



# Work-in-Progress

## National Nuclear Security Administration Tracking and Assessing Governance and Management Reform of the Nuclear Security Enterprise

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### BACKGROUND & PROJECT DESCRIPTION

The National Defense Authorization Act for Fiscal Year 2016 (the Act) directs the Secretary of Energy and the Administrator of the National Nuclear Security Administration to develop and carry out an implementation plan to reform the governance and management of the nuclear security enterprise. The plan will address recommendations—except those requiring legislation—from the November 2014 report of the Congressional Advisory Panel on the Governance of the Nuclear Security Enterprise, entitled “A New Foundation for the Nuclear Security Enterprise,” as well as recommendations from an October 2015 study by the Commission to Review the Effectiveness of the National Energy Laboratories and a June 2015 report of the Secretary of Energy Task Force on DOE National Laboratories.

The Act directs NNSA's Administrator to enter into an agreement with the National Academy of Sciences (NAS), Engineering and Medicine and the National Academy of Public Administration (NAPA) to create an Implementation Assessment Panel to:

- 1) Provide guidance to the Secretary and Administrator on the implementation plan content;
- 2) Track implementation plan progress; and
- 3) Assess implementation plan effectiveness.

NAPA and NAS have formed a joint Implementation Assessment Panel. The Panel will oversee the work of the joint NAPA/NAS study team, providing strategic guidance on study approach and focus, and issuing key findings and recommendations. The 14 Panel members bring a wealth of experience from DOE Science Laboratories, Federally Funded Research & Development Centers, the Intelligence Community, Academia, and the Office of Management and Budget.

## PANEL

**Donald Levy (Co-Chair)** is the Albert A Michelson Distinguished Service Professor of Chemistry Emeritus at the University of Chicago and Senior advisor to the university President. For a decade ending in 2016, he was the university's vice president for national laboratories, with responsibility for the oversight of DOE's Fermi and Argonne National Laboratories. He earned a B.A. from Harvard University in 1961 and a Ph.D. from the University of California, Berkeley, in 1965. After two years at Cambridge University as an NIH and then NATO Postdoctoral Fellow, he joined the University of Chicago in 1967 and has spent his entire career there. Among his many honors, Prof. Levy has served as Editor of the Journal of Chemical Physics (1998-2007), Chair of the American Institute of Physics Editors' Panel (2000-2002), CEO and Board Member of the UChicago Argonne LLC (2007-2016), Vice-Chair of the Argonne National Laboratory Board of Governors and Chair of its Science Policy Council (2007-2016), Member of the Fermilab Board of Directors (2007-2016), and Fellow of the American Physical Society, AAAS, Optical Society of America, American Academy of Arts and Sciences, and American Chemical Society. Prof. Levy is an elected member of the National Academies of Sciences.

**Robert Shea (Co-Chair)\*** is a Principal at Grant Thornton LLP, an accounting and consulting firm. He is Past Chair of the National Academy of Public Administration and a member of the Commission on Evidence-based Policymaking. Before joining Grant Thornton, he was with the U.S. Office of Management and Budget as Associate Director for Administration and Government Performance, Associate Director for Management, and Counsel to the Controller. Previously, he served as Counsel to the Senate Committee on Governmental Affairs, Legislative Director in the Office of Representative Pete Sessions, and Special Assistant/Professional Staff Member for the House Committee on Government Reform and Oversight.

**Jonathan Breul\*** is currently an adjunct professor at the McCourt School of Public Policy at Georgetown University. He was previously the Executive Director of IBM Center for The Business of Government and a Partner in IBM Global Business Services. Prior to joining IBM, Mr. Breul served as Senior Advisor to the Deputy Director of the Management in the Office of Management and Budget. He received an M.P.A. from Northeastern University, and B.A. from Colby College.

**Elizabeth Cantwell** is Vice President for Research Development at Arizona State University and Professor of Practice in its School for Engineering of Matter, Transport, & Energy. She was previously the director of Lawrence Livermore National Laboratory's Economic Development and Engineering Mission Development Offices and, before that, deputy associate laboratory director for the National Security Directorate at Oak Ridge National Laboratory. Prior to joining Oak Ridge, Dr. Cantwell was the division leader for the International, Space, and Response Division at Los Alamos National Laboratory. Her career began in building life-support systems for human spaceflight missions with NASA. She received an M.S. in mechanical engineering from the University of Pennsylvania, an M.B.A. in finance from Wharton School, and a Ph.D. in mechanical engineering from the University of California, Berkeley. Dr. Cantwell has extensive NRC experience, including current membership on the Aeronautics and Space Engineering Board and past membership on the Division on Engineering and Physical Sciences Committee.

