Smurfit-Stone Container Corporation, Fernandina Beach, Florida</b>  No. 4 Recovery Boiler. B&amp;W Contract PR-136. Startup 1970.  3 million ppd solids. Steam flow 495,700 lb/hr. Operating at 870 psig and 825F. 2 drum boiler/ large economizer  June 29, 2005  <b>Superheater (secondary)</b> – failure at a circumferential fatigue crack in the lower bend of the third loop in third pendant from left side  Total downtime on liquor 49.5 hrs/ off line on steam 44.83 hrs  ESP was performed.  <b>Non-critical Incident</b>  Operator making rounds heard a noise on the 6<sup>th</sup> floor.  Nalco Trasar – RBLI System installed 1997 in operation using mass balance and tracer. System alarmed, but it routine for an alarm to occur on a load change. Walkdown following alarm did not hear a noise to indicate a leak. Noise heard ~ 3 hrs after alarm.  Loud noise persisted when sootblower steam isolated and operator initiated ESP 15 minutes after first hearing the noise.  No  No  Pendant plugged at the two headers. Tubes supported by angle iron supports welded across the pendant.  Stress and fatigue. Possibly initiated from a T-link support coming apart.  There have been no similar tube failures.  Last inspection annual outage Feb 2005. Alkaline boilout in 1990.</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 - 23</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>  <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>    <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>  <b>Future prevention:</b>    <b>Last full inspection:</b></p>	<p><b>Georgia-Pacific Corporation, Port Hudson, Louisiana</b>          No. 1 Recovery Boiler. B&amp;W Contract PR-110. Startup 1967. Andritz did low odor rebuild in 2000 including supply of overly large SH intended to cool gas into boiler bank that plugged 3 million ppd solids. Steam flow 457,700 lb/hr. Operating at 900 psig and 825F. Design at 1025 psig. Single drum boiler/ large economizer          March 5, 2005  <b>Superheater</b> – three (3) fish mouth cracks in lower loops of 2B bank (2<sup>nd</sup> bank from furnace) (material SA-213-T22, 2" OD x 0.240" wall) (four flow arrangement):          Tube # 1 – 1 7/8" long x 3/8" wide crack in element # 1, column # 1, row (loop) 3 [row 3 is 3<sup>rd</sup> inside loop of 4 loops; 1 is outer]          Tube # 2 – 5/8" long x 1/8" wide crack in element # 23, column # 2, row (loop) 2 [row 2 is 2<sup>nd</sup> inside loop of 4 loops; 1 is outer]          Tube # 3 – 5/8" long x 1/8" wide crack in element # 23, column # 3, row (loop) 2          Downtime due to leak – zero (boiler off-line for annual outage)          No  <b>Non-critical Incident</b>          Found during annual outage inspection          ALERT Systems Recover Boiler Advisor did not detect leak          RBA gave multiple alarms with inconsistent messages &amp; cleared within minutes. Walkdowns with IKs off did not reveal any sounds of leaks. There is much external noise interfering with hearing leaks.          No          No          Loops replaced          Overheat due to design issues from low odor rebuild in 2000. Surface has been removed.          Walkdowns with IKs turned off. Fix external noise sources if possible. Evaluate current configuration for further modification.          Last NDT inspection Jan. 2004. Chemically cleaned Nov. 2000</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 - 24</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b></p> <p><b>Incident Date:</b>  <b>Leak/Incident Loc:</b>  <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b></p> <p><b>Bed cooling:</b></p> <p><b>Wash adjacent tube:</b>  <b>Repair procedure:</b></p> <p><b>Root cause:</b></p> <p><b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Critical Incident No. 627</b>  <b>International Paper, Pine Bluff, Arkansas</b>          No. 3 Recovery Boiler. B&amp;W Contract PR-60. Startup 1960          1.17 million ppd solids. Steam flow 202,000 lb/hr. Operating at 1250 psig &amp; 900F. Design at 1425 psig. 2 drum boiler/DCE          October 5, 2004  <b>Boiler Bank-</b> Tube No. 38 in Row 4 (numbered from rear of bank) sheared at mud drum          Total downtime 128 hours</p> <p>ESP initiated. Mandatory time to stay out of recovery area is 4 hours  <b>Critical Incident.</b> Loose end of sheared tube could whip around and spray water into furnace          Master fuel trip          None installed.          Boiler tripped and Control Room Operator observed drum level went below lower limit, furnace pressure went higher than readable scale and automatic feedwater regulator went wide open. Operator recognized catastrophic situation and initiated ESP. At time of leak, boiler at normal operating conditions with no auxiliary fuel being used          Mill personnel applied sodium bicarbonate with a long lance and using Nitrogen motive force. Cooling started 6 hours after ESP with bed height 2 feet above bottom of primary airports. 1800 lbs applied over 6 hours cooled bed to less than 600F determined by probe. Cooling credited with saving 14 hours.</p> <p>No          Failed tube plugged at both drums. Plugged 2 additional nearby tubes that were weeping. NDT (UT) &amp; visual inspection resulted in plugging 4 more tubes          Possible causes include 1) excessive vibration, 2) water seepage from surrounding tubes or 3) poor quality rolling when tubes installed in 1989</p> <p>Last inspection May 2004. Unit chemically cleaned May 2004</p>
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<p><b>FALL 2005 - 25</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b></p> <p><b>Incident Date:</b>  <b>Leak/Incident Loc:</b>  <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>  <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>  <b>Future prevention:</b></p> <p><b>Last full inspection:</b></p>	<p><b>Critical Incident No. 628</b>  <b>Smurfit Stone Container Corp, Fernandina Beach, Florida</b>          No. 5 Recovery Boiler. B&amp;W Contract PR-189. Startup 1978          3.0 million ppd solids. Steam flow 495,700 lb. Operating at 870 psig &amp; 825F. 2 drum boiler/ large economizer          November 6, 2004  <b>Boiler Bank -</b> weld on steam drum plug in row 7 (counting from rear of bank), tube No. 50 from left hand side          Total downtime 57 hr, 35 minutes.</p> <p>ESP initiated. Mandatory time out of area 8 hours  <b>Critical Incident</b>          Nalco representative called operator informing that leak detection system indicated drop in TRASAR concentration          Nalco RBLI Trasar chemical balance system installed in 1997 provided initial detection of leak calculated later to be 5 gpm          Subsequent to receiving call from TRASAR representative, operator found water in boiler hopper and initiated ESP.</p> <p>No          Leak in tube 50, row 7, washed adjacent tube 49 in row 8 causing a second leak          Tube 49 plugged both drums. Tube 50-weld ground out and replaced          Lack of fusion in weld on plugged tube          Generating bank has been monitored for 5 years for "near drum corrosion". Some thinned tubes were plugged in February 2004. Welds in 3 plugs have leaked. Bank tubes to be replaced Spring 2006 annual outage. Iks in mud and steam drum passes to be replaced with 'oscillating' blowers          Last inspection March 2004. Alkaline boilout in 1990.</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 - 26</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>  <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>    <b>Sequence of events:</b>            <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>    <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Critical Incident No. 629</b>  <b>Weyerhaeuser Company, Springfield, Oregon</b>                  CE Contract No. 26968. Startup 1971                  2.4 million ppd solids. Steam flow 450,000 lb/hr. Operating at 600 psig &amp; 720F. Design at 900 psig. 2 drum boiler/ Ext. Boiler bank 27 ft. drum centers with no vibration restraints.                  April 22, 2005.  <b>Boiler Bank</b> – crack 85% of circumference in swaged portion of tube near to the steam drum. Tube is No. 38 of 72 from right wall, 7<sup>th</sup> tube from front of boiler bank,                  Total downtime 86 hours                    ESP initiated. Irrevocable policy is to stay out of recovery area for 12 hours.  <b>Critical Incident</b>                  Acoustical sensors alerted operator to a problem.                  