

Review and Update of Bureau of Safety and Environmental Enforcement Offshore Oil and Gas Operations Inspection Program

Committee

Gregory Parnell

Chair

Gregory S. Parnell, Chair, is a Research Professor of Industrial Engineering in the Department of Industrial Engineering and Director of the M.S. in Operations Management (the university's largest graduate program) and M.S. in Engineering Management programs at the University of Arkansas. His research focuses on decision analysis, risk analysis, systems engineering, and resource allocation for defense; intelligence; homeland security; and environmental management. He is also a senior principal and a board member with Innovative Decisions, Inc., a decision and risk analysis firm, and has served as Chairman of the Board. He is a Professor Emeritus at the U.S. Military Academy at West Point. Previously, he served as a Professor of Systems Engineering at West Point, a Distinguished Visiting Professor at the U.S. Air Force Academy, an Associate Professor at Virginia Commonwealth University, and a Department Head at the Air Force Institute of Technology.

Dr. Parnell is a former president of the Decision Analysis Society of the Institute for Operations Research and Management Science (INFORMS) and of the Military Operations Research Society (MORS). He has also served as editor of Journal of Military Operations Research. Dr. Parnell was lead editor of Decision Making for Systems Engineering and Management, Wiley Series in Systems Engineering (2nd Ed, Wiley and Sons, 2011), lead author of the Handbook of Decision Analysis, Wiley Operations Research/ Management Science Series (Wiley and Sons, 2013) and editor of Trade-off Analytics: Creating and Evaluating the Tradespace, Wiley Series in Systems Engineering Series (2017).

He has received several professional awards, including the Decision Analysis Society Frank P. Ramey Medal, MORS Wanner Award, U.S. Army Dr. Wilbur B. Payne Memorial Award for Excellence in Analysis, MORS Clayton Thomas Laureate, two INFORMS Koopman Prizes, and the MORS Rist Prize. He chaired the NRC Committee on Methodological Improvements to the Department of Homeland Security's Biological Agent Risk Analysis (2008) and was a member of the Improving Metrics for the Department of Defense Cooperative Threat Reduction Program (2011) and the Committee on Evaluating the Effectiveness of the Global Nuclear Detection Architecture, National Academy of Science (2013). He is a fellow of International Committee for Systems Engineering, INFORMS, MORS, and the Society for Decision Professionals.

He received his B.A. in aerospace engineering from the University of Buffalo, his M.E. in industrial and systems engineering from the University of Florida, his M.S. in systems management from the University of Southern California, and his Ph.D. in engineering-economic systems from Stanford University. Dr. Parnell is a retired Air Force Colonel and a graduate of the Industrial College of the Armed Forces.

Lori S. Bennear

Member

Lori S. Bennear is the Juli Plant Grainger Associate Professor Energy Economics and Policy at the Nicholas School of the Environment at Duke University and the Associate Director for Educational Programs at the Duke University Energy Initiative. She received her Ph.D. in Public Policy from Harvard University (2004) and also earned an MA in Economics from Yale University (1996) and an AB in Economics and Environmental Studies from Occidental College (1995). Her research focuses on evaluating the effectiveness of flexible environmental policies including information disclosure regulations, management-based regulations, liability regimes, and demand-side management programs. She has applied these evaluations across a range of environmental domains including energy, toxics, and drinking water. Her co-edited book *Policy Shock: Recalibrating Risk and Regulation after Oil Spills, Nuclear Accidents and Financial Crises* was published by Cambridge University Press in October 2017. She is currently working on developing best practices for adaptive regulation of emerging technologies in the energy domain, with a focus on autonomous vehicles and offshore wind.

Claudine S. Bradley

Member

Claudine S. Bradley is Technical Leader - Safety for the National Energy Board (NEB), Canada's federal agency responsible for regulating international and interprovincial aspects of the oil, gas and electric utility industries. Dr. Bradley provides leadership and counsel on management systems, safety culture and other system safety matters related to activities under the jurisdiction of the Board. Prior to joining the NEB, Claudine spent 17 years in the airline industry where she led various aviation safety and operations teams. She holds a Ph.D. in Human and Organizational Systems with a focus on safety culture and safety oversight culture research.

