

Tom Isaacs – Siting and Licensing
Former Director, Office of Policy within the U.S. DOE

Mr. Isaacs is a well-recognized national and international leader in the field of nuclear energy, nuclear waste management, nuclear security, repository siting, and public trust and confidence. He is a senior advisor to the Nuclear Threat Initiative, a U.S. NGO where he works with senior nuclear representatives from Pacific Rim countries on cooperation on fuel cycle and waste management issues. He is also a long-time advisor to the Canadian Nuclear Waste Management Organization (NWMO) on the management and storage of Canada's SNF. He is a former member of the National Academy of Sciences Nuclear and Radiation Studies Board.

Mr. Isaacs has had significant leadership positions in nuclear waste management for over 30 years. He was instrumental in: the siting of the Yucca Mountain candidate repository Site; the passage of the Nuclear Waste Policy Amendments Act of 1987 that defined the U.S. waste program; the development of the Blue Ribbon Commission on America's Nuclear Future (BRC) report written at the direction of the President of the United States that recommended the path forward for the U.S. nuclear waste program; and the strategic approach currently being implemented by the Nuclear Waste Management Organization of Canada to manage and dispose of spent fuel.

Previously Director, Office of Policy within the U.S. DOE office responsible for spent fuel and high level radioactive waste (HLW) management and disposal (The DOE Office of Civilian Radioactive Waste Management). Responsible for the strategic direction of the national program to manage and dispose of spent nuclear fuel and high-level radioactive waste. Major responsibilities Included setting program directions, priorities, and policies for this \$400 million per year program, leading policy and technical analyses, and managing a federal and contractor staff. Managed the comparative evaluation of candidate sites for the for the first U.S. repository program for the disposal of U.S. spent nuclear fuel and high-level radioactive (HLW).

Was seconded by the Administration to the Senate Energy and Natural Resources Committee working intimately with Committee Chair Senator Bennett Johnston and senior committee staff to develop and pass the Nuclear Waste Policy Amendments Act Identifying Yucca Mountain as the preferred site for the first U.S. spent fuel repository. Led U.S. DOE activities to integrate a national monitored retrieval storage facility for spent fuel into the U.S. program of management and disposal, this included strategy development, siting, licensing, and engagement activities.

Education includes a B.S. with honors in Chemical Engineering from the University of Pennsylvania (Tau Beta Pi, Phi Lambda Upsilon honor societies) and a M.S. in Engineering and Applied Physics from Harvard University with coursework in nuclear engineering at MIT.

Allison Macfarlane - Siting and Licensing
Former Chairman of the U.S. Nuclear Regulatory Commission

Education: BS, Geology, University of Rochester
Ph. D, Massachusetts Institute of Technology, Geology

Overview:

An internationally-recognized expert on nuclear waste disposal, nuclear energy, and regulation, with over 20 years of experience in the field. A former Chairman of the U.S. Nuclear Regulatory Commission, a former Commissioner with the Blue Ribbon Commission on America's Nuclear Future, which developed a national strategy for dealing with the back end of the nuclear fuel cycle.

Ms. Macfarlane possesses extensive knowledge and experience with storage, siting, and transportation of spent nuclear fuel. She has published numerous peer-reviewed papers and an edited book on spent fuel storage issues. Her research has focused on the safety issues associated with spent fuel storage at reactor sites. As Chairman of the U.S. Nuclear Regulatory Commission, she also championed the back end of the nuclear fuel cycle, including putting forth rulemaking for decommissioning power plants. As a former Commissioner of the Blue Ribbon Commission on America's Future (2012), she championed developing a national strategy for dealing with the back end of the nuclear fuel cycle.

While Commissioner with the Blue Ribbon Commission (BRC), she developed a deeper expertise on storage, transport, and siting issues, not only in the US, but in other countries as well. During her time as Chairman of the NRC, she dealt with the regulatory side of storage, transport, and disposal of spent fuel. As Blue Ribbon Commissioner, as well as NRC Commissioner, she engaged extensively with public interest groups, community members, nuclear workers, the nuclear industry, and local, state, tribal, and federal government officials.

Ms. Macfarlane appreciates that public engagement is essential in siting and regulatory issues. As NRC Chairman, to reinforce and facilitate this often-overlooked aspect of the process, she developed a new position on her personal staff - a Director of Public Engagement. She developed an innovative approach which greatly improved public involvement and confidence in the regulatory process.

