



Distribution Date:
December 22, 2006

Minutes
American Petroleum Institute
COMMITTEE ON REFINERY EQUIPMENT
RISK-BASED INSPECTION SOFTWARE USER GROUP
October 4-5, 2006
Marriott Greenspoint, Houston, TX

ATTENDEES:

M. Geisenhoff – CHAIRMAN, Flint Hills Resources	R. Goderie – Dow Chemical
K. Gottselig, VICE-CHAIRMAN – Lyondell Chemical	R. Goodman – API
J. Aller – Lloyds Register-Capstone	S. Haines – Amerada Hess
B. Alvarado – Dow Chemical	A. Hardy – Lyondell Chemical
G. Alvarado – Equity Engineering	P. Henry – Equity Engineering
M. Anaya – Sunoco	L. Kaley – Equity Engineering
B. Aupperle – INVISTA	P. McAndrew – Sunoco
J. Britton – DNV	H. Mead – Shell Global Solutions
K. Caranahan – Suncor	S. Moore – Berwanger
A. Correia da Cruz – ISQ	K. Okano – Lloyds Register-Capstone
M. De Marco - Istituto Italiano della Saldatura	T. Poulassichidis – Dow Chemical
D. Damin - INVISTA	K. Powers – Equity Engineering
S. DeVillier – Equity Engineering	S. Pinca – Istituto Italiano della Saldatura
K. Doggett – ConocoPhillips	B. Ray – Marathon
R. Downie – Lyondell Refining	J. Shomette – Berwanger
C. Fontenot - INVISTA	J. Vickers – Flint Hills Resources
	T. Wylie – Shell Global Solutions

1. OPENING AND INTRODUCTIONS

Mark Geisenhoff called the meeting to order at 8:30 a.m. The attendees were asked to introduce themselves and the meeting attendance sheet is provided in [Attachment 1](#).

2. APPROVAL OF AGENDA

The meeting agenda ([Attachment 2](#)) was approved as originally distributed.

3. APPROVAL OF MINUTES FROM PREVIOUS MEETING

The committee approved the minutes from the February 22, 2006, meeting as distributed. These minutes can be found on the API RBI website at:
<http://committees.api.org/standards/cre/scrbi/mtginfo/mtghm.html>.

4. PROJECT HISTORY, FUTURE DIRECTION, & API's ROLE

- A. Project History, Strategy, and Future Direction – Lynne Kaley presented a summary of the history of the API RBI project ([Attachment 3](#)) to help give current members a perspective on where the group has been in order to plan future activities. [Attachment 4](#) presents the current strategy for Version 8, a summary of its status, and future development plans. [Attachment 5](#) provides the future vision and objectives of the project; outlines the short- and long-term objectives of the group; and lists updates and patches planned for the next four years.
- B. Future API Role – Roland Goodman reported on the formation of a separate standards committee that will maintain and update API 581, *RBI Base Resource Document*. Management of the Software User Group will be transferred to Equity while API refocuses its efforts on the development and incorporation of new RBI technology into 581. Current members of the User Group are encouraged to join this new committee as well as invite others in their company with specific technology expertise to also participate. The software will continue to be called the “API” RBI Software with a formal link between the standards committee and the User Group to facilitate compliance with 581.

5. SOFTWARE ISSUES

- A. SCARAB Log Review – Ken Gottselig discussed the SCARAB website for reporting software problems. This site must be used to when submitting these type of issues. The site can be found at <http://208.40.63.53/scarab/issues> and the instructions for making entries can be found in [Attachment 6](#).
- B. March 2006 Version 8.0 Release – Lynne Kaley summarized the progression of the software beginning with Version 4 in [Attachment 7](#). The presentation also detailed coming enhancements to Version 8 for the near future.
- C. Future Software Release Plans – The Steering Committee has concluded that the release of future versions should be scheduled carefully to ease the burden on users who package their software. Managing releases will give users enough time to have orderly roll outs of software updates and enhancements. Equity will also investigate issuing patches for minor updates and bug fixes rather than issuing new versions.