Paul G. Bradley

Member

Paul G. Bradley CEng, FIMMM, CMgr, MCMI is currently the Health and Safety Executive's (HSE) Energy Division Operations Manager and part of the Energy Divisions Senior Leadership Team with overall responsibility for Offshore and Onshore Well Engineering Operations, Diving Operations, and Mines and Quarries.

Mr. Bradley joined the HSE (the UK's Independent Regulator) in 2008 as HM Principal Inspector of Mechanical Engineering in the Hazardous Industries Sector, following 28 years of working as a Mechanical Engineer in the UK underground coal mining industry and holding several senior management positions.

Mr. Bradley has been a member of the Institute of Mechanical and Electrical Engineers since 1981, which merged with the Midland Institute of Mining Engineers in 1995. He is a past president of the Midland Institute of Mining Engineers and has served as a council member for more than eight years. Mr. Bradley is also an active member of the Mining Technology Division Board.

Cary Coglianese

Member

Cary Coglianese is Edward B. Shils Professor of Law and Professor of Political Science at the University of Pennsylvania, where he currently serves as the director of the Penn Program on Regulation and has served as the law school's Deputy Dean for Academic Affairs. He specializes in the study of regulation and regulatory processes, with an emphasis on the empirical evaluation of alternative regulatory strategies and the role of public participation, negotiation, and business-government relations in policymaking. His books include: *Achieving Regulatory Excellence*; *Does Regulation Kill Jobs?*; *Regulatory Breakdown: The Crisis of Confidence in U.S. Regulation*; *Import Safety: Regulatory Governance in the Global Economy*; and *Regulation and Regulatory Processes*. Prior to joining the faculty of the University of Pennsylvania, he was on the faculty of Harvard University's John F. Kennedy School of Government, where he was a coauthor of the report "Performance-Based Regulation: Prospects and Limitations in Health, Safety and Environmental Protection" for the U.S. Department of Transportation. He also has taught as a visiting law professor at Stanford and Vanderbilt. He founded the Law & Society Association's international collaborative research network on regulatory governance, served as a founding editor of the journal *Regulation & Governance*, and founded and continues to serve as advisor to *The Regulatory Review*. A co-chair of the American Bar Association (ABA) administrative law section committee on e-government and past co-chair of its committee on rulemaking, he has led a National Science Foundation initiative on e-rulemaking, served on the ABA's task force on improving Regulations.Gov, and chaired a nonpartisan task force on transparency and public participation in the regulatory process. He previously served as a member of the Transportation Research Board's Committee for a Study of Performance-Based Safety Regulation, and currently is a public member of the Administrative Conference of the United States (ACUS), for which he chairs the ACUS Committee on Rulemaking. He earned his A.B from The College of Idaho and his M.P.P, J.D., and Ph.D. in Political Science from the University of Michigan.

James S. Dyer

Member

James S. Dyer holds the Fondren Centennial Chair in Business in the College of Business Administration at the University of Texas at Austin. In 1999, he received the College of Business Administration Foundation Advisory Council Award for Outstanding Research Contributions. He served as chair of the Department of Information, Risk, and Operations Management for 9 years (1988–1997). He was the Philip J. Rust Visiting Professor of Business at the Darden Business School at the University of Virginia in 1999. He is the former president of the Decision Analysis Society of the Operations Research Society of America [now the Institute for Operations Research and the Management Sciences (INFORMS)]. He received the Frank P. Ramsey Award for outstanding career achievements from the Decision Analysis Society of INFORMS in 2002. He was named a fellow of INFORMS in 2006 and received the Multiple Criteria Decision Making Society's Edgeworth-Pareto Award in 2006. Dr. Dyer has consulted with a number of companies and government agencies, including the Jet Propulsion Laboratories, the RAND Corporation, and the Department of Energy, concerning the application of decision and risk analysis tools to a variety of practical problems. He has published three books and more than 60 articles on risk analysis and investment science. His recent articles focus on decision making, including a multiattribute utility analysis for the disposition of weapon-grade plutonium in the United States and Russia. He received a BA with honors, Phi Beta Kappa, in physics, with minors in mathematics and philosophy, and a PhD in business quantitative methods and management from the University of Texas at Austin.