She has published a multitude of peer-reviewed papers and an edited book on spent fuel storage issues, including:

- Risks of Densely Packed Spent Fuel Pools, Vulnerability to Terrorism in Nuclear Spent Fuel Management, (2015);
- Reducing the hazards from stored spent power reactor fuel in the United States, *Science and Global Security*, 11, 1-51 (2003).

Dr. Josephine Piccone – Radiation Detection & Monitoring
Former Certified U.S. Nuclear Regulatory Commission Reviewer / Inspector, 1985 – 2015
A U.S. Government representative to the IAEA Radiation Safety Standards Advisory Committee (RASSC)

Dr. Josephine Piccone has more than 40 years of public and private sector nuclear safety experience in operational health physics, radiation control and regulation, the roles and oversight responsibilities of the NRC and Agreement States, and licensee regulatory compliance.

Education: Ph.D., Medical Radiation Physics, Temple University,
M.S., Radiological Health (Health Physics), Temple University, and
B.S., Chemistry (Pre-Med), Daemen College.

Provided senior-level management, radiation protection expertise and practical experience to the licensing, inspection, and regulatory oversight of source, byproduct and special nuclear material; spent nuclear fuel and high-level nuclear waste; and storage, transportation and disposal of low-level waste; and private sector radiation safety and nuclear medicine programs.

Dr. Piccone's NRC experience includes serving as the focal point for all stakeholders within and outside the NRC, including Congress, on the status of Yucca Mountain activities. Dr. Piccone's management positions within the NRC included Director of the Yucca Mountain Directorate, Director of the Division of Spent Fuel Alternative Strategies, and Deputy Director of the Division of Fuel Cycle Safety and Safeguards.

Dr. Piccone managed a program to establish and maintain effective communications and working relationships between the NRC and States, local governments, other Federal agencies, and Native American Tribal Governments. She directed the oversight of, and technical assistance to thirty-seven Agreement States to ensure continued effectiveness in protecting public health and safety, and compatibility with the NRC's program.

She participated extensively in IAEA technical and consultant meetings resulting in contributions to over ten publications related to radioactive waste, radiotherapy, radiography, medical exposures and radiation safety and security of sources.

Dr. Piccone has served as U.S. Government representative to the IAEA Radiation Safety Standards Committee and worked extensively in the development of over ten IAEA documents related to radiation protection in waste management, medical, and industrial applications. She also managed the Integrated Materials Performance Evaluation Program (IMPEP) to assess Agreement States and NRC performance and initial development and implementation of an NRC Tribal Policy statement.

Richard C. Moore – Spent Fuel Transportation**Western Interstate Energy Board Consultant supporting High Level Nuclear Waste Committee**

Retained by Western Interstate Energy Board (WIEB) to assist their High Level Nuclear Waste Committee develop proposed policies on spent nuclear fuel transportation. The Western Governors' Association (WGA) has retained his services for many projects related to radiological materials transportation.

Currently the District Governor Elect for Montana Rotary District 5390, and will become District Governor on July 1, 2018.

Education: MS in Environmental Engineering from Auburn, Alabama

Involved in setting policy at Waste Isolation Pilot Plant (WIPP) as a representative for the State of Wyoming on the WGA Waste Isolation Pilot Plant Transportation Advisory Group.

Lead author on the initial version of the *Waste Isolation Pilot Plant Transportation Safety Program Implementation Guide*. *The Guide* has served as the model for transportation of radiological materials throughout the United States. Assisted the DOE Carlsbad Field Office with the first revision to the Transportation Plan for WIPP Shipments to reflect the requirements of *the Guide*.

Involvement with the WIEB HLW Committee has included evaluation of proposed ISFSI's at various locations, including the facility in Utah. As contractor to the Governor of the State of Wyoming, he provided advice to that State on the proposed Monitored Retrievable Storage Facility (MRS) in Freemont County, Wyoming. Has been an active participant in DOE's Transportation External Coordination Working Group and the National Transportation Stakeholders Forum.

Worked for the State of Nevada; Nevada Counties Clark, Eureka, and Nye; and California County Inyo on transportation issues related to the proposed repository at Yucca Mountain, Nevada

Conducted the first full scale exercise of a shipment of highly radioactive Cesium-137 capsules from Northglenn, Colorado to Hanford for the DOE.

Worked with the Blue Ribbon Commission and prepared a report on the relationship between state and federal governments on permitting issues, including transportation.

Works with western regional governors. The Western Governors' Association (WGA) has retained his services for many projects related to radiological materials transportation.

Worked for the State of Nevada; Nevada Counties Clark, Eureka, and Nye; and California County Inyo on transportation issues related to the proposed repository at Yucca Mountain, Nevada.

