

Invitation for Comment on the EPA Science Advisory Board “Short List” Candidates to Supplement the Radiation Advisory Committee for the Review of the Multi-Agency Radiation Survey and Assessment of Materials and Equipment (MARSAME)

The EPA Science Advisory Board (SAB) Staff Office is forming a Panel to review the Multi-Agency Radiation Survey and Assessment of Materials and Equipment (MARSAME) December 2006 Draft Manual. Nominations for technical experts to augment the SAB Radiation Advisory Committee (RAC) were requested in the Federal Register (72FR 11356) on March 13, 2007. The notice provided background information on the review, including document availability, the proposed charge, the process for submitting nominations, and expertise needed for consideration as a candidate for the *Ad Hoc* Panel. Biosketches of the members of the RAC are available at http://www.epa.gov/sab/pdf/rac_biosketches_2007.pdf. Pursuant to the Federal Register notice, any interested person or organization may nominate qualified individuals for membership on the Panel, and individuals should have expertise in one or more of the following areas:

- (1) Statistics applicable to radiological surveys of materials and equipment (M&E);
- (2) Radioactive waste management with emphasis on after market materials recycling, decommissioning/cleanup of radiation sites, and facilities operations experience at large as well as small radiological sites;
- (3) Instrumentation for radiation detection with emphasis on Measurement Quality Objectives (MQOs) as well as scan-only and in-situ survey techniques and instrumentation;
- (4) Radiation data management with emphasis on Data Quality Assessment (DQA) and Data Quality Objective (DQO) protocols; and
- (5) General radiation health safety and worker protection specializing in facility operation safety, clean-up, and decommissioning a large site or facility (e.g., a nuclear waste storage facility or a nuclear power plant).

Based on qualifications, interest and availability of the nominees, the SAB Staff Office has identified 11 candidates who have the relevant expertise to supplement the RAC members. Brief biographical sketches (“biosketches”) on these expert candidates are provided below. We hereby invite comments from members of the public for relevant information, analysis or other documentation that the SAB Staff Office should consider in evaluating these candidates.

The SAB Staff Office Director makes the final decision about who serves on the review panel, based on all relevant information. This includes a review of the member’s confidential financial disclosure form (EPA Form 3110-48) and an evaluation of a lack of impartiality. For the EPA SAB Staff Office, a balanced committee or panel is characterized by inclusion of candidates who possess the necessary domains of knowledge, the relevant scientific perspectives (which among other factors, can be influenced by work history and affiliation), and the collective breadth of experience to adequately address the general charge. Specific criteria to be used in

evaluating an individual Panel member include: (a) scientific and/or technical expertise, knowledge, and experience; (b) availability and willingness to serve; (c) absence of financial conflicts of interest; (d) absence of an appearance of a lack of impartiality; and (e) skills working in committees, subcommittees and advisory panels; and, for the Panel as a whole, (f) diversity of, and balance among, scientific expertise, viewpoints, etc.

Please e-mail your comments no later than **July 23, 2007** to Dr. K. Jack Kooyoomjian, Designated Federal Officer, Radiation Advisory Committee (RAC), at: kooyoomjian.jack@epa.gov.

Mr. Bruce Church, President, of BWC Enterprises, Inc.

Mr. Bruce W. Church is President of BWC Enterprises, Inc. (a Health Physics/ Environmental Consulting Company), and Past President of the Nevada Test Site Historical Foundation (a non-profit corporation). He is also a part-time employee of the Desert Research Institute of the University of Nevada as a Senior Health Physicist. He was Adjunct Research Professor of Health Physics at the University of Cincinnati. Mr. Church retired from the U.S. Department of Energy (DOE) in 1995 as Assistant Manager for Environment, Safety, Security and Health at the Nevada Operations Office of the U.S. Department of Energy. He has served as a consultant to the International Atomic Energy Agency (IAEA) for remedial actions, as a Health Physics Advisor (1986-1994), and consultant (1995-2002) to the Government of Australia on remedial actions at the former United Kingdom nuclear weapons test sites at Maralinga, Emu & Monte Bello Islands, Australia. Mr. Church also served as Co-Chairperson of the Risk Team, Office of Risk and Science Policy, Environmental Management, at the US DOE.

Mr. Church has extensive experience in instrumentation, expertise in environmental monitoring, measurement, instrumentation, and measurement techniques, and dose reconstruction. Mr. Church has been involved with and managed many radiological remedial action projects over the last three decades, most notably the Enewetak Atoll cleanup in 1977-1980. He has also managed remediation of US DOE project sites in the states of Mississippi, New Mexico, Nevada and Colorado, as well as managing the US DOE off-site fallout dose reassessment program (1979-1989). He initiated and managed Radioactive Low level Waste Disposal Program at the Nevada Test Site (1975-1990). Mr. Church has publications covering such topics as estimates of exposure from the Nevada Test Site and other sites, remediation exposure studies, rehabilitation of radioactive sites, dose-assessment considerations for remedial action on radioactively contaminated soil, and risk assessment involved with remediation.

