Technical Committee on Single Burner Boilers

Date: June 12, 2009

To: Technical Committee on Single Burner Boilers

From: Denise Beach, Staff Liaison/Senior Engineer

Re: Agenda Package – June ROP Meeting

Enclosed is the agenda package for the June 24, 2009 web/teleconference for the Report on Proposals (ROP) meeting. Please ensure that you have reviewed the proposals in advance, not only for technical merit, but also if you believe there are any other committees to which duplicate proposals should be sent. The agenda and proposals will be posted on the committee webpage.

Some items to have available for the meeting include: Agenda packet with proposals; your copy of NFPA 85; any previous copies of NFPA 85 you may wish to reference. Optional items that are sometimes useful include previous ROP/ROCs if handy.

If you have any questions or comments, please feel free to reach me at (617) 984-7501 or by e-mail at dbeach@nfpa.org. You can reach the SBB TC Chair, John Eibl at (615) 847-6897 or by e-mail at john.j.eibl@usa.dupont.com.

Live Meeting Web Access. TC Members participating via Live Meeting should have received a separate email with instructions on connecting through the web. If you do not have the email, please follow these steps to connect to the meeting:

1. Copy this address and paste into your web browser:  
   https://www.livemeeting.com/cc/nfpa/join

2. Copy and paste the required information:
   Meeting ID: KNP5NZ
   Entry Code: JK5f k:59
   Location: https://www.livemeeting.com/cc/nfpa

3. Dial the conferencing service directly, and enter the participant code shown below:
   Toll-free: +1-8883309941
   Toll: +1-7134810090
   Participant Code: 1036315
Technical Committee on Single Burner Boilers

Web/Teleconference AGENDA

June 24, 2009
1:00 – 5:00 PM

1. Chair's welcome, call to order, and opening remarks at 1:00 pm.
2. Roll-call of Committee Members and Guests
3. Approval of Minutes from the March 2006 Report on Comments Meeting held in Tampa, FL. See E-Committee web page to view.
4. Staff Liaison Report
   A. Review of NFPA Policies and Committee Procedures
   B. Committee membership update (For the period March 20, 2006 – June 5, 2009)

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<tr>
<th>Name</th>
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<th>Change</th>
<th>Date</th>
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<tr>
<td>Courtney Alvey</td>
<td>SE (Principle)</td>
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<td>Peter Pinto</td>
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(M = 33%; SE = 33%; U = 20%; I = 13%)

C. Revision Cycle Review and timeline (Attachment A)

5. Old Business
6. New Business
   A. Review of public proposals (see enclosed Acrobat file)
   B. Creation of Committee proposals

7. Other Items?
8. Date/Location of Next Meeting. (ROC Meeting between March 5 and April 9, 2010)
NFPA 85 Revision Cycle
Fall 2010

NFPA 85 F2010 (last cycle F06) [BCS-AAC]
Intent to enter cycle January 9, 2009
Proposal Closing May 8, 2009 (May 29 orig date)
ROP Published and Posted December 28, 2009
Comment Closing March 5, 2010
ROC Published and Posted August 27, 2010

ROP TC Meetings (between May 8 and August 7, 2009)
FUN ROP (Atlanta) – 2 days May 27-28, 2009
HRS ROP (Quincy) – 2 days June 15-16, 2009
MBB ROP (Quincy) – 2 days June 17-19, 2009

FBB ROP teleconference/Live Meeting July 14, 2009
PFS ROP teleconference/Live Meeting June 25, 2009
SBB ROP teleconference/Live Meeting June 24, 2009
STO ROP teleconference/Live Meeting July 13, 2009
TCC ROP teleconference/Live Meeting TBD

Intent to make motion (ITMAM) closing October 22, 2010
Issuance of standard - NO controversy January 28, 2011 (publ. bit later)
NFPA WSCE Meeting with NITMAM June 4-9, 2011
Issuance of Standard – with controversy July 29, 2011 (published bit later)
MINUTES OF MEETING

Technical Committee on Single Burner Boilers

Double Tree Guest Suites Tampa Bay
3050 North Rocky Point Drive West,
Tampa, FL 33607
March 20, 2006

Attendance:

Principal Members/Staff:
John Eibl – Chair, DuPont Company, TN
Amy Spencer, NFPA, MA

