Valve Manufacturers Association of America

TECHNICAL
Seminar & Exhibition

Valve and Actuator Trends for the Power Industry

March 7-8, 2013

Hilton Charlotte University Place
Charlotte, NC

PROGRAM of Events

Thursday, March 7, 2013

7:30am
Continental Breakfast/Registration

7:50am
Welcome
Jeff Hager, Chairman, VMA Technical Committee, Product Development, WEIR Valves & Controls, Inc.

8:00am
Power Generation Industry Trends

Keynote Speaker: Kevin Geraghty, VP, Power Generation, NV Energy, Las Vegas

Moderator: Dale Friemoth, VP Technology & Business Development, Crane Fluid Handling

Keynote Address: Power Markets in Transition – Where are we heading?

The last few years have presented remarkable challenges, opportunities and transformational moments for power throughout the world. Staggering growth and demand in emerging economies, sustainability demands in developed economies and the discovery of new gas have challenged the industry and policy-makers alike. Kevin will discuss the markets and industry in transition and explore how this period of transition impacts the decision making of operators and project developers.

SESSION I - Trends in Power

8:50am

1 Power Generation Technologies, Trends, and Influences

Speaker: Electric Power Research Institute - David W. Gandy, FASM, Program Manager, Technology Innovation

Moderator: Kenneth T. Juncewicz, Senior Principal Engineer, GE - Energy

Electricity generation within the US is poised to undergo a significant transformation over the next decade due to continuing improvements in generation technologies and to significant external challenges (eg. environmental regulations, fuel costs, water availability, etc) which face the industry. Current electricity trends and challenges are described across four major generation areas: nuclear, coal, natural gas, and renewables. Scenarios impacting the electricity portfolio are also examined. Materials technologies will have a broad impact on generation and are also highlighted across these four areas.

9:35 – 9:50am
Refreshment Break

9:50am

2 Valve and Material Performance Expectations in Fossil Power Gas Fired Plants

Speaker: Duke Power, Oconee Station – Tom Love, Senior Engineer

Moderator: Arie Bregman, VMA Technical Committee Vice Chair, VP & General Manager, DFT, Inc.

The generation of electric power is rapidly evolving. This evolution, driven by market and environmental regulations, impacts the "balance of fossil power" – the impending change in dispatch order between combined cycle plants and conventional pulverized coal plants.

This superimposes two interesting dynamics: baseloading gas plants designed for cycling, and potentially cycling formerly baseloaded coal plants. These dynamics have already placed new demands on both plants' designs – their valves, materials, actuation and controls.

Changes must occur and we must plan flexibility for both plants to meet the needs of a changing marketplace.

10:35am

3 Welding and PWHT of P91 Steels

Speaker: Bill Newell Euroweld LTD

Moderator: Ken Juncewicz, Senior Principal Engineer, GE – Energy

Welding the creep strength enhanced ferritic (CSEF) steels, commonly known as P91/F91 pipe/forgings or C12A cast steels, either to themselves or other low alloy steels, should not a case of "business as usual". If older practices of welding and heat treating low alloy steels are applied to this steel, the benefits of using this material will not be realized and could lead to catastrophic failure. This presentation details the recommended welding and heat treating practices that should be used and the consequences of not following these recommendations.

11:20am

4 Nuclear Power-Operated Valve Qualification & Life Extension

Speaker: KALSI Engineering, Inc. – Neal Estep, Senior Specialist & Project Manager

Moderator: Ron Manson, Director of Application Engineering, Cameron Valves & Management

Valve and actuator requirements are unique for Nuclear Power Plants (NPPs) compared to other industries. With their strong emphasis on nuclear safety, NPPs require assurance of both pressure boundary integrity and functional-ability under rigorous quality assurance standards.

Furthermore, the strong Regulatory operating environment requires NPPs to maintain rigorous configuration controls to ensure the equipment is operated and maintained in strict conformance to original design criteria. Plant life extension and power up-rating can challenge these original design criteria and require evaluation and possible modifications to maintain compliance. Also, unlike most process industries, valves and actuators in NPPs must be qualified to operate under extreme postulated accident conditions that do not occur during normal in-service operations.

This paper identifies key differences in design, qualification, operation, maintenance, and performance requirements for valves in NPPs versus other industries. It also identifies Code requirements and qualification considerations for new build NPPs as well as for power up-rate and life extension of existing NPPs.