Mr. Church received his B.S. in Molecular/Radiobiology at the University of Utah, and his M.S. in Radiological Health from Colorado State University. Has served on inter-agency work groups for cleanup activities for radioactive wastes at various test sites inside and outside the US.

Mr. Kenneth Duvall, Independent Researcher and Consultant, NE Research

Mr. Duvall is an independent researcher and consultant for N.E. Research in Washington, DC (2000 to present). He has developed guidance on data quality in compliance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), reviewed and provided comments to the U.S. Department of Transportation (DOT) on its environmental assessments under the National Environmental Protection Act (NEPA), provided guidance to the U.S. Department of Energy (DOE) on developing Risk-Based End States (RBES) for the cleanup and closure of sites. He has also provided guidance to the Conference of Radiation Control Program Directors (CRCPD) on decontamination and decommissioning of facilities where radioactive material was used, as well as provided guidance on environmental cleanups relating to MARSSIM implementation. As a member of the Interagency Steering Committee on Radiation Standards (ISCORS), recycle subcommittee, he managed DOE efforts to ensure government-wide consistency in implementation of technical methods, modeling, implementation and policy pertaining to the recycling of metals containing residual activity. Mr. Duvall has over two dozen publications dealing with such topics as developing American National Standards Institute (ANSI) standards for stack sampling of radioactive air emissions which has led to the basis for new EPA regulations, MARSSIM data quality objectives, MARSSIM implementation, radiological survey methodology, calibration of laboratory systems to measure ionizing radiation, dosimetry, development of standards for neutron sources, and various other radionuclide measurement methods. Mr. Duvall has received his B.S. in Physics and has taken graduate level courses in Nuclear Physics.

Mr. Wayne M. Glines, CHP, Senior Technical Advisor for Radiological Controls at the U.S. Department of Energy's Hanford Site

Mr. Wayne M. Glines is a senior technical advisor for radiological controls at the Department of Energy's Hanford Site where he also serves as the program manager for radiological site services, including external and internal dosimetry programs, radiological instrumentation, and radiation exposure records. Mr. Glines also serves as the technical lead for the radiological release of property from the Hanford site. He holds a B.S. in Physics from the University of New Hampshire, and a M.S. in Radiological Sciences from the University of Washington. Prior to his current position at the Hanford Site, Mr. Glines managed environmental monitoring programs at the Nevada Test Site for the Department of Energy where he also served as the lead senior scientist for data analysis and assessment, and at the Puget Sound Naval Shipyard for the Department of Navy where he also served as a senior health physics advisor. Mr. Glines currently chairs the Hanford Personnel Dosimetry Advisory Committee and serves on the Hanford Instrumentation Evaluation Committee. During his career Mr. Glines has chaired or served on a broad range of technical committees and working groups including the Effluent and Environmental Monitoring Working Group for the Nevada Test Site, the Department of Energy Plutonium Working Group, the Department of Energy BEIR VII review team, the State of Washington Protective Action Recommendations Working Group, and the Hanford Site Release/Recycle/Reuse Working Group. Mr. Glines has been a member of the Health Physics Society since 1982, a Certified Health Physicist since 1985, and a member of the

Health Physics Society Standards Committee since 2000.

Mr. Balwan S. Hooda, CHP, Project Engineer, Environmental and Waste Management Services Division, Brookhaven National Laboratory

Mr. Balwan Hooda is an Environmental Radiation Program Manager/ Project Engineer with the Environmental and Waste Management Services Division at the Brookhaven National Laboratory, operated by Brookhaven Science Associates for the Department of Energy. Mr. Hooda received his first B.S. degree in Biological Sciences from Kurukshetra University, India and subsequently another B.S. in Health Physics from the University of Las Vegas, Nevada. He received his M.S. in Environmental and Waste Management from Stony Brook University, New York. In his current position, Mr. Hooda serves dual functions as subject matter expert and leads the environmental radiation protection program. He provides technical support to the Laboratory's research function with experimental safety and process reviews in radiation protection/shielding, and develops the data quality objectives to protect the environment and the members of the public. He ensures that the Laboratory is in compliance with regulatory and technical requirements for air emissions, and performs radiation dose risk calculations, pathway analyses, runs computer models, reviews and interprets radiological data, and interacts with regulatory compliance agencies. He is the lead auditor of International Standards Organization (ISO) 14001 Environmental Management System, and supports pollution prevention and environmental sustainability initiatives. He has authored and co-authored many technical peer reviewed papers and reports. He is certified by American Board of Health Physics, and is a plenary member of the Health Physics Society.

Dr. Janet A. Johnson, Senior Technical Advisor, MFG, Inc.