**Keith A. Coleman** is currently assigned as a Special Project Manager in Boeing Phantom Works working advanced weapon development. Keith has worked in the Boeing Military Aircraft production and Phantom Works advanced design organizations working production and prototype fighter and Unmanned Air Vehicle aircraft and weapon systems for over 31 years. He was previously assigned as the division Chief Engineer for Boeing's Cruise Missile Systems and Direct Attack weapons within Boeing Defense Systems. He recently worked in Boeing's Special Pursuits Cell designing and building a special purpose Tier 2 class Unmanned Air Vehicle. He was also the Program Manager for the OSD Counter Electronics High Powered Microwave Advanced Missile Project Joint Capability Technology Demonstration resulting in the world's first successful air launched High Power Microwave cruise missile.

**Dona L. Crawford** recently retired as associate director for computation at the Lawrence Livermore National Laboratory (LLNL), where she was responsible for the development and deployment of an integrated computing environment for petascale simulations of complex physical phenomena. This environment includes high-performance computers, scientific visualization facilities, high-performance storage systems, network connectivity, multi-resolution data analysis, mathematical models, scalable numerical algorithms, computer applications, and necessary services to enable laboratory mission goals and scientific discovery through simulation. Prior to her LLNL appointment in July 2001, Ms. Crawford had been with Sandia National Laboratories since 1976, serving on many leadership projects, including the Accelerated Strategic Computing Initiative, the Nuclear Weapons Policy Board, and the Nuclear Weapons Strategic Business Unit.

**Martin C. Faga\*** is a retired President and Chief Executive Officer of the MITRE Corporation. As a Federally Funded R&D Center (FFRDC), MITRE's governance has parallels with the governance of NNSA facilities. Before joining MITRE, Mr. Faga served from 1989 until 1993 as Assistant Secretary of the Air Force for Space, where he was responsible for overall supervision of Air Force space matters. At the same time, he served as Director of the National Reconnaissance Office (NRO), responsible to the secretary of defense and the Director of Central Intelligence for the development, acquisition and operation of all U.S. satellite reconnaissance programs. Mr. Faga is a member of the Board of Directors of the Association of Former Intelligence Officers. He served from 2006-2009 on the President's Intelligence Advisory Board.

**Paul A. Fleury** is the Frederick William Beinecke Professor Emeritus of Engineering and Applied Physics at Yale University. He is the founding Director of the Yale Institute for Nanoscience and Quantum Engineering. He served as Dean of Engineering at Yale from 2000 until 2008. Prior to joining Yale Dr. Fleury was Dean of the School of Engineering at the University of New Mexico from January 1996, following 30 years at AT&T Bell Laboratories. At Bell Laboratories he was director of three different research divisions covering physics, materials and materials processing research between 1979 and 1996. During 1992 and 1993 he was Vice President for Research and Exploratory Technology at Sandia National Laboratories. He is a Fellow of the American Physical Society, the American Association for the Advancement of Science, the American Academy of Arts and Sciences, and a member of both the National Academy of Sciences and the National Academy of Engineering.

**David Graham** is Deputy Division Director in the Strategy, Forces, and Resources Division at the Institute of Defense Analyses, an FFRDC. Since 1995, Graham has led several dozen studies addressing post-Cold War national security roles, responsibilities, and organizations for a variety of sponsors. His work on the DOE nuclear weapons complex includes coauthoring IDA's 1996 "120-Day Study" of The Organization and Management of the Nuclear Weapons Program; participating in Admiral Hank Chiles' 1999 Presidential Commission on Nuclear Expertise; co-authoring the Chiles' studies of DOE security in the early 2000s; and serving as a member of the 2008 Defense Science Board Panel on nuclear deterrence skills. Graham served for four years (1999-2003) as the IDA study lead for the Panel to Assess the Reliability, Safety, and Security of the U.S. Nuclear Stockpile (The "Foster Panel"). In 2013-14 he served as the executive director for the congressionally mandated Augustine-Mies Panel and assisted in preparing their 2014 report and testimony, which led to the current study. Most recently, Graham led a congressionally mandated study on the management of security operations at DOE's Category I nuclear sites.