Lois N. Epstein

Member

Lois N. Epstein, P.E. is Arctic Program Director for The Wilderness Society, responsible for programs to protect Arctic ecosystems by ensuring that oil and gas operations are as safe and environmentally sound as possible and located in non-sensitive areas. She advocates for oil and gas regulatory and other safeguards by testifying before Congress and other governmental bodies, engaging in onshore and offshore planning processes, performing analyses using governmental data, serving as a technical advisor to Native and non-Native members of the public, and speaking to diverse constituencies and the media. Before joining The Wilderness Society, Ms. Epstein was a private consultant on environmental policy issues and a senior engineer for several non-profit organizations. She is on the Boards of Directors of the Pipeline Safety Trust and of the Alaska Public Interest Research Group. She currently serves on the Anchorage Budget Advisory Commission and she was a member of the Anchorage Metropolitan Area Transportation Solutions, the city's metropolitan planning organization. She also served on a number of federal government committees including the Transportation Research Board Committee on Performance-Based Safety Regulation, USDOT's Technical Hazardous Liquid Pipeline Safety Standards Committee, and the Bureau of Safety and Environmental Enforcement's Offshore Energy Safety Advisory Committee. In May 2010, Ms. Epstein advised the Department of the Interior on its safety report to the President following BP's 2010 Gulf of Mexico spill. She earned a master's degree in civil engineering from Stanford University, a bachelor's degree in English from Amherst College, and a bachelor's degree in mechanical engineering from the Massachusetts Institute of Technology.

Thomas H. Gilmour

Member

Thomas H. Gilmour is an independent maritime consultant specializing in maritime regulatory compliance, support to Admiralty Law Firms and P & I clubs as an expert witness, maritime security and emergency and organizational management. He recently retired from the American Bureau of Shipping where he served as President and Chief Operating Officer of ABS Americas from 2006. He was responsible for all operations of the American Bureau of Shipping in the Western Hemisphere and also served as a Corporate Vice President. Prior to that, Rear Admiral Gilmour was the Assistant Commandant for Marine Safety, Security, and Environmental Protection. In that capacity he directed national and international programs for commercial vessel safety, port safety, waterways management, and marine environmental protection. He also headed the U.S. Delegation for the State Dept. to the Maritime Safety Committee at the International Maritime Organization in London. Under his leadership, both USCG vessel and port facility security regulations were developed that were required under the Maritime Transportation Security Act following 9/11.

A graduate of the Coast Guard Academy, RADM Gilmour later attended the University of Michigan earning Master of Science degrees in both Naval Architecture and Marine Engineering, and Mechanical Engineering. In 1996, RADM Gilmour was assigned to the Chief of Naval Operations Strategic Studies Group as a CNO Fellow. He worked with eight Navy Captains and one Marine Colonel to develop revolutionary concepts for future naval warfighting, reporting directly to the Chief of Naval Operations. At ABS, he led the implementation of the new Naval Vessels Rules and worked with many Govt. vessel operators including the Navy, Coast Guard, MSC, and NOAA as well as foreign navies.

RADM Gilmour's assignment in the Marine Safety and Operations Ashore areas included serving as Captain of the Port and Group Commander for the Port of New York from 1993 to 1996. While there his command provided security for the 50th anniversary of the United Nations and the Haitian Peace Talks, as well as responding to over 3,900 search and rescue cases and 2,200 chemical and oil spills. He formed and was the first Commanding Officer of Activities New York in 1996, which combined all operational units in New York into the largest operational command in the Coast Guard. Additionally, he was the Executive Officer and Alternate Captain of the Port at Marine Safety Office, San Francisco Bay from 1990 to 1993. Gilmour also served as the Chief of Staff of the 13th Coast Guard District in Seattle, Washington, from 2000 to 2001, and Director of Field Activities for the Assistant Commandant for Marine Safety and Environmental Protection where he oversaw all Marine Safety Operations, from 1997 to 2000. He also served as the Commander of the Maintenance and Logistics Command Pacific in Alameda, CA from 2001-2003 as a RADM, where he directed the maintenance of all Cutters and Units in the Pacific Area.