6. TECHNICAL WORKING GROUP

- A. Technical Working Group Update – Hearl Mead reported the TWG has completed its tasks on the new and updated modules that were under development. The TWG will be disbanded and its functions will be transferred to the new API 581 standards committee that will be formed in 2007. Future technical development will be worked in the standards committee with input from the User Group (see item 4B).
- B. API 581 BRD Update – Lynne Kaley reported that the ballots on API 581, Part 2, *Probability of Failure*, and Part 3, *Consequence of Failure*, are closed. Both ballots received negative ballots and will require comment resolution, and most likely, reballoting before publication (see [Attachment 8](#)).

7. RBI USER EXCHANGE DISCUSSION

- A. Current RBI User Activities – Each attendee was asked to describe the implementation status of RBI in their companies. All users reported they have begun doing RBI studies, although there is a wide range in the extent of implementation from company to company.
- B. Default Corrosion Allowance – It was noted that less experienced users of the software may not be aware of the consequences of not entering a corrosion allowance when evaluating thinning. After much discussion on the pros and cons on whether or not having a default is the best way to handle the problem it was concluded that a task group is needed to address this issue and make a recommendation to the User Group.

ACTION: *Ken Gottselig, Allison Hardy, Bart Aupperle, Renée Downie, Carlene Fontenot, Brent Ray, Mark Geisenhoff, and Lynne Kaley have volunteered to participate on the task group.*

- C. U.S. and International Regulatory Acceptance – Greg Alvarado described the efforts made by industry to get the use of RBI accepted by the state of California. Several operating companies in the state worked with the regulators and unions to recognize the value in terms of safety when using RBI to develop inspection plans for fixed equipment. The text of the new regulation can be found at the following link: <http://www.dir.ca.gov/Title8/6551.html>.
- D. Definition of Risk Targets – A presentation at the August 2005 User Group meeting suggested that the average equipment risk when using Version 3 damage factor matrix ranged from 22 to 31 ft²/year. These average values include equipment where targets were not achieved after the recommended inspection and might be higher than desired in a fully implemented and managed risk based inspection program. The average risk showed much greater range when considering financial risk due to a large variation for financial user inputs. Individual companies shared their basis for setting the safety and financial risk targets in Version 8 and how targets are determined. Some companies reported that they have been tracking inspection-related equipment failure rates and have noted a decrease in failure rates over the last five years. However, Marsh's most recent report on The 100 Largest Losses 1972-2001 (Large Property Damage Losses in the Hydrocarbon-Chemical Industries) shows that the refining and petrochemical industries (both US and outside the US) have seen an increase in the number of losses, while the percent increase was lower than previous periods.

After the discussion it was noted that the User Group companies have an opportunity to track and share the experiences through-out RBI implementation through papers and presentations at industry conferences. .

ACTION: *The following volunteered to work with Equity to identify and prepare benchmark opportunities in the industry: Mark Geisenhoff, Ken Gottselig, Allison Hardy, Bart Aupperle, Tony Poullassichidis, Bob Alvarado and Tom Wylie.*

8. TECHNICAL TOPICS

- A. Heat Exchanger Bundle Module Revisions – Phil Henry presented an overview of the revisions to the HE Bundle module as a result of the comments received on the ballot ([Attachment 9](#)). An example problem using this module can be found in [Attachment 10](#).
- B. Consequence Model Revisions in Version 8.0 – Phil Henry presented changes to the V8.0 consequence modeler resulting for input from the group and reported bugs ([Attachment 11](#)).
- C. Consequence Model Third-Party Review - Phil Henry presented preliminary results from the consultant that was hired to review the new consequence model ([Attachment 12](#)).
- D. Storage Tank Module – Steve DeVillier demonstrated the new Tank module new included in V8.0.

9. TRAINING OVERVIEW

An overview of the recent training activities and future plans is summarized in [Attachment 13](#).

10. NEXT MEETING

The next User Group Meeting will be held on March 20-22, 2007, in Houston, TX. The first day (March 20th) will be dedicated to the international users by offering them a forum to present and discuss their questions and challenges in using the software. The location of the meeting will be determined at a future date.

11. ADJOURNMENT

Having no additional business, the meeting was adjourned at 3:00 p.m.

Respectfully submitted,



Roland A. Goodman
goodmanr@api.org