Triple 5 Acoustical system with 29 structure borne sensors on boiler started picking up noise 10 hours before ESP. System installed in 1990                  Triple 5 issued warning about 6 AM that 2 sensors in boiler bank were at elevated levels but below alarm point. Boiler was at low steam rate. Boiler load increased ~ midnight &amp; operator walkdown with IKs shutoff heard steam leak in upper furnace. Triple 5 contacted ~ 1AM next day confirmed 'spectrum signature' from sensors 20 &amp; 22 looked like internal steam. No clear conductivity drop could be discerned initially. Package boiler brought on line &amp; RB off-liquor by 2 AM. Supt arrived at mill and data review showed a leak existed. Boiler ESPd at 2:11 AM. Superheater vent alarmed as not opening and had to be remote manually opened after 20 minutes. TCs on floor showed water never completely drained.                  No                  No                  Tube removed and plugs welded in mud and steam drums. Plugs leaked on hydro; blr drained, welds ground out and rewelded. Still leaked; root weld had lots porosity. New plugs welded in.                  Failure analysis identified low strain-high cycle mechanical fatigue.                  Follow up tube leak indications elevated to higher priority.                  Area of damage inspected September 2004 using near drum crack analysis. Chemically cleaned 2002</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 - 27</b></p> <p><b>Location:</b></p> <p><b>Unit:</b></p> <p><b>Size:</b></p> <p><b>Incident Date:</b></p> <p><b>Leak/Incident Loc:</b></p> <p><b>Downtime hrs due to leak/total:</b></p> <p><b>ESP?</b></p> <p><b>Classification:</b></p> <p><b>How discovered:</b></p> <p><b>Leak detection:</b></p> <p><b>Sequence of events:</b></p> <p><b>Bed cooling:</b></p> <p><b>Wash adjacent tube:</b></p> <p><b>Repair procedure:</b></p> <p><b>Root cause:</b></p> <p><b>Future prevention:</b></p> <p><b>Last full inspection:</b></p>	<p><b>Critical Incident No. 630</b></p> <p><b>Weyerhaeuser Company, Springfield, Oregon</b></p> <p>CE Contract No. 26968. Startup 1971</p> <p>2.4 million ppd solids. Steam flow 450,000 lb/hr. Operating at 600 psig &amp; 720F. Design at 900 psig. 2 drum boiler/ Ext</p> <p>June 25, 2005.</p> <p><b>Boiler Bank</b> – crack in swaged portion of tube at outer face of mud drum. Tube is No. 34 of 72 from right wall, 9<sup>th</sup> tube from front of boiler bank, adjacent to previous leaks. Superheater leak at tie attachment discovered during shutdown</p> <p>Total downtime 75.5 hours</p> <p>No. [Irrevocable policy to stay out of recovery area for 12 hours implemented]</p> <p><b>Critical Incident</b></p> <p>Acoustical sensors alerted operator to a problem.</p> <p>Triple 5 Acoustical system with 29 structure borne sensors on boiler started picking up noise one day before incident. System installed in 1990</p> <p>No noises could be heard with a series of walkdowns with IKS off over ~ a 6 hour period. Then boiler capacity reduced and liquor firing discontinued to try defining noise. Gas burners noisy at this point and they also taken out of service. Leak could now be heard. Boiler drained to mud drum elevation; mill considered this as an ESP.</p> <p>No</p> <p>No</p> <p>Tube plugged and seal welded to drum both ends. Tube not removed; holes placed at top and bottom of tube.</p> <p>Failure analysis of 4/22/2005 incident identified low strain-high cycle mechanical fatigue.</p> <p>Follow up tube leak indications elevated to higher priority. Generating bank to be replaced and include vibration restraints</p> <p>Area of damage inspected September 2004 using near drum crack analysis. Chemically cleaned 2002</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 - 28</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>    <b>Leak detection:</b>  <b>Sequence of events:</b>    <b>Bed cooling:</b>    <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>    <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Critical Incident No. 631</b>  <b>International Paper, Androscoggin Mill, Maine</b>                  No. 1 Recovery Boiler. CE Contract 2564. Startup 1965                  1.8 million ppd solids. Steam flow 298,000 lb/hr. Operating at 900 psig &amp; 825F. Design at _____                  2 drum boiler/long flow economizer (tangent tube upper furnace)                  August 17, 2005  <b>Boiler Bank Sidewall (wall in leak area formed by spreading and fining furnace sidewall tubes)</b> – weld failure at termination of fin on tube US-5 in upper, right hand sidewall.                  Total downtime 160.1 hours.                    ESP Initiated. 4 hour mandatory wait period  <b>Critical Incident</b>                  Increase in the steam/feedwater differential plus water lab operator report of chemical readings on the low side.                  None installed                  The crew inspected the boiler and saw water on buckstay at boiler bank sidewall above the nose arch. Door above buckstay cracked open to listen and water sprayed from the door. ESP immediately initiated                  CO<sub>2</sub> applied with lances. 55-75lb and 65-384lb cylinders applied over 96.5 hrs to cool bed &lt;800F determined with Type J T/C on a rod. Elapsed time ESP to start cooling 8 hrs with bed 6 to 8 feet above bottom of primary airports                  Leak in US-5 washed adjacent tube US-6 to failure resulting in a 1 3/4" crack                  US-6 repaired using 30" Dutchman &amp; US-5 ground out and weld repaired. Discovered during repairs another leak in US-5 above the 1<sup>st</sup> &amp; several leaks at SH attachments                  Weld failure at fin attachment                  Plan to replace tubes at door openings in 2006, and further inspection of attachment welds.                  Last inspection April 2005. Acid cleaned 2001 with HCl.</p>
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<p><b>FALL 2005 - 29</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>    <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>    <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Critical Incident No. 632</b>  <b>Abitibi Consolidated, Fort Frances, Ontario</b>                  Recovery Unit No. 1. B&amp;W Contract No. 67550. Startup 1971                  3.3 million ppd solids. Steam flow 350,000 lb/hr. Operating at 875 psig &amp; 825F. Design at 1000 psig. 2 drum boiler/ large economizer                  April 30, 2005  <b>Furnace Screen</b> – 1/2" circumferential crack and local wastage on bottom screen tube at pin attachment weld. 2<sup>nd</sup> screen element from LHSW.                  None. Boiler down for annual maintenance outage.                    No  <b>Critical Incident</b>                  Walkdown inspection after waterwash                  None installed                  Recovery Superintendent found leak during inspection following waterwash. There was no pressure on the boiler.                  No                  No                  Replaced 6-foot section of tube. Attachment welds NDT'd. Repairs to 14 pin attachment welds. Believe leak began when boiler under pressure because of wash at leak opening. Leak occurred at an undercut weld defect. A bent vertical fin that serves as a breaker bar on top screen tube indicates something fell on the screen prior to the cool down period                  Annual inspection of this area, with particular attention to undercut welds.                  Acid cleaned 1983</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>Fall 2005 - 30</b></p> <p><b>Location:</b></p> <p><b>Unit:</b></p> <p><b>Size:</b></p> <p><b>Incident Date:</b></p> <p><b>Leak/Incident Loc:</b></p> <p><b>Downtime hrs due to leak/total:</b></p> <p><b>ESP?</b></p> <p><b>Classification:</b></p> <p><b>How discovered:</b></p> <p><b>Leak detection:</b></p> <p><b>Sequence of events:</b></p> <p><b>Bed cooling:</b></p> <p><b>Wash adjacent tube:</b></p> <p><b>Repair procedure:</b></p> <p><b>Root cause:</b></p> <p><b>Future prevention:</b></p> <p><b>Last full inspection:</b></p>	<p><b>Critical Incident No. 633</b></p> <p><b>Rayonier Performance Fibers, Jesup, GA</b></p> <p>No. 5 Recovery boiler. B&amp;W Contract PR-153. Startup 1972          3.3 million ppd solids. Steam flow 549,000 lb/hr. Operating at 650 psig and 750F. Design at 750 psig. @ drum boiler/ large economizer. Membrane wall furnace</p> <p>March 25, 2005</p> <p><b>Front wall/roof tube &amp; sidewall riser tubes –</b></p> <p>Leak # 1 – 3 ½” circumferential crack on riser tube ~ 1” above 1<sup>st</sup> RHSW header          Leak # 2-4” longitudinal crack on OD of front wall/roof bend. Located at junction of corner seal box and scallop bar.          