



## CSB Public Hearing – July 23-24, 2012

# Safety Performance Indicators

Hyatt Regency Hotel, Imperial West Auditorium  
1200 Louisiana Street, Houston, Texas 77002  
<http://houstonregency.hyatt.com/>

### **Introduction**

A public hearing is being held to support the US Chemical Safety Board's continued analysis of effective safety performance indicators and to release preliminary findings on the use of indicators offshore as part of the agency's investigation of the Macondo well blowout, explosion and fire in the Gulf of Mexico. The goal of the proceedings is to create momentum among experts and decision makers regarding the development and use of truly effective indicators for major accident prevention. The CSB's two-day hearing includes presentations and discussions on measuring process safety performance in high hazard industries, including the use of both leading and lagging indicators, for effective safety management.

### **Overview of Proceedings**

The hearing will bring together international regulators, workforce representatives, and industry groups to discuss regulation of offshore drilling operations and explore how companies and regulators use safety metrics to manage risks and drive continuous safety improvements.

The CSB's Board Members and Macondo investigation team will hear testimony from leading safety experts involved in offshore drilling activities and other high hazard industry sectors within the US and internationally, including representatives from countries such as the United Kingdom, Australia, and Norway. Throughout the proceedings, CSB Board Members, staff and the public will have opportunities to ask questions of the panelists. All proceedings will be videotaped and subsequently transcribed. The transcription will be made available on CSB's website at that time, and will officially become part of the investigative record.

The first day of the hearing will focus on the downstream refining and petrochemical sectors. It will feature a presentation by CSB staff on the Board's evaluation of the American Petroleum Institute's (API)

Recommended Practice for Process Safety Performance Indicators for the Refining and Petrochemical Industries (ANSI/API RP 754). API RP 754 was developed in response to a CSB recommendation resulting from the agency’s investigation into the BP Texas City refinery fire and explosion that killed 15 workers and injured 180 others. The CSB found that effective process safety performance indicators were not being used to drive safety improvements and manage major hazard risk. The lessons learned from other high hazard industries with advanced indicator programs will also be discussed during the first day of the hearing.

The second day will include a presentation by CSB staff on preliminary findings of the agency’s Macondo incident investigation on the use of safety performance indicators for major accident prevention. Evidence will be presented on the way safety was managed at Macondo and the influence of the regulator in driving safety performance offshore.

## Program

### Day One – Monday, July 23

- 9:00**            **Opening remarks from CSB Board and Managing Director**
- 9:30**            **Don Holmstrom, CSB Western Regional Office of Investigations Director and Kara Kane, Investigator, Macondo Investigation Team**  
CSB Investigative Work on Safety Performance Indicators
- 10:00**          **Manuel Gomez, CSB Director of Recommendations**  
Overview of API RP 754
- 10:45**          Q&A by Board and Public
- 11:30**          **LUNCH BREAK (90 minutes)**
- 1:00**            CSB Introduction of the Panelists
- 1:00**            **Panel Discussion – Qualities of Effective Indicator Programs (Part 1)**  
Downstream Petrochemical & Refining



**KELLY KEIM, Vice Chair, ANSI/API Recommended Practice 754 Task Group, and Chief Process Safety Engineer, ExxonMobil Chemical**

Mr. Keim has worked more than 30 years in the petrochemical industry. He holds a B.S. in Chemical Engineering from the Pennsylvania State University and an M.B.A. from the University of Houston. After holding positions in research, project engineering, operations and maintenance, Mr. Keim found his passion in Process Safety. He has led HAZOP, LOPA, Inherent Safety, Hazards Analysis for Machinery Safety, Incident Investigations and other Risk Assessments across many parts of ExxonMobil Chemical. Mr. Keim participated in the development of API's initial Process Safety Metrics document and served as Vice-Chair of the API RP 754 drafting committee and continues to serve on the joint API – AFPM working group

for the implementation of Process Safety Metrics.