12 Noon – 1:30pm
Buffet Lunch and Exhibits Open

SESSION II - Materials Considerations for Power Industry Valves

1:30pm

1 Progress Energy's Experiences with Quality Issues on Cast C12A Valve Bodies

Speaker: Ken Juncewicz, Senior Principal Engineer, GE – Energy

Moderator: Bill LeBlanc, Engineering Manager, Emerson Process Management Valve Automation

Casting and welding the new microalloyed 9Cr 1Mo VNb steels (cast Gr. C12A) has always been a challenge. Because of the relative newness of these steels, industry familiarity and practice is lagging the required technology. This presentation reviews a particular situation which occurred recently involving the supply of a Gr.C12A valve and the attempts to unsuccessfully rectify the shortcomings found in the manufacturing methods. The author, an employee of a power generation company now part of Duke Energy, has gone to the ASME Board to include a Code Case which documents recommended practice. Hopefully, the details of this story will enlighten the audience to the fact that C12A is not just another CrMo material, but that its successful manufacture requires quite a bit of coordination and technical skills shared between the foundry and the supplier. Successful manufacturing requires a documented roadmap of all heat treatment and welding of components made from this material.

2:15pm

2 Casting High Quality C12A

Speaker: Bradken Tacoma (Atlas) – Elaine Thomas, Director of Metallurgy

Moderator: Jeff Hager, Chair VMA Technical Committee, Product Development, WEIR Valves & Controls, USA, Inc.

This presentation is on Material Processes and Quality Considerations for C12A (F91 is the wrought name) cast materials. It covers foundry issues, welding practices, and other related issues. The power generation industry is looking to new materials that can withstand the higher temperatures needed to increase their efficiency.

P91 (C12A cast name) was first made by Combustion Engineering and further developed by Oak Ridge National Labs s in the 1980s.

The C12A is an unusual high alloy steel. It is martensitic (stainless) steel. The alloy contains a nitrogen addition. The nitrogen range is 0.03 – 0.07% (300 to 700 ppm). The alloy also contains small amounts of Nb and V. When heat-treated correctly, the microstructure develops vanadium carbo nitrides. These resist creep at higher (1200F) steam temperatures. Casting this alloy is a challenge. The liquid metal must pour with low turbulence to keep the nitrogen in solution. Welding C12A is also a challenge. Many have suggested that it is prone to hydrogen pick up issues. While the foundry had not seen this issue, our customers are imposing severe hydrogen bake cycles and weld rod storage requirements. There is word on the street that P91 is embrittled by Hydrogen especially during welding. The fear of embrittlement has spilled over to the casting grade.

There is also information abroad that implies that a hardness of at least 195 HBW is a sign that the material has been heat-treated correctly (i.e. good microstructure with vanadium carbo nitrides). This may be easy for pipe and wrought materials, which are typically less than 4" thick. The foundry is producing C12A castings that are over 8 inches thick. It is a challenge to cool a large casting (30,000 lb.) fast (enough), use a minimum tempering temperature of 1400F, and still meet the 195 BW minimum.

3:00 – 3:30pm
Refreshment Break - Exhibits Open

3:30pm

3 In-Line Weld Repairs of Valve Defects (Failure cases and weld repair activities per ASME Section I & B31 Code requirements.)

Speakers: CFM/VR-TESCO, LLC – Scott L. Smith, SVP and General Manger, with Roy Button, Welding Engineer and Specialty Welding Department (WDI) Division Manager

Moderator: Jim Barker, Director of Customer Order Management & Administration, DeZurik APCO

4:15pm
Panel Discussion for SESSIONS I and II

Moderator: Jeff Hager, Chairman VMA Technical Committee, Product Development, WEIR Valves & Controls, Inc.

5:00pm
Adjournment

5:00 – 6:00pm
Wine & Beer Networking Reception, Exhibits Open

8:00am
Continental Breakfast

SESSION III - Standards, Design and Actuation

8:30am

1 How Codes, Standards and Specifications Influence Valve Design in the Power Industry

Speaker: Paul Major, Manager, Design, Nuclear, Velan Valve Corporation

Moderator: Stephane Meunier, Manager, International Projects, Velan Valve Corporation

Valve design is heavily influenced by standards, codes and specifications. There are very few areas of valve design which are not covered by some aspect of these various documents. This presentation will discuss some of the standards that are used in the design of valves and how these standards influence the evolution of valves related to the power industry.

9:15am

2 SMART Diagnostics for Preventive/ Predictive Maintenance in the Power Industry [SIL/HART]

Speaker: METSO – Mark Buzzell, SMART Products, Product Manager

Moderator: David Escobar, Director of Engineering, METSO Automation, Flow Control

Plants today are facing very challenging requirements; produce more with a smaller and sometimes less experienced workforce. At the same time, the goal of increased safety is a constant growing concern. In order to accomplish these goals, we need to extend shutdown intervals and decrease shutdown periods for our process and safety valves. Ultimately these goals and requirements can be achieved with increased intelligence within our valve assemblies.

Field devices need to allow us to ascertain the health of the assembly, while the process is running, as well as determine which assemblies truly need maintenance during a shutdown. The addition of today's intelligent valve controllers provides the first step to increased intelligence, but there is a need to incorporate more data so we can accurately determine the health of the individual components. The final step is to present the data in a format that can be analyzed by not just the experts but by typical users.