Leak # 3 – 3” circumferential crack on riser tube, 2nd RHSW header</p> <p>Total downtime 74 hours</p> <p>No</p> <p><b>Critical Incident</b> [leaks on outside of furnace but close to the refractory corner seal through which water could enter the furnace]</p> <p>Leak # 1 – Operator walkdown. Leak # 2 – Hydro test. Leak # 3 – Contractor observation.</p> <p>None installed</p> <p>Leak # 1- approx 24 hr after startup, Shift Supervisor walking down boiler heard/felt steam coming from upper RHSW/SW corner. Steam/feedwater differential confirmed leak. Removed insulation and confirmed leak from riser tube external to the penthouse. Orderly shutdown performed.          Leak # 2-found during hydro of leak # 1 repair.          Leak # 3-boiler warming up and at 400 psig when insulation contractor found leak that was not leaking during either of previous hydros.</p> <p>No</p> <p>No</p> <p>Stress Assisted Corrosion - Leaks 1 &amp; 3 – Multiple cracks found adjacent to repairs. Cracks found in 3 more riser tubes of similar geometry (risers connected to headers with short distance to tight 90° bends to route risers outside of penthouse casing). Five riser tubes cut out and replaced. Leak 2 – Crack ground out and repaired. Cracks also found on other corner at same relative location.</p> <p>Leak # 1 and 3 – Corrosion fatigue. Leak # 2 – mechanical fatigue</p> <p>Increased inspection frequency by RT for future outages</p> <p>Last NDT inspection 2005. Acid cleaned with HCl 1999.</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 - 31</b></p> <p><b>Location:</b></p> <p><b>Unit:</b></p> <p><b>Size:</b></p> <p><b>Incident Date:</b></p> <p><b>Leak/Incident Loc:</b></p> <p><b>Downtime hrs due to leak/total:</b></p> <p><b>ESP?</b></p> <p><b>Classification:</b></p> <p><b>How discovered:</b></p> <p><b>Leak detection:</b></p> <p><b>Sequence of events:</b></p> <p><b>Bed cooling:</b></p> <p><b>Wash adjacent tube:</b></p> <p><b>Repair procedure:</b></p> <p><b>Root cause:</b></p> <p><b>Future prevention:</b></p> <p><b>Last full inspection:</b></p>	<p><b>Critical Incident No. 634</b></p> <p><b>Weyerhaeuser Company, Campti, Louisiana</b></p> <p>No. 1 Recovery Boiler. B&amp;W Contract PR188. Startup 1974</p> <p>1.58 million ppd solids. Steam Flow 220,000 lb/hr. Operating at 600 psig &amp; 759F. Design at 700 psig.</p> <p>July 19, 2005</p> <p><b>Upper Furnace</b> - a hole ~ ¼" diameter in tube No. 11 of nose arch. Tube bends to form a screen directly upstream of the boiler bank tubes; hole at ~ 6 ' above the bend.</p> <p>Total downtime No. 1 RB (liquor to liquor) – 125.1 hours</p> <p>ESP initiated</p> <p><b>Critical Incident</b></p> <p>Operator making rounds noticed an unusual noise.</p> <p>None installed</p> <p>Operator making routine walkdown with IK's off heard an unusual sound in the 4<sup>th</sup> floor and 7<sup>th</sup> floor ash hoppers; hoppers were dry. Boiler operator informed shift supervisor of unusual noise. Supervisor &amp; control room operator examined instrumentation readings; there was no indication of leak. Within a period of 8 minutes, the superintendent, asst superintendent, shift supervisor and 3<sup>rd</sup> asst inspected 7<sup>th</sup> floor hoppers which were dry, confirmed the noise, found noise intensity increased at higher elevations and received the boiler conductivity test results that indicated presence of a leak; the boiler was ESP'd and control room evacuated.</p> <p>Incident report chronicles activity to restore production commencing with actions to startup RB No. 2, both sets evaporators, lime kiln, and No. 1 paper machine. No. 2 hog fuel boiler was operated to hold header pressure.</p> <p>Southland Fire &amp; Safety began addition 10 hrs after ESP (bed height 2-3 ft above bottom primary airports) of 26,250 lbs sodium bicarbonate (with Nitrogen) over a 14-hour period in 2 applications. 6 RTD probes through primary airports showed 800F after 10 hrs of cooling with 47 units bicarbonate. Found hot spot 5-6 hrs later (1254F) &amp; Southland returned 32 hrs after ESP for further cooling using 30 units bicarbonate. 50 hrs after ESP, highest temp 910F. At 60 hrs, found another hot spot reading of 1087F. Bed allowed to cool naturally. Credit 48 hrs saved from using bicarbonate.</p> <p>No</p> <p>Installed a 30" Dutchman</p> <p>Failed field tack weld where shield attached to tube pulled a hole in the tube.</p> <p>Investigating shield installation procedure and investigating alternatives</p> <p>Area inspected January 2005 using visual, UT &amp; IRIS immersion testing</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 - 32</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>    <b>Sequence of events:</b>          <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>    <b>Root cause:</b>      <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Critical Incident No. 635</b>  <b>Longview Fibre Co., Longview, Washington</b>          No, 22 Recovery Boiler. ABB-CE Contract No. CA89102. Startup 1992.          3.7 million ppd solids. Steam flow 643,000 lb/hr. Operating at 800 psig &amp; 750F. Design at 1065 psig. Single drum/ large economizer          June 24, 2005  <b>Upper Furnace</b> – three circumferential cracks ~ 1” long. One on front wall, right side, and 2 on right sidewall, rear of center, within 6 inches of chromized to carbon steel tube weld line 35 feet above the floor.          Total downtime 96 hours.          No. Boiler was out of service.  <b>Critical Incident</b>          Operators observed water flowing down wall          Hercules Leak Trac system (combined mass and chemical balance) installed 2002. Only water mass balance in operation and phosphate analyzer out of service for several weeks. Mass balance severely de-sensitized because of nuisance alarms during load swings          Operator inspecting furnace prior to beginning water wash for annual inspection observed water running down the wall from just above tertiary air ports. The 3 tubes were cut out revealing heavy waterside deposits in each. Video probe inspection (requiring drilling a hole or cutting a window in tube wall) of 25 random choice tubes revealed no sign of heavy deposits; there was light cold-side deposition within +/- ~ 4 feet of weld line. Digital radiography identified 16 additional tubes with heavy deposits, of which several were removed for Wet Fluorescent Magnetic Particle Testing that revealed internal cracking in three tubes.          No          No          As a result of testing, all 19 tubes with heavy deposits were removed and replaced. Two additional tubes also removed and replaced to facilitate repairs          Caustic gouging under deposits of primarily iron and copper led to tube thinning. Two labs disagreed on mechanism of failure. One reported thermal fatigue and a second reported ‘creep’ in very low carbon steel was the cause.          Chemical cleaning scheduled for mid-October 2005          Area visual and UT inspected June 2004 during annual inspection. Chemically cleaned July 1999.</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 - 33</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>    <b>Leak detection:</b>  <b>Sequence of events:</b>  <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>    <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Critical Incident No. 636</b>  <b>International Paper, Prattville, Alabama</b>  Recovery Boiler RB1. CE Contract No. 1965. Startup 1967  @.2 million ppd solids. Steam flow 320,000 lb/hr. Operating at 850 psig &amp; 830F. Design at 900 psig. 2 drum boiler/DCE (tangent tube furnace construction)  June 7, 2005.  <b>Upper Furnace</b> – pinhole leak in an old, external attachment weld approx 12” below #4 sootblower in right wall tube  Outage time due to leak 59.5 hours and total outage time 66.5 hours    No  <b>Critical Incident-</b> leak external but water could pass through the tangent wall tubes)  Mechanic working on #4 sootblower noticed steam leak and notified Steam &amp; Power management    Hercules Leak Trac system in operation did not detect leak, as it was too small.  Leak was blowing on outside and decision made to shutdown in orderly manner.  No  No  Pinhole ground out and repaired. PT of ground weld showed no cracking. Hydro revealed leak in thin spot of SH loop. This and another thin loop were replaced; also Dutchman installed where tube thinned.  Stress assisted corrosion cracking at attachment weld. SH tubes thinned by IK rubbing on tube.    Last inspection October 2004. Chemically cleaned in September 2001</p>