J. Gary Lanthrum - Spent Fuel Transportation**Principal Engineer with Radiation Material Transportation and Storage Consulting (RAMTASC)**

Education: B.S., Nuclear Engineering, Oregon State University

Overview: Possesses extensive experience and expertise in developing national policy and operational plans for transport of all the commercial spent nuclear fuel from the power plants where it was generated to Yucca Mountain.

As Director of the National Transportation Program for the Yucca Mountain Repository, oversaw policy on the use of specific transportation systems, policy on funding and technical support to states along the transportation corridors, and security vulnerability assessments and impact mitigations for those shipments. His office also developed a detailed concept of operations and advanced transportation infrastructure by completing Environmental Impact Statements for a rail corridor in Nevada, and developing standard transportation casks and canister specifications. Notable policy decisions developed by his office included the direction to use dedicated trains for rail shipments and a draft policy for providing emergency response training funds and technical assistance to states and tribes along spent fuel transportation corridors. He also oversaw development of a National Transportation Plan, a Conduct of Operations Plan, and establishing the cost, schedule and technical baselines for capital transportation projects with an EAC of \$3.7 billion. Accomplishments include promulgating Executive Branch policy associated with the transportation requirements of the Nuclear Waste Policy Act.

Mr. Lanthrum also held the position of Director of the National Transportation Program for DOE's Office of Environmental Management (EM). There, he ensured DOE field offices establish compliant radioactive waste transportation campaigns and oversaw satellite tracking of DOE's Spent Nuclear Fuel (SNF) and Transuranic Waste (TN) shipments. This also involved establishing agreements with state and regional groups over SNF transport issues affecting their jurisdictions.

Mr. Lanthrum's work has also involved transportation of special nuclear material at DOE's Albuquerque Operations Office. This included developing transportation solutions for radioactive wastes like plutonium fluoride that required national security protection.

In addition to his policy and strategic work on SNF transportation, Mr. Lanthrum has also been involved in planning and executing actual SNF shipments. While working as Director of DOE/EM's National Transportation Program at the Albuquerque Operations Office, he was directly involved in the planning and execution of the 2003 SNF shipments from the West Valley Demonstration Project to long-term storage at the Idaho National Laboratory, including identifying and compiling the lessons learned from those successful shipments.

Mr. Lanthrum was inducted into Oregon State University's Academy of Distinguished Engineers in 2006, as well as being selected to serve on the Hazardous Transportation Committee (AT040) of the National Academy of Sciences' Transportation Research Board from 2006 to 2016.

Kristopher W. Cummings, M. S. – Nuclear Engineering
Principal Engineer with Curtiss-Wright Nuclear Division-NETCO

Recognized within the nuclear industry for his experience in wet and dry storage systems, providing both technical and regulatory expertise.

Education: B.S. Physics and B.S. Mathematics from the University of Washington and M.S. Nuclear Engineering & Engineering Physics from the University of Wisconsin

Sr. Project Manager in Fuel and Decommissioning at the Nuclear Energy Institute (NEI) . He provided policy and strategic direction to the nuclear industry in the areas of nuclear fuel, dry cask storage, spent fuel pool storage, spent fuel management, consolidated interim storage and spent fuel disposal.

Developed industry guidance in areas of spent fuel criticality:

- NEI 12-16, Guidance for Performance of Spent Fuel Criticality Analysis for Light Water Power Reactors
- NEI 16-03, Guidance for Monitoring of Fixed Neutron Absorbers in Spent Fuel Pools

Coordinated industry response to NRC Generic Letter 16-01 on Neutron Absorber Monitoring Programs in Spent Fuel Storage Racks

Coordinated and lead nuclear industry in developing strategic approaches to achieve an efficient and reliable regulatory framework for dry cask storage and transportation.

Developed a regulatory framework for dry cask storage license renewal in conjunction with NRC, EPRI and nuclear industry.

Developed and presented industry positions on policy and regulatory positions to industry and public stakeholders (DOE, NRC, nuclear industry)

Supported all aspects of design, licensing and construction of spent fuel storage systems, transportation casks, and ISFSIs in both the U.S and international environments (Spain, South Korea, Ukraine, Switzerland, etc.).

Experienced in various roles with Holtec International, performing shielding, criticality and confinement calculations for dry cask storage systems and spent fuel storage racks for nuclear utilities and the Department of Energy.

Experienced with garnering regulatory approval of spent fuel storage systems and spent fuel storage racks and supporting design, siting and licensing activities for site-specific ISFSIs with federal, state and local regulatory authorities.