Dale Dressel, Solutia, Inc., MO
Jerry Gilman, SIS-Tech, OH
Franklin Switzer, S-afe, Inc., IN
Jacques Van Heijnigen, Siemens Building Technologies, Inc., IL
J.A. “Red” Wagner, Fireye, NJ
Chris Wille, Coen Company, Inc., CA
Peter Willse, GE Insurance Solutions, CT

Guests:
Ted Jablkowski, North American Manufacturing, CT (TC applicant)
Dan Lee, ABB, OH (last part of day)
Bruce Mickelson, Honeywell, Inc., MN (TC applicant)
Hailon Nottage, Grand Bahama Power Company, Bahamas

1. Call to order. The meeting began at 8:05 a.m. on March 20, 2006.
2. Welcome. The Committee Chair welcomed the members and roll call was taken.
3. Minutes Approval. The minutes from the July 12 and July 14, 2005 ROP teleconference meetings were approved without amendment.
4. NFPA Staff Report. The NFPA Staff Liaison reviewed the meeting procedures and committee membership. Although appointments will be made in March, there are currently 13 members (30 maximum) and the categories are as follows: Insurers (2=15%), Manufacturers (4=31%), Special Experts (4=31%), Users (3=23%).
5. Comments. The public comments were reviewed and acted upon. Committee actions will be presented in the Fall 2006 Report on Comments (ROC) to be sent to all members and submitters of comments in late August 2006. Anyone else who would like to receive a free copy can call our Publications Department at 800-344-3555 or view the ROC via our website at www.nfpa.org. Fundamentals committee actions were reviewed.
6. Old Business - Task Groups. NFPA 85 Task Group to resolve 4.6.3.2.5. b) Independence Task Group: Proposals to change 4.6.3.2.5 (a), (b) and (d). The Task Group created a comment and was thanked for their efforts. The Task Group Chair is Fundamentals Committee member, Thomas George of Marsh USA, Inc. and is made up of members from each of the NFPA 85 TCs. SBB volunteers were Jacques Van
Heijningen and Red Wagner. This also incorporated the concepts of the FI (formerly Section 1.9.3.2.3 in the 2001 edition, which can now be retired.

7. **Task.** After the publication of the 2007 edition of NFPA 85, Jerry Gilman will review Section 7.3.4.2 in the 2003 edition of NFPA 86, and submit a proposal for Section 4.6.3.2.3(2) in the 2004 edition of NFPA 85. It reads as follows:

   **86: 7.3.4.2** The software for the programmable controller shall reside in memory that retains information on loss of system power.

8. **Revision Cycle.** The Single Burner Boilers TC suggested to the TCC that the revision cycle be 4 years. It was thought that 3 years was too short and 5 years was too long.

9. **Future meetings.** There were several issues that might warrant pre-ROP including, unanticipated outcomes with the addition of the logic solver requirements in Section 4.6.3; the potential inclusion of auxiliary fired waste heat boiler; NOx and emission issues; and possibly a chapter reorganization and elimination of redundancy within the chapter for user-friendliness, including consideration of tabularizing Section 5.5.

(12)* The hardware master fuel trip relay shall be of the type that stays tripped until the unit purge system interlock permits it to be reset. Whenever the master fuel trip relay(s) is operated, it shall directly remove all fuel inputs from the furnace in a redundant path with the soft master fuel trip which will trip all outputs to fuel related devices. The master fuel trip relay contacts shall not only trip the fuel headers but all individual fuel related equipment and shall de-energize all spark igniters and all ignition devices within the unit and flue gas path.

A.4.6.3.2.4 (12) The main hardware master fuel trip relay shall be a fail-safe relay with mechanically linked contacts to prevent the reclosing of the normally closed contact if a normally open contact is welded.

Substantiation: The master fuel trip relay is not addressed properly in the Chapter 4, common to all boilers and HRSGs. This proposal intends to make the existing requirements for MBB common to all boilers and HRSGs. The proposal for the Annex A intends to utilize safe relays for the master fuel trip application. These relays meet IEC 947-5-1-I. There are several manufacturers in the market and some relays are tamper resistant.

Committee Statement: The Fundamentals TC feels that this requirement, which comes from the MBB chapter, is more appropriately to be considered by the TC which are responsible for the other boiler sections, i.e. SBB, HRSG, and FBB. The language came from 6.4.2.3.1(A) blocks 3-12. It is not appropriate to pull one requirement from the table into chapter 4 without the input from the other TCs. The TC feels that the equipment chapters contain requirements that address some of the submitter’s concerns, and that the proposal should be forwarded to the other TC’s for use in clarifying the applicable coverage.