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<p><b>FALL 2005 - 34</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>  <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>      <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>  <b>Future prevention:</b>    <b>Last full inspection:</b></p>	<p><b>Critical Incident No. 637</b>  <b>Smurfit Stone Container Corp, West Point, Virginia</b>  Local Unit ID – No. 167. Recovery Boiler No. 4. CE Contract No. 21975. Startup 1977.  2.7 million ppd solids. Steam Flow 427,000 lb/hr. Operating at 1225 psig &amp; 900F. Design at 1360 psig. 2 drum boiler.  May 3, 2005  <b>Upper Furnace</b> – 5/8” x 1/4” crack in wall tube forming opening for IK # 21.  Total downtime liquor to liquor 108 hours    Yes  <b>Critical Incident</b>  Recovery 1<sup>st</sup> Asst. doing walkdown heard noise like a sootblower still blowing.  None installed  On hearing unusual noise, 1<sup>st</sup> Asst asked Operator to stop blowing all sootblowers. No. 21 blower was isolated but noise continued. Main steam supply stop valve for blowers closed; noise continued. Asst went to control room via emergency Stairwell and told Operator to ESP boiler. Elapsed time from hearing sound to ESP initiation ~ 25 minutes  No  Probable  Installed dutchman. Overlaid adjacent tube discovered during filling boiler for hydro  Steam and condensate leaking through lance tube because of bad poppet valve  Infra red temperature gun provided to Recovery 1<sup>st</sup> and 2<sup>nd</sup> Assts. to check sootblowers when making rounds once a day. Poppet valve leak through would not be identified by sound when making rounds two times per shift.  Last inspection October 2004.</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 - 35</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>    <b>Sequence of events:</b>    <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>  <b>Future prevention:</b>    <b>Last full inspection:</b></p>	<p><b>Critical Incident No. 638</b>  <b>Georgia-Pacific, Port Hudson, Louisiana</b>                  CE Contract 22040. Startup 1976                  4.4 million ppd solids. Steam flow 642,000 lb/hr. Operating at 850 psig and 825F. Design at 1080 psig. 2 drum boiler/ large economizer with decanting hearth                  June 25, 2005  <b>External Water Source</b> – primary port area inspected after 6-hour wait. Water source believed to originate with 1<sup>st</sup> helper on the floor above who was washing up liquor guns on the floor after being steamed out.                  Total downtime 42 hours                  ESP Initiated.  <b>Critical Incident-</b> wash water entering primary windbox                  Water seen to be entering primary windbox during boiler walkdown                  Alert Systems Recovery Boiler Advisor System installed 1997 in operation did not detect a leak.                  There was no leak                  Shift foreman noticed water in windbox and a leak was suspected. Operator notified and ESP initiated. Boiler was on gas for 6 hours prior to burning liquor before incident using 3 burners below and 4 above liquor guns. There was no smelt bed in the furnace.                  No                  Not applicable                  Not applicable                  Not applicable                  Hole in primary port fixed. Fixes boiler curbing and flashing to prevent external water entering windbox. Review meetings with all shifts about washing up and leaving hoses unattended during cleanup                  Last inspection August 2004. Chemical cleaning in 2001.</p>
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<p><b>FALL 2005 - 36</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>    <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Critical Incident No. 639</b>  <b>Smurfit-Stone Container Corporation, Brewton, Alabama</b>                  No. 2 Recovery Boiler. B&amp;W Contract PR-79. Startup 1963.                  1.2 million ppd solids. Steam flow 186,000 lb/hr. Operating at 860 psig &amp; 830F. Design at 975 psig. 2 drum boiler/ DCE                  May 30, 2005  <b>Lower Furnace</b> – very small pinhole leak under a flat stud attachment weld in at top of left sidewall secondary airport opening for #6 oil gun (tube # 22)                  Downtime due to leak 30 hours/ total outage 32 hr 10 min                  ESP initiated. Mill has standard 8 hour waiting period  <b>Critical Incident</b>                  Helper noticed a very small amount of steam entering the rod out port at the #6 oil gun                  No                  ESP initiated “to be on the safe side” after 1) 2<sup>nd</sup> helper saw a small amount of steam, 2) Recovery Operator could not see steam, 3) Shift Supervisor was not positive he saw steam 4) person on call for the area thought he saw steam, 5) and a ¼” tube extended into the port opening seemed to get wet on the end. A leak could not be found with a 45 psig air pad applied after cool down. Started filling boiler with hot water which disclosed the small leak.                  No                  No                  Area ground out and pad welded                  Improper weld procedure                  Last inspection May 2005. Chemical cleaned in 1983</p>
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**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 - 37</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    Downtime hrs due to leak/total:  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>    <b>Leak detection:</b>  <b>Sequence of events:</b>    <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Critical Incident No. 640</b>  <b>Smurfit-Stone Container Corporation, Brewton, Alabama</b>  No. 2 Recovery Boiler. B&amp;W Contract PR-79. Startup 1963.  1.2 million ppd solids. Steam flow 186,000 lb/hr. Operating at 860 psig &amp; 830F. Design at 975 psig. 2 drum boiler/ DCE  June 11, 2005  <b>Lower Furnace</b> - small pinhole leak at top of left sidewall secondary airport opening for tube # 22. Leak at same place as previous report except on opposite side of tube.  Downtime due to leak 72 hours/15 min / total outage 74 hr 10 min    ESP initiated. Mill has standard 8 hour waiting period  <b>Critical Incident</b>  Operator noticed a small amount of steam entering the airport and being pulled back into the furnace  No  Boiler ESPd 5 minutes after helper saw water &amp; steam in port opening. Operator confirmed observation. Boiler ESPd.  No  No  Four foot tube section cut out and replaced. Welds were x-rayed.  Improper weld procedure used for a previous repair    Last inspection May 2005. Chemical cleaned in 1983</p>
<p><b>FALL 2005 - 38</b>  <b>Location:</b>  <b>Unit:</b>    <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    Downtime hrs due to leak/total:  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>    <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>          <b>Root cause:</b>  <b>Future prevention:</b>  <b>Last full inspection:</b></p>	<p><b>Critical Incident No. 641</b>  <b>Interstate Paper, Riceboro, Georgia</b>  Local Unit ID 21996. B&amp;W Contract PR-99. Startup 1968. Component with leak supplied 1990 by B&amp;W  1.4 million ppd solids. Steam flow 219,000 lb/hr. Operating at 650 psig &amp; 760F. Design at 725 psig. 2 drum boiler/large economizer  April 11, 2005  <b>Furnace Floor</b> –crack parallel to the butt weld in tube 51 of 62 at a distance 1 ½ inch downstream of the weld in the floor where original floor panels with 0.300" wall tubes were welded to the rear wall panels of 0.203" wall.  Total downtime due to leak 294 hrs    ESP initiated. Current policy is to stay out of recovery area 24 hours  <b>Critical Incident</b>  Recovery Boiler Operator observed a high furnace pressure excursion  None installed  Recovery Boiler Operator observed on the chart that there had been a short term, high furnace pressure spike to 2.5 inches WG. Boiler key operating parameters were reviewed with no evidence of a leak. However, previous spikes and ESP experience indicated the most probable cause of the spike was a leak and Recovery Crew Leader initiated an ESP.  No  No  21 of 62 welds were replaced with 2 ft tube sections. Excessive "push through" was identified in 13 tubes by RT and an additional 7 with cracks by Shear Wave UT. One additional tube section showing no defects was removed for examination as a control.  Furnace pressurization lifted the primary airport dampers above the port rodders and each damper had to be repositioned.  Metallurgical analysis established cyclic fatigue cracking of tube internally due to formation of steam blanketing downstream of a "push through" butt weld  A new floor will be installed in November 2005. There will be no welds in the floor.  Weld area shear wave tested February 27, 2005</p>