Richard Sears

Member

Richard A. Sears is a Professor of the Practice in the Department of Energy Resources Engineering, Stanford University, where he develops and teaches courses in energy systems, economics, and oil and gas exploration technology. He was appointed as a member of the Ocean Energy Safety Advisory Committee for the United States Department of the Interior in 2011. He previously served as the chair for the Committee on the Application of Real-Time Monitoring of Offshore Oil and Gas Operations and as a member of the Committee on Options for Implementing the Requirement of Best Available and Safest Technologies for Offshore Oil and Gas Operations. He also served as chief science and technology adviser to the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling that was established by President Obama in May 2010.

Mr. Sears had a 33-year career with Shell Oil Company and Royal Dutch Shell, where he acquired significant domestic and international experience in the upstream oil and gas industry. His technical and managerial positions included exploration geophysicist, technical instructor, economist, strategic planner, and general management. His managerial positions ranged from exploration and research to fully integrated exploration and production business management, and his responsibilities have included business planning and forecasting, financial responsibility, and staff planning and development. Between 1999 and 2005, Mr. Sears was a vice president for Royal Dutch Shell, where he was responsible for global deepwater technical services.

Between 2006 and 2009, Mr. Sears worked as external research co-ordinator for the Shell Group and was appointed a visiting scientist at the Massachusetts Institute of Technology (MIT). In this position, he was responsible for managing Shell's energy research activities at MIT and other key U.S. universities and for integrating external research objectives with internal technology strategies. While at MIT, he was an active participant in the campuswide Energy Initiative, carried out applied research in energy systems, taught and contributed to courses in several departments, and served as a liaison between the MIT Energy Initiative and oil companies. Mr. Sears is the author of numerous external and internal publications. He received a BS in physics from Stanford University and an MS in geophysics from Stanford University.

Robert Sheppard

Member

Robert Sheppard is a Chief Technical Advisor with Energo Engineering, an engineering consulting firm specializing in advanced analysis, integrity management, and risk and reliability, in Houston, Texas. He has more than 25 years of experience in structural engineering with a focus on assessment and repair of offshore structures and structural integrity management. He has extensive experience in planning and implementing offshore inspection activities and in the design and installation of offshore repairs, including working with divers and installation contractors to facilitate their ability to perform work safely offshore both above and below water. Mr. Sheppard has been actively involved in the development of offshore standards including the API integrity management recommended practices (API RP 2SIM and RP 2FSIM) and the AWEA offshore wind recommended practice. He has worked on projects for the Minerals Management Service (now BSEE) addressing hurricane impacts and offshore wind inspection guidelines, and two TRB study committees addressing offshore wind topics. Mr. Sheppard earned a BS in civil engineering from Rice University and an MS in structural engineering from the University of California, Berkeley. He is a registered civil engineer in California and Texas.

Manuel Terranova

Member

Manuel Terranova is chief executive officer, president, and founder of Peaxy, Inc., a highly distributed software-based file and data management solution designed for midtier and enterprise-class customers as well as external cloud. Mr. Terranova is a technology veteran with a proven track record of bringing emerging technologies to market. He has a broad range of business and technical leadership experience in oil and gas, subsea equipment, software application development, pipeline inspection robotics, telemetry systems and IT infrastructure

Before co-founding Peaxy, Terranova was at General Electric's Drilling and Production business, where he led a \$5.2 billion portfolio as a Senior Vice President. He managed the company's commercial and regional resources worldwide, including the creation of a \$200 million subsea equipment joint venture in sub-Saharan Africa. During his 13 years at GE, he led a number of successful software development efforts, including a GIS software business, remote pipeline monitoring and SupportCentral, a knowledge-based portal that grew to become the company's second most used application worldwide. Terranova served as CIO of GE's Oil & Gas division from 2002 to 2006. In that role he led efforts to migrate the entire business from legacy applications to ERP and a contemporary application stack.