**JORDAN BARAB, Deputy Assistant Secretary, Labor for the Occupational Safety and Health Administration (OSHA)**

Mr. Barab joined OSHA as Deputy Assistant Secretary of Labor for Occupational Safety and Health on April 13, 2009. He previously served as Special Assistant to the Assistant Secretary of Labor for OSHA from 1998 to 2001, when he helped the Agency to promulgate the ergonomics workplace safety and health standard that was repealed by Congress in March 2001. For the House Education and Labor Committee, he was Senior Labor Policy Advisor for health and safety from 2007 to April 2009. Mr. Barab worked on workplace safety issues for the U.S. Chemical Safety and Hazard Investigation Board from 2002 to 2007; he was a Health and Safety Specialist for the AFL-CIO from 2001 to 2002; and he directed the safety and health program for the American Federation of State, County and Municipal Employees from 1982 to 1998. He also created and wrote the award-winning weblog, Confined Space, from 2003 to 2007.



**KIM NIBARGER, Health, Safety and Environment Department, United Steelworkers (USW) International Union**

Mr. Nibarger worked as a chief operator for Shell Oil Products, US, at the Puget Sound Refinery in Anacortes, Washington prior to taking a leave of absence in 2004 to work for the former PACE Health and Safety Department as a Triangle of Prevention (TOP) program coordinator. Mr. Nibarger has 17 years in refinery operations and served as a member and co-chair of the Joint Health and Safety Committee for 8 years. While at the Shell refinery, he was the Union's lead investigator on the team investigating a November 1998 accident that resulted in the loss of life for six workers. As a TOP program co-ordinator, his duties included root cause analysis of more than 50 serious chemical accidents nation wide. He has trained more than 250 USW (PACE) accident investigators.

- 1:45** Q&A by Board, Staff, and Public
- 2:30** **BREAK (30 minutes)**
- 3:00** CSB Introduction of the Panelists
- 3:00** **Panel Discussion – Qualities of Effective Indicator Programs (Part 2)**  
Downstream Petrochemical & Refining



**IAN TRAVERS, Head of Chemical Industries Strategy Unit, Hazardous Installations Directorate, Health and Safety Executive (HSE)**

Mr. Travers is head of Chemical Industries Strategy Unit in HSE with responsibility for setting the direction and operational policy for the regulation of chemical industries in the UK. Mr. Travers takes the key role within HSE in establishing an effective working relationship with the chemical industry and representative trade associations. He was responsible for managing HSE's strategic response to Buncefield and steered the Process Safety Leadership Group to conclude a joint regulator and industry response to the incident and other major incidents such as BP Texas City. From this experience, Ian promoted for the UK chemical industry to develop key principles of Process Safety Leadership.

Mr. Travers shaped recent changes to the way the HSE and the UK Environment Agencies jointly regulate major hazards within the COMAH remodeling program, resulting in improved efficiency in the regulation of major hazards and regulatory programs. He also pioneered the use of key performance indicators to monitor the effectiveness of critical chemical process systems. Mr. Travers was the first author to present this in 'Developing Key Performance Indicator for Process Safety, HSG 254. He also worked as a drafting author on the OECD guidelines for KPIs and contributed to the CCPS and KPI guidelines. Mr. Travers recently chaired the international expert panel to publish the OECD Guidelines on Process Safety Governance, and he worked with ScottishPower in the UK to develop their award winning approach to asset management.



**JESSIE HILL ROBERSON, Vice Chairman, Defense Nuclear Facilities Safety Board**

Ms. Roberson has almost 30 years of experience in the nuclear field, with in-depth experience in low level waste management, environmental restoration, reactor operations and project management. This is Ms. Roberson's second appointment to the Defense Nuclear Facilities Safety Board. Prior to her first appointment to the Board, Ms. Roberson served with the Department of Energy (DOE) in a variety of responsible and challenging positions. In 1996 she became the Manager of DOE's Rocky Flats Field Office at the Rocky Flats Environmental Technology Site in Colorado, with the responsibility for integration and performance of all environmental cleanup activities on the Site. She served with distinction in this position until December 1999. In her ten years with the Department of Energy, she has held numerous technical and managerial positions at DOE's Rocky Flats Environmental Technology Site and the Savannah River Site in Aiken, South Carolina, including environmental cleanup, waste management, safeguards and security, as well as nuclear reactors and weapons.