**BLRBAC SUMMARY OF RECOVERY BOILER INCIDENTS  
MEETING FALL 2005**

<p><b>FALL 2005 - 39</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>  <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>  <b>Leak detection:</b>  <b>Sequence of events:</b>    <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>  <b>Root cause:</b>    <b>Future prevention:</b>    <b>Last full inspection:</b></p>	<p><b>International Paper, Courtland Mill, Alabama</b>                  No. 2 Recovery Boiler. B&amp;W Contract PR-180. Startup 1979. B&amp;W supplied component that leaked in 2004.                  4.0 million ppd solids. Steam flow 480,000 lb/hr. Operating at 450 psig and 550F. Design at 550 psig. 2 drum boiler/ DCE                  June 28, 2005  <b>Smelt Spout</b> – 3 spouts failed at locations near the smelt flow “tide line”. Spouts operate with cooling water flow of 25 gpm at 175F                  Total downtime due to leak 35.2 hours                    No  <b>Non-critical Incident</b>                    Mass balance system in operation from 1994. Detection in this instance is not applicable                  Spout #3 failed on May 9; opening was plugged. Spout #4 leaking on June 25 and boiler shutdown. Discovered small leak in Spout #2.                  No                  No                  Spouts replaced. #1 spout OK and returned to service.                  Spouts appear to have external cold end corrosion. There was no clear indication of weld failure at the end of the spouts.                  Inconel weld overlay on the end plate. Spouts flame sprayed for 7 inches from cold end. Ducon scrubber vessel and piping inspected and cleaned of deposits; this improved the draft on the spouts                  Last inspection July 2004. Chemical cleaning May 2001</p>
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<p><b>FALL 2005 - 40</b>  <b>Location:</b>  <b>Unit:</b>  <b>Size:</b>    <b>Incident Date:</b>  <b>Leak/Incident Loc:</b>    <b>Downtime hrs due to leak/total:</b>  <b>ESP?</b>  <b>Classification:</b>  <b>How discovered:</b>    <b>Leak detection:</b>    <b>Sequence of events:</b>  <b>Bed cooling:</b>  <b>Wash adjacent tube:</b>  <b>Repair procedure:</b>    <b>Root cause:</b>  <b>Future prevention:</b>    <b>Last full inspection:</b></p>	<p><b>Weyerhaeuser, Flint River Operations, Oglethorpe, Georgia</b>                  No. 1 Recovery Boiler. B&amp;W Contract PR-198. Startup 1980                  4.8 million ppd solids. Steam Flow 643,000 lb/hr. Operating at 900 psig &amp; 825F. Design at 1175 psig. 2 drum boiler/large, multi-pass. crossflow economizer                  May 19, 2005  <b>Economizer</b> – pinhole crack in handhole cap seal weld with origin as 1” crack in the root pass, second handhole plug from right side, first header from right sidewall, rear set of lower economizer headers. One in a series of seal weld leaks; last one January 2005                  Total downtime 32 hrs 20 min                    No  <b>Non-critical Incident</b>                  Operators washing out economizer header found water spraying from the economizer header when boiler was off-line to clean green liquor piping. Pressure had dropped to ~ 300 psig .                  Leak System installed in 1996 using DCS Steam/Feedwater differential did not indicate leak. Volume too small. System has detected last 2 leaks the boiler.                  Inspected and found water spraying from the header                  No                  No                  Seal weld ground out. And replaced per weld repair plan. Wrapped with insulation to slow cooling.                  Crack in the seal weld appears to have started at a tack weld                  Change procedure per B&amp;W recommendations to ensure a <u>full</u> 3/8 inch seal weld regardless of number of passes, increased preheat from 350F to 500F, and stopped using seal welds. Jig used to hold plug in place.                  Last inspection October 2004. Caustic boilout in 1994</p>
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## **TAPPI Steam & Power/Energy Management Committee**

### Purpose/Charter:

Develop and disseminate information relating to the economic selection, specification, installation, operation and maintenance of overall pulp & paper mill heat and power systems – including steam generation and distribution, power generation drivers, all fuels and the proper collection and disposal of combustion by-products and spent fuel, mill condensate systems, and the auxiliaries and instrumentation associated with these systems – and the application of economically effective energy management.

