EFCOG SAWG
Hydrogen Safety Interest Group

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Presented to:

EFCOG Safety Basis Workshop

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Overview of Discussion

- Background
- Benefits of Hydrogen Safety Interest Group
- Objectives
- Scope
- Status
- Path Forward
- Your Ideas and Recommendations
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Background

- Most DOE/NNSA sites and laboratories have waste hydrogen issues
  - TRU waste drum, waste tank, and vitrification facilities
  - Share issues with chemical processing and commercial nuclear
- Numerous (& inconsistent) approaches taken throughout the Complex
  - Deflagration/detonation, time to reach LFL, analytical methods control set identification, others
  - Hydrogen hazards can be poorly characterized or not recognized
  - Resulting controls may not be adequately defined

Benefits of Interest Group

- Benefits of creating an interest group with hydrogen safety focus
  - A true “savings through sharing” concept to improve consistency among our facilities
  - Provides focal point for collecting and disseminating information, data, and lessons learned
  - Encourages exchange with similar “agenda” technical and contractor groups in the U.S. and internationally
    - National Fire Protection Association
    - DOE Hydrogen Program/Safety Panel
    - Center for Chemical Process Safety (CCPS/AIChE)
    - United Kingdom’s Hydrogen Working Party (HWP)

H2SIG Objectives - 1

- Identify cross-cutting hydrogen safety operations and management issues and opportunities for data and information exchange
- Promote, coordinate, and facilitate the active exchange of successful hydrogen safety analysis and management programs, practices, procedures, lessons learned, and other pertinent information
- Share lessons learned on operational events
  - Catalogue according to phenomenology
- Develop standards and guidance on safety policy, principles and methodology
- Provide a technical forum to examine issues, obtain consensus, and encourage a proactive hydrogen hazards management approach.
- Provide a focal point to discuss common issues with similar-agenda technical bodies in the U.S. and with international colleagues.

H2SIG Objectives - 2

- Share lessons learned, present technical papers, and provide training opportunities
- Coordinate hydrogen safety training during workshops, subgroup meetings, and seminars
- Provide a means to communicate on related combustible gas issues
  - E.g., methane, propane, butane, laboratory gases
- Review U.S. Nuclear Regulatory Commission risk-informed regulations for insights
- Develop topical reports, white papers and other work products to disseminate information to the DOE/NNSA Complex in a timely manner to address existing and emerging issues

H2SIG Scope

Key areas covered by the interest group:

- Hydrogen safety analyses supporting safety basis and other related documentation
- Effective hydrogen management, controls, and operational approaches (e.g., waste acceptance criteria, pyrophoricity, and combustible control programs)
- Hydrogen data collection, experimentation and research that have bearing and benefit to multiple sites and facilities
- Related information on other combustible gases that might be of concern and used in DOE/NNSA Complex facilities and laboratories

Hydrogen Safety Interest Group - Status

- H2SIG approved by SAWG Steering Committee in August 2009
- Operates under SAWG oversight
  - Jerry Hansen (WSMS) – Liaison
- Two telecons held and purpose-objectives statement drafted
- Charter members & oversight
  - DOE/EM and DOE/ORP
  - Sites/Facilities/Labs: ETTP, PNNL, SRR, ORNL, LANL, LLNL, WTP, MOX Project

Start-Up Participation and Interface

DOE/EM	**EFCOG SAWG**
Ana Han	Brad Evans, SAWG Chair
John Wengle	Jerry Hansen, WSMS, Steering Committee Liaison
DOE/ORP	
Gregory Jones, Director ORP	
Dr. Albert Hu,	
Contractor Members:	**Consultants:**
Karen Balo, ETTP, BJC	D. Allan Coutts, WSMS
Nick Barilo, PNNL	Terry Foppe, Navarro
Doug Bumgardner, SRR/SRS	Mukesh Gupta, WSMS, Accident Analysis Subgroup Chair
David Cook, ORNL	John Hoffmeister, ETTP, WSMS
Peter Ebey, LANL	Jofu Mishima
Mark Johnson, LLNL	Kevin O'Kula, WSMS
Carl Mazzola, MOX, Shaw Group	
Belinda Niemi, URS, WTP	

Path Forward

- Solicit ideas and recommendations from Safety Basis Workshop attendees (October 2009)
- 2010 SAWG Workshop in Knoxville, TN (April 2010)
  - One to two technical paper sessions
  - Training course in hydrogen safety/operation
  - Course on analysis methods
- Review cost/benefit of participation in 2010 ANS Topical (Safety and Technology of Nuclear Hydrogen Production, Control and Management)
- Continue monthly telecons
  - Next is 3 November at 12:30 EST

Your Ideas, Comments, Suggestions

- What would make H2SIG useful to your site/laboratory?
- Specific issues that should be tackled?
- Analytical area that everyone treats differently
- Problem area that is recurring and never treated the same
- Guidance that would be welcome

Contacts for Additional Information

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