**JOHN W. LUBINSKI, Deputy Director, Division of Inspection and Regional Support, Nuclear Regulatory Commission (NRC)**

Mr. Lubinski joined the Nuclear Regulatory Commission (NRC) in 1990 as an Engineer in the Office of Nuclear Materials Safety and Safeguards (NMSS). Since joining the NRC, he served as a Senior Enforcement Specialist in the Office of Enforcement, Chief for the Inspection and Fuel Manufacturing Branches in NMSS, and Technical Assistant for then Commissioner Diaz. In 2006, Mr. Lubinski was appointed to the Senior Executive Service and served as Deputy Director for the following Divisions in the Office of Nuclear Reactor Regulation: Division of Policy and Rulemaking, Division of Operating Reactor Licensing, Division of Component Integrity, and currently, as Deputy Director for the Division of Inspection and Regional Support, NRR. John holds a Bachelor of Science degree in Mechanical Engineering from the University of Maryland.



**MARTIN SEDGWICK, Head of Engineering and R&D Global Technical Services, Scottish Power**

Mr. Sedgwick is responsible for the rollout of Iberdrola's global Operational Integrity program which covers 5 countries, and 40 major assets including nuclear, thermal, hydro and co-generation. On joining ScottishPower in 2001, Mr. Sedgwick worked as the Station Manager at Longannet Power Station, responsible for the management of the 2400MW coal fired power plant in central Scotland. In 2007 Mr. Sedgwick was appointed to the role of head of asset management with the aim of developing the groups asset strategy in line with PAS 55 and developing an integrated approach to operations and maintenance including developing a new risk approach to asset management and process safety.

Mr. Sedgwick is now recognized as a world leading expert on the subjects of process safety and operational integrity and is regularly invited to deliver key note addresses at industry events and to comment on regulatory guidance on the subject of Process Safety. Through the Amor Group, Mr. Sedgwick has provided consultancy to a number of multi-national Energy Companies on how to successfully implement a robust process safety management program, including the development of an innovative approach to KPI management.

**4:00** Q&A by Board, Staff, and Public

**4:55** Closing Remarks from CSB Chairperson Moure-Eraso

**Day Two – Tuesday, July 24**

- 9:00**            **Welcome and Opening Remarks from CSB Chairperson Moure-Eraso**
- 9:05**            **Investigations Team Lead, Cheryl MacKenzie and Investigator Kelly Wilson, Macondo Investigation Team**  
Offshore Safety Performance Indicators – Preliminary Findings on the Macondo Incident
- 9:50**            Q&A from Board and Public
- 10:15**           **BREAK (15 minutes)**
- 10:30**           CSB Introduction of the Panelists
- 10:35**           **Panel Discussion - Regulatory, Stakeholder, and Public Interest Groups**



**KENNETH E. ARNOLD, Chairman, Committee on the Effectiveness of Safety & Environmental Management Systems for Outer Continental Shelf Oil and Gas Operations**

Mr. Arnold has over forty-five years of industry experience with 16 years at Shell Oil Company. He founded Paragon Engineering Services in 1980 which was purchased by AMEC in 2005. Mr. Arnold retired from AMEC in 2007 and is currently Senior Technical Advisor for WorleyParsons and an independent consultant providing project management, facilities engineering and engineering management consulting to the oil and gas industry. He was elected to the National Academy of Engineering in 2005. Mr. Arnold recently chaired the national Research Council report, “the Effectiveness of Safety & Environmental Management Systems for Outer Continental Shelf Oil and Gas Operations.”

Mr. Arnold has received an American Petroleum Institute citation for his work in promoting offshore safety and was recognized by the Offshore Energy Center in 2009 for his pioneering work in helping to develop API RP 14C. He is a registered professional engineer and serves on the advisory board of the engineering schools of both Tulane University and Cornell University, a Trustee of Southwest Research Institute.