### Officers:

- Chairman – Bo Oscarrson – Fluor Daniel
- Vice Chair – Paul Conner – Southern Co.
- Secretary – Norris Johnston – Hercules
- Membership Chair – Jim Dickinson – B&W

### Membership:

82 members

- 18 mill
- 16 suppliers
- 48 consultants

### Subcommittees:

- Recovery Boilers (37) – Andy Jones – IP
- Power Boilers (12) – Ed Mockridge – McBurney
- Water Treatment (10) – Mark Sargent – IP
- Energy (23) – Tom Harriz – Jacobs

### Activities:

- Develop TIP's (Tech. Info. Papers/Proc.)
- Support TAPPI Conferences with technical program items, coordination

### Recovery Boiler – Current Activities:

- Recovery Boiler Performance Calculation Forms
  - Long Form
  - Short Form
- Effect of Composition on the First Melting Temperature of Fireside Deposits in Recovery Boilers
  - From a H. Tran paper
  - Making into a TIP
- K and Cl Measurement and Control in the Pulping & Recovery Cycle
  - TIP completed
  - In review/available soon

**Recovery Boiler – Past/Recently Released TIP's**

- Composite Floor Tube Inspection Guidelines
- Recommended Test Procedure for Black Liquor Evaporators
- Tube Rolling Procedures and Quality Guidelines
- Stripping of Kraft Pulping Process Condensates – Regulations, Design & Operations
- Collection and Burning of Concentrated NCG's – Regulations, Design, Operation

**Recovery Boiler – TIP's Being Considered:**

- NCG's in Recovery Boilers
- Acid Cleaning Guidelines
- Use of Borate in the Recovery Cycle
- Factors Which Cause Fouling
- Sootblower Fundamentals – workings of a SB
- AF&PA Studies
  - Floor Tube Failure Study
  - Explosion Damage Study
- High Solids Firing

**Meetings:**

- Twice/year
- Fall Technical Conference + Spring

**Requirements to Join?**

- TAPPI Member
- Interest in working on activities of the Subcommittees

**-ADVANCING TECHNOLOGY AND PROFESSIONAL ACHIEVEMENT IN THE PAPER  
AND RELATED INDUSTRIES**



Please reply to: K. Paul Conner  
Southern Company  
PO Box 1069  
Wilsonville, AL 35186

**To: Steam & Power/Energy Management Committee Membership**

**Subject: Spring- 2004- Meeting Notice**

The TAPPI Steam & Power/Energy Management Committee Spring meetings will be held on Wednesday, April 7, 2003. The meetings will be held at the Atlanta Airport Crown Plaza, Atlanta, Georgia in conjunction with BLRBAC. Phone numbers are -404-768-6660 or 1 800-2CROWNE. Meeting Schedules and agendas are attached. The other rooms will be announced. Lunch will be on an individual basis. Please send any notices of interest and follow-up meeting minutes to pconner@southernco.com or fax at (205) 670-5843.

Note that we will be voting on the Merger of the Process Energy Utilization Committee and the Power Generation/ Energy Procurement committee.

The meetings are scheduled as follows:

<b>Committee</b>	<b>Room</b>	<b>Meeting Date and Time</b>
Steering-	<b>Bogart</b>	Wednesday, Apr. 7, 10:00- 11:30 am
Full Committee	<b>Bogart</b>	Wednesday, Apr. 7, 1:00- 1:30 pm
Subcommittees	To Be Announced	Wednesday, Apr. 7, 1:30- 5
Reconvene	<b>Bogart</b>	Wednesday, Apr. 7, 5- 6pm

**Committee members are STRONGLY ENCOURAGED to bring guests to these meetings. Please feel free to copy those who might be interested, and advise me of their attendance. Anyone interested in attending BLRBAC should see the meeting notice information at [www.blrbac.org](http://www.blrbac.org).**

Sincerely,

K. Paul Conner  
Secretary, Steam & Power/Energy Management Committee  
Phone (205) 670- 5063

Enc. Full Committee Agenda  
Steering Committee Agenda  
Sub Committee Agendas



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**TAPPI STEAM & POWER/ENERGY MANAGEMENT COMMITTEE**  
**MAIN COMMITTEE AGENDA**  
Wednesday, April 7, 2004  
**Atlanta Airport Crown Plaza**

1. Call to Order      1:00pm      Chris Suggs
  - A. Distribute Agenda
  - B. Route Attendance Sheets
  - C. TAPPI Antitrust Policy Statement
  
2. Routine Business
  - A. Membership Report      Jim Dickinson
  - B. Subcommittee Personnel Assignments      Jim Dickinson
  - C. Subcommittee Meeting Arrangements      Chris Suggs
  
3. 2004 Fall Technical Conference Program Update      Jarmo Kaila
  
4. Old Business      Chris Suggs
  - A. Approve Minutes of Previous Meeting
  - B. Vote on Merger of PEU and EP/PG Subcommittees
  - C. Other
  
5. New Business      Chris Suggs
  - A. Committee Guidelines Review
  - B. New Officer Recommendations
  - C. Other
  
6. Technical Points of Interest      Bo Oscarsson
  
7. Subcommittee Breakout Meetings      1:30pm
  
8. Full Committee Reconvene      5:00pm      Chris Suggs
  - A. Antitrust Reminder
  
9. Subcommittee Reports      Chairmen
  
10. Next Meeting      Chris Suggs
  
11. Adjourn
- 10.

**TAPPI STEAM & POWER/ENERGY MANAGEMENT COMMITTEE  
STEERING COMMITTEE AGENDA**

Wednesday, April 7, 2004

**Atlanta Airport Crown Plaza**

1. Call to Order      10:00am      Chris Suggs
  - D. Distribute Agenda
  - E. Route Attendance Sheets
  - F. TAPPI Antitrust Policy Statement
  
2. Membership Activities      Jim Dickinson
  - D. Membership Report
  - E. Act on Membership Applications
  - F. Review Status of Inactive Members
  - G. Roster Reconciliation
  - H. Other
  
3. Subcommittee Activities      Chris Suggs
  - A. Merger of PEU and EP/PG Subcommittees
  - B. Subcommittee Personnel Assignments
  - C. Committee Guidelines Review
  - D. Other
  
4. Certificates of Appreciation      Chris Suggs
  
5. 2004 Fall Technical Conference Program Update      Jarmo Kaila
  
6. 2005 Fall Technical Conference Program Chairman      Bo Oscarsson
  
7. Old Business      Chris Suggs
  - A. Approve Previous Meeting Minutes
  - B. Review Action Items From Previous Meeting
  - C. Review Committee Guidelines
  
8. Committee Assignments      Chris Suggs
  - A. Item Review
  - B. Recognition for Completed CA's
  - C. Other
  
9. New Business      Chris Suggs
  - A. New Officer Recommendations
  - B. Other
  
10. Next Meeting
  
11. Adjourn

**TAPPI STEAM & POWER/ENERGY MANAGEMENT COMMITTEE  
Recovery Boiler Subcommittee**

**AGENDA**

Wednesday, April 7, 2004  
**Atlanta Airport Crown Plaza**

1. TAPPI Antitrust Statement
2. Assignment of Secretary
3. Route Attendance Sheets
4. Introductions
5. Review Previous Minutes/Corrections
6. Old Business
  - a. "Recovery Boiler Performance Calculation – Long Form" - Andy Jones - Status
  - b. T625 CM-85 "Analysis of Soda and Sulfate Black Liquor Chemical Properties" - Karl Morency - Status
  - c. "Effect of Composition on the First Melting Temperature of Fireside Deposits in Recovery Boilers" – Preston Morgan - Status
  - d. Potential TIPs
    - i. Residual Alkali Test Status - Vic Uloth
    - ii. Acid Cleaning - Andy Jones/Mark Sargent
7. New Business
  - a. Recommendations for Technical Points of Interest Presentation for Fall 2004 Meeting
  - b. Recommendations for Technical Information Papers