10:00 – 10:15am
Refreshment Break

10:15am

3 Specifying Electric Actuators for the Power Industry

Speakers: AUMA Actuators, Inc. – Justin Ledger, Project Manager, and Bill Breitmayer, National Sales Manager, Power Industry Products

Moderator: Stephane Meunier, Manager, International Projects, Velan Valve Corp.

The various valve types, sizes, and pressure classes used throughout power plants leads to a critical need to select the "best fit" actuator to insure that proper operation and long-term reliability are achieved. This presentation will cover typical application challenges and the actuator designs that are best suited to handle these applications.

11:00am
Panel Discussion for SESSION III

Moderator: Arie Bregman, Vice Chairman, VMA Technical Committee, Vice President & General Manager, DFT, Inc.

11:45 am
Adjournment

Dedicated to the Memory of
THOMAS (TOM) J. HANNAFIN
1941-2012

Tom Hannafin, 71, of Spicewood, Texas, passed away in August, 2012.

He is survived by his wife, Anne, and their five children and spouses, Thomas D. Hannafin, Meghan and Robert Blankenship, Colleen Hannafin and fiancé, Abraham Barker, Allison and Garrett Hall, Jessica and Daniel Hannafin. He was also the proud grandfather of eight grandchildren; Riley, Caden, and Bailey Blankenship, Bella and Sofia Pistone, Harper Hall, and Gabriel and Quentin Barker. He is also survived by his siblings, Mary Hannafin-Tyrrell, John Hannafin, and Eileen Van Artsdalen. He is preceded in death by his mother and father, Mary Verdon and Jeremiah Joseph Hannafin, and sister, Anne Katherine Hannafin.

Tom retired from Kitz Corporation of America after 25+ years and continued to serve the company in a consulting role. He most recently served as Board President of Manufacturers' Standards Society (MSS) and was a long-standing member of American Petroleum Institute (API).

HOTEL

Hilton Charlotte University Place

8629 JM Keynes Drive
Charlotte, NC

VMA is holding a block of rooms for the nights of Wednesday, March 6 and Thursday, March 7 at a special group rate of **$149** per room per night, + tax (currently 15.25%). Additional nights at the group rate are subject to hotel availability.

Hotel Reservations

Please call the Hotel directly at **1-704-547-7444** or 1-**800-Hiltons** and reference the VMA Technical Seminar. The cut-off for the special rate is 12am Eastern on Monday, February 11, 2013 or whenever the block is filled, whichever comes first.

Check-in time is after 3:00pm on your day of arrival; check-out is 12:00pm.

Please note that the above rate includes complementary wireless internet in all guestrooms, complimentary parking, and complimentary access to the Fitness Center!

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Valve Manufacturers Association has partnered with American Airlines to provide members a 5% discount off ANY published airfare on **www.aa.com** for the Technical Seminar & Exhibition, Charlotte, NC. The valid travel dates for this discount are March 4 -11, 2013 using CLT (Charlotte Douglas International Airport).

You can easily access American's fares and apply this discount by going to www.aa.com to book your flight. Place the below Promotion Code in the promotion code box and your discount will be calculated automatically. This special discount is valid off any applicable published fares listed for American Airlines, American Eagle, and American Connection. International originating members will need to contact your local reservation number and refer to the Promotion Code. **Promotion Code: 2333DU**

You may also call **1-800-433-1790** to book your flights, please refer to the Authorization Number when you call. Please note there is a reservation service charge for all tickets issued by phone.

Valve Manufacturers Association of America

TECHNICAL Seminar & Exhibition

2013 Registration Form

Fees

☐ **$595**
First Registration

☐ **$525**
Second Registration from same company

☐ **$425**
Following Registrations from same company

☐ **$85**
Walk the exhibit hall only, includes lunch, exhibit hall entry, and one hour wine and beer reception

☐ **$295**
No attendance, full color Workshop Manual only. (Available post-event)

3 Ways to Register

- **Online**
  www.vma.org
- **Facsimile**
  202/296-0378
- **Mail**
  VMA
  1050 17th Street, NW
  Suite 280
  Washington, DC 20036

Name _____

Name for Badge _____

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Address _____

City _____ State _____ Zip _____

Phone _____ Fax _____

Payment by check

$_____ representing _____ registration(s)

Payment by Credit card

☐ VISA ☐ MasterCard ☐ Discover ☐ American Express

Amount to charge $_____

Card Number _____ Exp. Date _____

Security Number _____ Billing Zip Code _____

Signature _____

Cancellation Policy

Provided that written cancellation (email or fax) is received in the VMA office prior to close-of-business Friday, February 1, 2013 VMA will provide a 100% refund of the registration fee. Should written notification be received prior to COB Friday, February 8, 2013 VMA will provide a 75% refund. There can be no refunds thereafter, and VMA can no longer extend credit for future meetings/events. Name substitutions accepted at any time however, please advise any change prior to Monday, March 4, 2013 - thank you.