**IAN WHEWELL, Former Director, HSE Offshore Division**

Mr. Whewell is a Chartered Engineer and until his retirement in October 2009 was also a Member of the Institution of Engineering Technology. He graduated from Manchester University in 1970 with a BSc (Hons) in Metallurgy. After a period working as a production engineer in the motor industry, in 1974, he joined the UK Government Regulator the Health and Safety Executive (HSE) as an Inspector of Factories. In that role he regulated health and safety standards in a wide range of industries including chemicals, engineering, and foundries. His subsequent work as a Principle Inspector included the management of a team responsible for major hazards, chemical and petrochemical industries in Eastern England. In 1993 Mr. Whewell joined HSE's newly formed Offshore Division (OSD) at the HSE's London headquarters to work on the development of the new offshore legislation to implement the recommendations made by the Cullen Inquiry into the Piper Alpha disaster. In 1995 he was promoted to Operations Manager where he managed one of the OSD Operational Units based in Aberdeen whose role was to regulate the health and safety performance offshore industry and was also responsible for the development of OSD's inspection and enforcement strategies. Mr. Whewell became Deputy Director of OSD In 2000, and in January 2006 he became Director of the Offshore Division of HSE's Hazardous Installations Directorate, a post he held until his retirement



**JAKE MOLLOY, Regional Organizer, Offshore Energy Branch, RMT O.I.L.C.**

Mr. Molloy began working offshore in 1980 delivering accommodation maintenance services in the Chevron operated Ninian Field. Multi-discipline roles developed and he quickly learnt new skills, including fire and gas system testing, process and production assistant, then moving into lifting and heli-deck operations with a move to the Shell UK operated Brent Field in 1986. In February 1990 Mr. Molloy was elected as an offshore safety representative, a new statutory role in the offshore industry implemented by the UK government in the aftermath of the Occidental Piper Alpha disaster of 1988. He combined this role with that of Helicopter Landing Officer for almost 7 years. It was late 1996 when he won another election, becoming a full-time trade union official with responsibility for offshore operations. Mr. Molloy participates in several UK industry health and safety forums including the Step Change Leadership Team, the Offshore Industry Advisory Committee, the Helicopter Safety Steering Group and was recently involved with the Oil Spill Prevention and Response Advisory Group (OSPRAG) set up in the aftermath of Deepwater Horizon. Mr. Molloy is also the editor of his union's magazine entitled 'Blowout'.



**ROY ERLING FURRE, Second Deputy Leader, SAFE union**

Mr. Furre started his work in the Norwegian union, SAFE, in the year 1996. He was first elected to the federation as an organization secretary in the tariff section. At the SAFE Congress in year 2000, he was elected as the second deputy leader with responsibility for HSE in SAFE and he has represented the union in several tri-partite arenas and forums in the Norwegian oil industry. SAFE has managed to put high focus on HSE and especially working environment matters in the petroleum industry.



**ØYVIND LAURIDSEN, Principal Engineer, Petroleum Safety Authority Norway (PSA)**

Dr. Lauridsen graduated with a M.Sc. degree in engineering in 1987 from the Danish Technical College (now DTU). He worked as researcher until 1997 at Rogaland Research Institute (now IRIS), Norway, with occupational health and safety in the offshore petroleum industry. Based on the research he obtained a Ph.D. degree in safety management in 1997 from the Technical University of Denmark. Dr. Lauridsen joined the PSA in 1997 (former NPD) as principal engineer in the area of organizational safety. He has participated in developing the management regulation. He has been the leader of several accident investigation teams and auditor on the management of HSE performance in different organizational change processes in the industry. Since 2000 he has been professionally responsible for parts of the PSA activity "Trends in Risk Level in the Norwegian Petroleum Industry" (RNNP).