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5.3.4.6.3 * Any permanently installed flue gas analyzers shall not present an ignition source hazard.

Substantiation: In 2005 a flammable hydrocarbon mixture formed in a chemical company’s process furnace that was ignited severely damaging the furnace. A power failure placed the furnace off-line and inadvertently permitted the introduction of hydrocarbon material. The investigation determined an in situ zirconium oxide oxygen probe was the source of ignition. These oxygen probes are very common with fired equipment such as boilers. If excessive unburned fuel accumulates from failed light-offs, or if fuel leaked into boiler or hydrocarbons are ingested through fan, it could be ignited by such an ignition source. If an SBB contains a zirconium oxide or other high temperature analyzer, the analyzer should be designed to protect the sample space from the ignition source.

Another option is to have the analyzer powered down prior to startup. Then power up analyzer after boiler successfully started up. However, frequent power cycling of these analyzers degrades analyzer life. Also, it takes several minutes for analyzer to cool down and warm up. Since many Single Burner Boilers are automatic recycling, this option is not feasible.
85- Log #55 BCS-SBB (5.3.6.4.3)  
Final Action: 

Submitter: Tom Russell, Honeywell  
Recommendation: Add new text as follows:  
The design shall not require any deliberate “defeating” of an interlock to start or operate equipment. Whenever a required interlock device is removed temporarily from service, it shall be noted in the log and annunciated. Other means shall be substituted to supervise this interlock function.  
Substantiation: 1. Paragraph 4.5.4 implies implementing a bypass is permitted, where as presently 5.3.6.4.3 prevents any bypass. Also multiple burner boilers (section 6) permit bypasses. This non-agreement is causing confusion.  
2. Without the ability to bypass an interlock, testing and/or maintenance cannot be performed while the equipment is in operation. I believe we should permit the ability to perform testing and maintenance without necessarily removing the unit from operation.  
This is not original material; its reference/source is as follows:  
Copied from NFPA 85 2007 paragraph 6.4.2.2.13. 

85- Log #23 BCS-SBB (5.3.10)  
Final Action: 

Submitter: Dale P. Evely, Southern Company Services, Inc.  
Recommendation: Add text as follows:  
5.3.10 Proof of Closure Switches. Each safety shutoff valve proof of closure switch shall be a non-field-adjustable switch installed by the valve manufacturer that activates only after the valve is fully closed.  
Substantiation: The second sentence of the existing definition in section 3.3.158.5 is a requirement and should not be a part of the definition. This proposal relocates the requirement to Chapter 5 as requested by the Technical Correlating Committee in their June 2006 meeting. A companion proposal has been submitted to remove the requirement portion of the definition from section 3.3.158.5.  

85- Log #52 BCS-SBB (A.5.3.4.6.3 (New))  
Final Action: 

Submitter: Gordon G. Gaetke, The Dow Chemical Company  
Recommendation: Add new text to read as follows:  
Analyzers may contain heated elements which exceed the auto-ignition temperature of many fuels. Zirconium oxide analyzers, commonly used for oxygen analysis, contain an element heated to 1300°F (704°C). This high temperature element presents a potential ignition source to unburned fuel which could be present at startup. Some analyzers are designed to protect the sampled space from the ignition source by providing flashback protection (such as flame arresters in sample gas path) and skin temperatures rated at T2 (572°F / 300°C) or lower temperature rating. Analyzers with that protection or that are not heated to auto-ignition temperature are permitted.  
Substantiation: In 2005 a flammable hydrocarbon mixture formed in a chemical company’s process furnace that was ignited severely damaging the furnace. A power failure placed the furnace off-line and inadvertently permitted the introduction of hydrocarbon material. The investigation determined an in situ zirconium oxide oxygen probe was the source of ignition. These oxygen probes are very common with fired equipment such as boilers. If excessive unburned fuel accumulates from failed light-offs, or if fuel leaked into boiler or hydrocarbons are ingested through fan, it could be ignited by such an ignition source. If an SBB contains a zirconium oxide or other high temperature analyzer, the analyzer should be designed to protect the sample space from the ignition source.  
Another option is to have the analyzer powered down prior to startup. Then power up analyzer after boiler successfully started up. However, frequent power cycling of these analyzers degrades analyzer life. Also, it takes several minutes for analyzer to cool down and warm up. Since many Single Burner Boilers are automatic recycling, this option is not feasible.