**TAPPI STEAM & POWER/ENERGY MANAGEMENT COMMITTEE  
POWER BOILER Subcommittee**

**AGENDA**

Wednesday, April 7, 2004  
**Atlanta Airport Crown Plaza**

**1. Call to Order:**

- A. Distribute Agenda
- B. Route Attendance Sheets
- C. TAPPI Antitrust Policy Statement
- D. Selection of Meeting Secretary

**2. Introduction of Members and Guests**

**3. Old Business:**

- A. Approval of Fall 2003 Subcommittee Meeting Minutes
- B. Review Active Committee Assignments
  - Fluid Bed Data Base
  - Guidelines for Pulp & Paper Mill Fuels Specifications
  - Biomass Boiler Performance Test Procedure

**4. New Business:**

- A. New Committee Assignments
- B. 2004 Engineering Conference
- C. Miscellaneous
  - Suggestions for Future Projects and Programs

**5. Technical Points of Interest**

**6. Other Discussion**

**7. Next Meeting**

**8. Adjournment**

## Water Treatment Subcommittee

Wednesday April 7, 2004

### Agenda

1. Call to Order
  - TAPPI Antitrust Policy Statement
  - Distribute Agenda
2. At the Fall 2003 meeting the group revised the “scope statement” for the Water Treatment Subcommittee as follows:

**Original:**

Objective: To develop and disseminate information relating to the management of water quality throughout the power plant cycle. To include boiler feedwater, condensate handling, cooling and other water supplies.

**Revised:**

Objective: To develop and disseminate information relating to the management of water quality throughout the power plant cycle. This includes the management of water supplies, boiler feedwater, condensate, cooling water, and industrial cleaning.

3. Review remaining CA's
  - “Water Quality and Monitoring Requirements for Paper Mill Boilers Operating with Softened Water Makeup”. Norris Johnston, TGC. Future work is to convert this paper to a TIP.
  - “Energy Optimization as it relates to Boiler Water Treatment”. George Totura, TGC. Future work is to convert this paper to a TIP.
  - “Flow Accelerated Corrosion in the Pulp and Paper Industry” is new. Jim Robinson is the TGC. The committee plans a potential TPI for this topic and eventually a Technical Information Paper.
  - “The A-B-C's of Ion Exchange” is new. Richard Istre, TGC, will prepare a draft by Spring 2004 Committee meeting.
  - “Stress Assisted Corrosion” is new. Jim Robinson, TGC, will interface with Sandy Sharp, MeadWestvaco, and the D.O.E. on this three-year research project.
  - “Steam Purity” is new. Jim Robinson, TGC.
  - “Condensate Monitoring and Control” is new. Norris Johnston, TGC.
  - Jack Horvath will seek co-authors from a mill and from water treatment consultants to assist in the development of a paper for Fall 2004 – the topic to be “chemical cleaning frequency.”

- Norris Johnston will seek a Work Item Number for conversion of the completed CA on “Guidelines for Boilers Operating on Softened Water” to a TIP.
- Norris Johnston will seek a Work Item Number for review of the TIP: “Design Engineers Decision Tree: Paper Mill Boiler Feedwater”

4. New Business

- Initiate review of TIP 0416-05, “Response to contamination of high purity boiler feedwater”. Assign to....
- Initiate review of TIP 0416-07, “Evaluating reverse osmosis for treating make-up to the boiler feedwater in a pulp and paper mill”. Assign to....

5. Future interest topics for committee work or Technical Points of Interest

- Cooling Towers in the Paper Industry, general topic of interest

○ **Adjourn**

Agenda  
**Energy/Process Energy Utilization Subcommittee**  
**Of the Steam & Power/Energy Management Committee**  
Wednesday, April 7, 2004  
Atlanta, GA

1. Call to Order
2. Review of TAPPI Anti-Trust Policy
3. Meeting agenda
4. Introductions and Attendance
5. Old Business
  - A Adopt a new Subcommittee mission statement:

The following text was proposed at the Oct 26, 2003 meeting in Chicago:

*To develop and disseminate information relating to design, application, and operations in the following areas:*

- *Power generation drive equipment and auxiliary drives, the economic and technical aspects of energy procurement and sales, including fuels, electric power, and heat.*
- *Energy policies affecting price and availability.*
- *Power plant conceptual thermal cycle design and integration.*
- *Economical and effective energy management technology for pulp and paper mill systems, which use heat and power, including steam and condensate systems and energy consumption management.*

B Fall 2004 Technical Program Status – Paul Tucker

6. Technical Discussion
  - A State of the Nation's energy
7. New Business
  - A Path forward for the Energy Subcommittee – implementing the mission
8. Schedule next meeting
9. Adjourn

**CSCRB**

## Emergency Shutdown Committee

**Members:**  
 Aracruz – Fioraal Puig  
 Ibase – Afonso Pereira  
 Jari Celulose – Jesus Sanchez  
 Klabin – Walter Oliveira  
 Rigesa – Narciso Zanatta  
 Ripasa – Hildomar Raimondi  
 VCP – Estanislau Zautautas

**IBASE**

### Sub comitê parada de emergência

Activities

- 1- Recovery Boiler inventory
- 2 – Other activities
- 3 – International Information exchange
- 4 – Events analyse
- 5 – Events presentation.

**IBASE**

### Sub comitê parada de emergência

- 1- Recovery Boilers Inventory.
  - A new survey will be issued in order to evaluate BLRBAC configuration and interlock procedures
  - Results will be presented on 1/2006

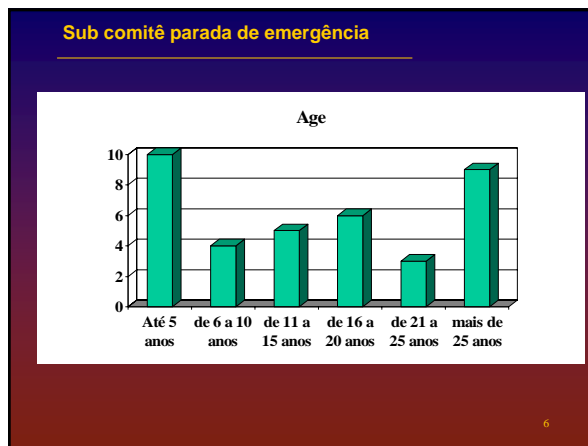
**IBASE**

### Sub comitê parada de emergência

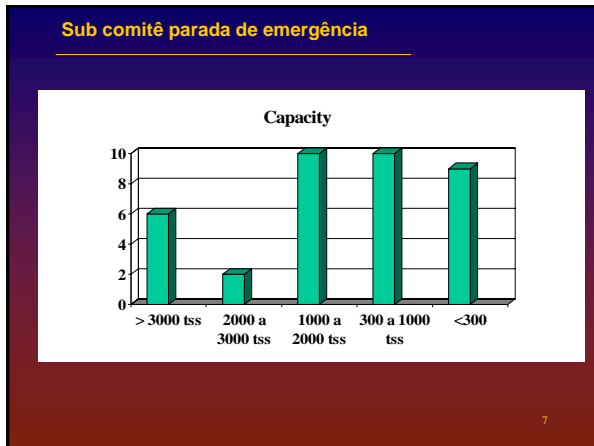
- 1- Recovery boiler inventory
  - 37 recovery boilers
  - 33 in use
  - 2 shut down
  - 2 under erection
  - 13 new or rebuild boilers on the last 3 years
  - Medium age: 16 years
  - Medium Capacity: 1300 tss/day