In 2010, Jeff Immelt awarded Mr. Terranova the Chairman's Award for Technology and Innovation. That year—as head of GE's subsea portfolio—he led a series of successful product launches, including a remotely enabled subsea control system that set industry records for market-share gains in a single year.

Since 2013, Mr. Terranova has been actively engaged as a committee member with the National Academies of Sciences, Engineering, and Medicine and the Transportation Research Board. His involvement has helped advance the safety of offshore oil and gas operations.

Mr. Terranova graduated from Cornell University with degrees in German literature and political science. While at the Johns Hopkins School of International Studies, Mr. Terranova obtained a master's degree in international economics and international law.

James M. Tien

Member

James M. Tien (NAE) is Distinguished Professor and Dean Emeritus of the University of Miami, College of Engineering. An internationally renowned researcher, he formerly served as the Yamada Corporation Professor at Rensselaer Polytechnic Institute, was founding chair of its Department of Decision Sciences and Engineering Systems, and professor in its Department of Electrical, Computer and Systems Engineering. Tien joined the Rensselaer faculty in 1977 and twice served as its acting dean of engineering. His research interests include systems modeling, public policy, decision analysis, and information systems. He has served on the Institute of Electrical and Electronics Engineers Board of Directors (2000-04) and was its vice president in charge of the Publication Services and Products Board and the Educational Activities Board. Tien earned his bachelor's degree in electrical engineering from Rensselaer and his Ph.D. in systems engineering and operations research from Massachusetts Institute of Technology. He has been honored with a number of research, educational and service awards, including being elected to the National Academy of Engineering in 2001.

Peter K. Velez

Member

Peter K. Velez is an independent consultant in the offshore oil and gas industry. Before his retirement in late 2012, he was global emergency response manager for Shell International Exploration and Production. His employment at Shell began in 1975. His assignments included drilling engineer; civil engineer; division civil engineer; operations superintendent; production superintendent; manager, production engineering—Gulf of Mexico; manager, health, safety, and environment—Gulf of Mexico; manager, regulatory affairs; manager, regulatory affairs and incident command for Shell U.S. and Americas; and global security manager. As the incident commander for Shell, he responded to major incidents in the Gulf of Mexico and onshore involving oil spills, hurricanes, fires and explosions, and other events. He has received several external awards, including the U.S. Coast Guard Meritorious Public Service Award and Medal (the highest award to a civilian), the API Distinguished and Meritorious Service Awards, and the Offshore Operators Recognition Award. Mr. Velez was appointed by the Secretary of Transportation to the U.S. Coast Guard National Offshore Safety Advisory Committee, on which he served for 7 years, the last 4 years as chairperson. He was a member of the board of directors of the Marine Preservation Association, the largest oil spill response organization in the United States. He was active in various trade association groups. Among other positions, he served as chair of the API Executive Committee on Drilling and Producing Operations; chair of the API Executive Committee on Environmental Conservation; and chair of the Louisiana Health, Safety, and Environment Committee. He was a member of the API Standards Group and the API Safety Committee, and he chaired the API committee that developed, with the Minerals Management Service, Recommended Practice 75, Safety and Environmental Management Program for Offshore Operations. He served as a member of the TRB Marine Board from 2010-2016. He was a member of two Transportation Research Board committees, Remote Real-Time Monitoring of Offshore Oil and Gas Operations and Safety Culture of Offshore Operations. He served on the National Petroleum Council that prepared the 2015 report for DOE and DOI “Arctic Potential: Realizing the Promise of U.S. Arctic Oil and Gas Resources;” and also as a member of the committee preparing a Supplemental Report to this study in 2018. Mr. Velez received a BS and an MS in civil engineering from Rensselaer Polytechnic Institute in Troy, New York.

Mark Hutchins

Staff Officer