**Lois Epstein, Arctic Program Director, The Wilderness Society**

Lois N. Epstein, P.E. is the Arctic Program Director for The Wilderness Society, a national conservation organization. Her efforts focus on ensuring that onshore and offshore Arctic oil and gas operations are as safe and environmentally-sound as possible and protecting sensitive areas from new resource development. Previously, Ms. Epstein was a private consultant on environmental and policy issues and as a senior engineer for several national and regional non-profit organizations. Ms. Epstein has presented invited testimony before the U.S. Congress on over ten occasions, largely focusing on release prevention in the oil and gas sector. Additionally, she has served on several federal advisory committees including current service on the Offshore Energy Safety Advisory Committee, and has appeared in *The New York Times*, *The Washington Post*, *CNN*, and *The NewsHour with Jim Lehrer*. In May 2010, Ms. Epstein advised the Department of the Interior on its safety report to the President following BP's Gulf spill. Ms. Epstein is a licensed Professional Engineer in the States of Alaska and Maryland. She has a masters' degree from Stanford University in Civil Engineering with a specialization in environmental engineering and science, and undergraduate degrees from both Amherst College (English) and MIT (mechanical engineering).



**11:50** Q&A by Board, Staff, and Public

**12:45** **LUNCH BREAK (90 minutes)**

**2:15** CSB Introduction of Peter Wilkinson



**PETER WILKINSON, Managing Director, Noetic Risk Solutions**

Presentation: Safety Indicators - Where do we go from here?

Mr. Wilkinson is Managing Director of Noetic Risk Solutions where he focusses on providing strategic advice to Government, Boards and leadership teams on safety management and enterprise risk management mainly in the upstream oil and gas industry. In the last 18 months, Mr. Wilkinson has completed assignments for clients in Australia, China, UK, Malaysia, Timor Leste, New Zealand, and the US Gulf of Mexico as well as for the Australian Government on the Montara oilfield blowout. Peter is also a member of the Australian Radiation Protection and Nuclear Safety Agency's (ARPANSA) Nuclear Safety Committee

From 2005 to 2009 Mr. Wilkinson was the Group Manager for Operational Excellence and Risk in Caltex Australia and a member of the Caltex Leadership Team. He oversaw the building of a process safety culture and the introduction of an enterprise wide risk management framework. From 2001 – 2005, he was the principal “architect” for the development of the Australian National Offshore Petroleum Safety Authority, (NOPSA – now NOPSEMA). In 2002 the Brazilian Government invited him as a member of the International Regulators Forum (IRF) to review the revised regulatory system put in place following the loss of the Petrobras P36 floating production platform. From 1991 - 2001 Mr. Wilkinson worked in the North Sea for the UK's Health and Safety Executive, Offshore Safety Division regulating the offshore petroleum industry following the Piper Alpha disaster.

**2:45** CSB Introduction of the Panelists

**2:50** **Panel Discussion - Industry**



**C.R. (CHARLIE) WILLIAMS II, Executive Director, Center for Offshore Safety and Chief Scientist - Well Engineering and Production Technology, Shell**

Mr. Williams has worked for Shell for 40 years in R&D, engineering, and operations management assignments, including VP of Global R&D. Mr. Williams is Chairman of the Governing Board for the Center for Offshore Safety. He has been working extensively on post-Macondo industry response including serving as advisor to Shell senior management. He currently chairs two Joint Industry Task Forces - Subsea Well Control & Containment and the API - Center for Offshore Safety, and was co-chair of the BSEE/Argonne Labs Workshop – Effects of Water Depth on Offshore Equipment & Operations. Mr. Williams also serves on the DOI OESC Federal Advisory Committee, the Operating Committee of the Marine Well Containment Project, and on the Executive Board of the Marine Well Containment Company. He continues to testify at numerous Commissions including the Presidential Commission and the National Academy Commission. He presented at the panel “Root Causes of Incidents and Responses” at the National Conference on Science, Policy and the Environment and on drilling & drilling safety management at the Center for Strategic and International Studies. Mr. Williams is a 35 year member of SPE and API.