**IBASE**

#	Empresa	Fornecedor	Start up (ano)	Reforma (ano)	Idade (anos)	Cap. (orig) (t/dia)	Cap. (real) (t/dia)	Pressao (bar)	Temp. (°C)	Vazao (t/h)	Area (m2)	Ratio (tss/m2.dia)
1	Aracruz Celulose	Kvaerner	2001	4	3700	3700	64	450	224	156,7	23,6	
2	Aracruz Celulose	Gotaverken	1991	2002	14	3700	3700	64	455	224	165	22,4
3	Aracruz Celulose	Ahtstrom	1997	2000	8	2200	3100	64	455	455	131	23,7
4	Aracruz - Guabiaba	Gotaverken	1972		33	1100	1200	64	460	160	77	15,6
5	Aracruz - Guabiaba	Babcock & Wilcox	2002		3	1950	1950	64	460	300	125	15,6
6	Bahia Pulp	CBC	1995	1999	10	750	900	63	450	130	43	20,9
7	Bahia Sul Celulose	Gotaverken	1992	2001	13	2100	3200	85	484	420	144	22,2
8	CENBRSA	CBC	1977	2003	28	1370	1800	66	450	250	94	19,1
9	CENBRSA	CBC	1992	2004	13	2050	2500	66	450	422	138	18,1
10	CENBRSA	CBC	2006		N/P	3500	3500	66/88	450/480	524/515	189	18,5
11	ODELPA	Gotaverken	1988		17	160	220	45	425	30	12	18,3
12	Iguacu	Sao Cristovao	1972		33	104	104	16	204	24	17,2	6,0
13	International Paper	B&W	1976		29	187	315	29	350	34,9	14,04	22,4
14	International Paper	B&W	1985		20	793,8	1050	29	350	140	51,85	20,3
15	IPB	Conservit	1981		24	280	280	21	216	40	16	17,5
16	Itapage Artefatos	CBC	1972		33	118	175	42	400	14,5	10,5	16,7
17	Jari Celulose	B&W/Gotaverken	1979	1988	26	1360	1550	85	450	210	89	17,4
18	Klabin-Correa Pinto	CBC	1987		18	500	600	85	480	95	49	16,3
19	Klabin Telemaco	Gotaverken	1977	2000	28	1000	1700	46	430	224	92	18,5
20	Klabin-Oscilio Costa	Gotaverken	1987		18	330	420	41,1	400	24	24,11	17,4
21	Klabin-Oscilio Costa	CBC	1998		7	1100	1000	87,2	483	145	69,1	14,5
22	Lwarcel	CBC	2002		3	700	630	85	480	85	43,9	14,4
23	Norecel	Stein et Robaix	1999		6	270	270	45	450	37	16	16,9
24	Orsa	Gotaverken	1982		23	140	200	19	200	30	12,6	20,6
25	Orsa	CBC	2005		0	400	400	42	400	74	28	15,4
26	Rigesa	B&W	1987		18	250	250	43	370	25,4	18,3	13,7
27	Ripasa	Ahtstrom	1999		6	850	600	64	460	126	47,4	12,7
28	Ripasa	Gotaverken	1972		33	350	520	42	400	72	24,14	21,5
29	Ripasa	Gotaverken	1981		24	350	530	42	400	72	24,14	22,0
30	Ripasa	CBC	2002		3	1100	1100	42	400	180	69,5	15,8
31	Suzano	Gotaverken	1973	2004	32	670	750	50	420	100	49	15,3
32	Suzano	CBC	1987	2002	18	960	960	50	420	145	64	15,0
33	Trombini	B&W/Orcepa	1989	2000	16	140	185	21	400	25	9	20,6
34	VCP - Luiz Antonio	CBC	1991	2005	14	890	1500	64	450	223	66	22,7
35	VCP-Jacarei	CBC	1994		11	1430	1700	88	480	245	103	16,5
36	VCP-Jacarei	CBC	2002		3	2500	2760	88	480	392	149	18,5
37	Veracel Celulose	Kvaerner	2005		0	4000	4000	94	490	620	212	18,9
*	Valores medios	N/P	N/P	N/P	16	1172	1340	54	405	180	71	18





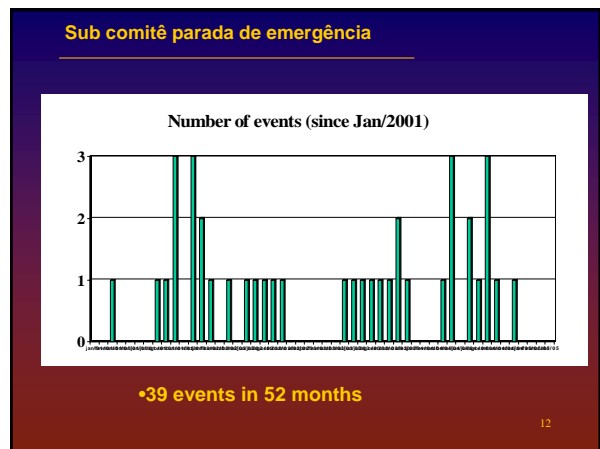


- Sub comitê parada de emergência**
- 2 – Other activities
- A new questionnaire for events will be issued
  - Subcommittee reports will be available at ABTCP homepage
- 
- 8

- Sub comitê parada de emergência**
- 3 – International Information
- 3.1 – BLRBAC (meeting 01/ 05):
- 36 events
    - Localization: 13 eco, 7 Saq, 2 BB, 12 fornalha e 2 events w/ no leakage
    - Detection: most cases by the area operator
    - Critic events: 15
    - ESP's: 14
- 9

- Sub comitê parada de emergência**
- 3 – International information
- 3.2 – SNRBC: 23 mills, 33 recovery boilers, supported by the mills.
- Two subcommittees one for events and other for recommendations
- Boiler capacity: 1257 tss/day with 30 years old boilers
  - There are two recovery boilers under erection.
  - 6 ebvents in 2004
    - 2 eco leakages
    - 2 smelt leakages
    - 1 dissolving tank high density
    - 1 tube leakage detected during annual shutdown
  - Recommendations:
    - Recovery boiler safety
    - CE methodology adequation
- 10

- Sub comitê parada de emergência**
- 4 – Events
- They are classified according following guidelines:
- Critical: Cases where water leakage could enter in contact with smelt in any quantity.
  - Not critical: Cases where water leakage could not enter in contact with smelt.
  - Dissolving tank explosion.
  - Accident: Cases where the equipment or the equipment crew were in danger.
- 11



**Sub comitê parada de emergência**

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**Events List**

Resumo de incidentes em Caldeiras de Recuperação - 1/2004 (atualizado em 12/05/2005)

Empresa	Seq	Data	Relatório	Apresentacao	Classificação	Descrição Incidente
Bahia Pulp	01/05	01/10/04	Não	Não	Acidente	Feed watter contamination
Bahia Sul	02/05	12/12/04	Não	Não	Acidente	Fire at RB building

13

**Sub comitê parada de emergência**

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**5 – Events presentation**

- Bahia Pulp: Accident – feed water contamination with black liquor: october/2005
- Klabin Telémaco Borba: critical –crack in a smelt spout tube : October/2005
- Jari: not critical – Superheater tube faillure: October/2005
- Bahia Sul: Accident – Fire inside recovery boiler building

*Maio/2005*

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