**Robert Hale\*** is a Senior Executive Advisor at Booz Allen Hamilton and Senior Fellow at the Center for a New American Security. He was previously Department of Defense Comptroller and in that role he acted as principal advisor to three Secretaries of Defense on budgetary and financial matters. He also served as the Air Force comptroller. Prior to service in the Department of Defense, Mr. Hale was the Executive Director of the American Society of Military Comptrollers. His career began as an active duty officer in the U.S. Navy. Mr. Hale received a Masters in Operations Research from Stanford University. Mr. Hale has provided valuable input in the Academy, including contributing to the Academy's recent publication, Building a 21st Century SES: Ensuring Leadership Excellence in Our Federal Government

**Kathleen A. Peroff\*** is currently President of Peroff and Associates and former Deputy Associate Director of OMB's National Security Division. In this position, she served as OMB's senior career official responsible for the Department of Defense, Department of Veterans Affairs, the intelligence community, and DOE's nuclear weapons programs. She is a recognized expert in the field of national security budgetary and fiscal policy. Her former positions with OMB include Deputy Associate Director for Energy, Space, Science, & Water Division (responsible for DOE, NASA, and NSF) and positions with the Housing Branch and the Division of Special Studies. Prior to joining OMB, she served as a Deputy Division Director and Visiting University Fellow in HUD's Office of Policy Development and Research and as Assistant Professor of Political Science and Public Policy at the University of Maryland. She received her PhD from the University of Wisconsin.

**Barbara Romzek\*** is a Professor and former Dean of American University's School of Public Affairs and a Professor of Public Administration and Policy. Before joining American University she held faculty and senior leadership positions at the University of Kansas, the last being interim Senior Vice Provost for Academic Affairs. Dr. Romzek is recognized for her expertise in the area of public management and accountability with emphases on government reform, contracting, and network service delivery. Building on her research on formal accountability structures and processes, her recent work focuses on informal accountability in collaborative network settings. Her research has encompassed complex federal work settings, including NASA, Congress, and the U.S. Air Force, as well as state agencies, local governments, and nonprofit agencies. Dean Romzek has received research awards from the American Society for Public Administration and the American Political Science Association (APSA). Most recently, she received the John Gaus Award from APSA for lifetime achievement in political science and public administration. She is a fellow of the National Academy of Public Administration.

**Tammy P. Taylor** is Chief Operating Officer of the National Security Directorate at DOE's Pacific Northwest National Laboratory. Prior to joining PNNL in 2013, she was Acting Deputy Associate Director for Chemistry, Life, and Earth Sciences at Los Alamos National Laboratory (LANL) and, prior to that, Division Director for Nuclear Engineering and Nonproliferation at LANL. In 2007-10, she was assigned to the White House Office of Science and Technology Policy (OSTP). She began her LANL career as a postdoc in 1999, advancing to Group Leader by 2004. Dr. Taylor holds a PhD in Environmental Engineering from Georgia Tech. She is also a Professional Engineer and has authored over 70 papers, reports, and proceedings.

**Merri Wood-Schultz** is a Retired Fellow and Guest Scientist at Los Alamos National Laboratory (LANL). She is currently a member of the Nuclear Forensics Science Panel (NFSP) for the Department of Homeland Security, and, in that capacity, she is a part-time consultant for Noblis. Her work at LANL included the physics design of thermonuclear weapons, nuclear weapons-related laboratory experiments (Above Ground Experiments (AGEX)), the development of concepts and methods for certifying nuclear performance (the effects of code calibration on predictions and the Quantification of Margins and Uncertainty (QMU)), and nuclear intelligence. Before the end of nuclear testing, Dr. Wood-Schultz was responsible for the conceptual and physics design of numerous nuclear tests and add-on experiments. She holds a PhD in Physics from Georgia Institute of Technology.

\*NAPA Fellow

#### **NAPA PROJECT STAFF**

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