**BOB LAUDER, Health & Safety Policy Manager, Oil & Gas UK**

Mr. Lauder has worked in upstream oil and gas safety since 1977. He spent 13 years in offshore health and safety roles with Operators and a Drilling Contractor before moving into an onshore supervisory position in 1990. From 1994 to 2008, Mr. Lauder held Health Safety & Environmental management positions with two operating companies and a major engineering contractor. In 2008 he moved into independent safety consultancy where his prime client was Tullow Oil based in London. During that period Mr. Lauder provided direct support to the Tullow senior leadership team and also supported major development projects in Ghana and Uganda. he joined Oil & Gas UK in January 2011. In his current role Mr. Lauder provides a key communication link between the industry and the Regulator. He also leads the activities of the industry Health & Safety Forum, the Major Hazards Forum, and the KPI Work Group. Mr. Lauder led the development of recent OGUK publications on Ageing & Life Extension and Operational Risk Assessment.



**AUD NISTOV, Health & Working Environment, Safety and Security Manager and current acting Director of HSE & Operations, the Norwegian Oil Industry Association (OLF)**

Dr. Nistov has held several key positions nationally and internationally, including chairing tripartite projects within the Norwegian oil and gas industry (Project hydrocarbon leaks reduction, Project noise reduction, Project chemical working environment etc.), chairing OGP Task Forces, chairing the NOIA Training Work Group, and has been on the program committee for the global SPE HSE conferences. Dr. Nistov also sits on the National committee on HIV/AIDS (appointed by the Ministry of health, Ministry of foreign affairs and Ministry of international development). She has also been the editor during 10 years for the magazine "Ramazzini" and has chaired the occupational medicine committee of the Norwegian Medical Association.

Dr. Nistov graduated as a Medical Doctor (MD) at the University of Bergen, Norway, in 1987, and holds a law degree in Labour Legislation, Norwegian School of Economics and Business Administration, 1992. She is a specialist in Occupational and Environmental Medicine (1996) and did post-graduate studies within Management and Organization Psychology at the National Institute of Occupational Health, 1998.



**GUNHILD HOLTET EIE, Vice President for Statoil's HSE Competence Centre and KATHY KANOCZ, Vice President of Health, Safety and Environment (HSE), Statoil's Development Production North American Operations**

Ms. Eie holds a MSc degree in Industrial Economy and has 20 years of experience within the area of process safety and risk management. She has been with Statoil since 1991 as a professional within the area of risk analysis and process safety, driving major accident risk focus in all parts of the value chain from greenfield development projects to operations offshore and onshore. Ms. Eie is based in Stavanger, Norway, and has since May 2009 headed up Statoil's HSE Competence Centre.



Ms. Kanocz has 22 years of HSE experience working in the oil and gas sector. She has had held a variety of HSE roles that supported onshore, offshore, pipeline and corporate operations. She joined Statoil in 2010 and is based in the Houston office. Prior to that, Ms. Kanocz worked for Chevron, BP and Conoco. She holds a MS in Environmental Science.



**JOE STOUGH, Vice President, Innovation Technologies, IHS**

Mr. Stough is the visionary and strategist behind the IMPACT ERM® Suite of Solutions, a key product in the IHS global EHS & Sustainability platform. With a professional background in large scale database software design and a graduate degree in Applied Statistics from the University of California, Mr. Stough has been leading the innovation of solutions that successfully combine the disciplines of enterprise-level business software and advanced statistical analysis. Now with a large “collective” data set due to years of global usage of the IMPACT software, Mr. Stough’s primary focus is to capture the unique opportunity afforded by applying statistical methods to mine valuable findings from the EHS & Sustainability data set. His ongoing mission as the leader of Innovation Technologies at IHS is to continuously pursue the measurable organizational factors which yield both a safer work environment and more sustainable operations – so they can be “practically measured” by business leaders to drive continuous sustainability performance improvements.

- 4:20** Q&A by Board, Staff, and Public
- 5:15** Final Remarks from CSB Chairperson Moure-Eraso