Dr. Janet A. Johnson is currently employed by MFG, Inc. in Fort Collins, CO as a Senior Technical Advisor with expertise in health physics, radiation risk assessment, and environmental health. MFG, Inc., a Tetratech Company, provides environmental engineering consulting services to industry including the mining sector. She holds a BS in Chemistry from the University of Massachusetts, an MS in Radiological Physics from the University of Rochester School of Medicine and Dentistry, and a PhD degree in Microbiology (Environmental Health) from Colorado State University. Dr. Johnson was formally employed by Colorado State University as Interim Director of Environmental Health Services in Fort Collins, Colorado. She is a certified industrial hygienist (CIH, radiological aspects) and is also certified in the comprehensive practice of health physics by the American Board of Health Physics. She is an active member of a number of radiation and health-oriented professional organizations, and is a Fellow of the Health Physics Society (HPS), as well as a former member of the Board of Directors of the HPS. She has served on the Colorado Radiation Advisory Committee since 1988 and was a member of the Colorado Hazardous Waste Commission (1992-1997). Dr. Johnson's primary consulting work focuses on the mining industry with emphasis on uranium recovery facilities. She is also involved in developing technical basis documents for the National Institutes of Occupational Safety and Health (NIOSH) dose reconstruction project under the Energy Employees Occupational Illness Compensation Program Act (EEOICPA). Dr.

Johnson is a former chair of the Radiation Advisory Committee. In addition, she chaired the ERAMS II advisory (EPA-SAB-RAC-ADV-98-001, August 28, 1998), and was involved in the recent SAB review of the Agency's RadNet air monitoring network concept and plan.

Dr. Thomas E. Johnson, Department of Environmental and Radiological Health Sciences,
Colorado State University

Dr. Thomas Johnson is an Assistant Professor in the Department of Environmental and Radiological Health Sciences at Colorado State University. His research efforts are on decontamination of surfaces, acute effects of ionizing radiation, the effect of lasers on the skin and cornea and laser safety standards. Prior to attaining his current position, he was an Assistant Professor and Post Doc at Uniformed Services University. He holds a BS from Southern Illinois University, an MBA from the University of Illinois, an MS in Environmental Engineering from Northwestern University and PhD in Health Physics from Purdue University. Currently he teaches two classes on radiation detection instrumentation at Colorado State University at the graduate level. These classes examine theory and application of instrumentation and statistics associated with radiation detection. He has worked in consulting, electric generating plants, and hospitals. During his tour in the Navy he was a nuclear power plant operator on the fast attack submarine USS Cavalla. He is currently a reservist in the USAF on the Air Force Radiation Assessment Team. His position on the Air Force Radiation Assessment team requires extensive knowledge of the use and limitations of radiation detection equipment in a variety of situations with all types of radionuclides. Both positions require him to maintain extensive knowledge of the latest developments in radiation detection instruments and techniques. He is co-author with Herman Cember of the textbook *"The Health Physics Solutions Manual"* and is currently working with Dr Cember on the fourth edition of the textbook *"Introduction to Health Physics"*. Additionally, he is a Certified Health Physicist, and Registered Radiation Protection Technologist.

Dr. Bernd Kahn, Professor Emeritus, School of Nuclear Engineering and Health Physics and
Head of the Environmental Radiation Center, Georgia Institute of Technology

Dr. Kahn is Head of the Environmental Radiation Center since 1974 (formerly the Environmental Resources Center) and now Professor Emeritus of the Nuclear and Radiological Engineering and Health Physics Programs at Georgia Institute of Technology (GIT). He received his B.S. in Chemical Engineering from Newark College of Engineering (Now New Jersey Institute of Technology), M.S. in Physics from Vanderbilt University and Ph.D. in Chemistry from the Massachusetts Institute of Technology. He was Adjunct Professor of Nuclear Engineering at the University of Cincinnati (1970-1974), Chief of the Radiological & Nuclear Engineering Facility at the U.S. EPA's National Environmental Research Center (1970-1974), undertaking research in environmental, medical, and biological radiological programs, including studies of radioactive fallout in food, radionuclide metabolism in laboratory animals, and SR-90 balances in human infants; an Engineer/Radiochemist with the U.S. Public Health Service (1954-1970), evaluating the treatment of low-and intermediate-level radioactive wastes; and a Health Physicist and Radiochemist with Union Carbide Corporation (1951-1954).

Dr. Kahn has served on a number of distinguished committees, panels and commissions, including the National Research Council committees on decontamination and decommissioning of uranium enrichment facilities, buried transuranium waste, single shell tank wastes, Panel on Sources and Control Technologies, Committee on Nuclear Science, and Subcommittee on the Use of Radioactivity Standards. Dr. Kahn has served on the U.S. EPA SAB's Radiation Advisory Committee, having been on the RAC reviews of both ERAMS I and ERAMS II, the predecessor systems to RadNet, as well as the recent RadNet review. Dr. Kahn has also served on RAC reviews involving MARSSIM, as well as the MARLAP review on laboratory radiation measurement protocols. He has served on the National Council on Radiation Protection and Measurements (NCRP) Scientific Committees as Chair of the Scientific Committee 64-22 for Effluent and Environmental Monitoring, Chair of the Task Group 5 on Public Exposure from Nuclear Power, member of the Scientific Committee 84 on Radionuclide Contamination, member of the Scientific Committee 64 on Environmental Issues, member of the Scientific Committee 63-1 on Public Knowledge About Radiation Accidents, member of the Scientific Committee 38 on Accident-Generated Waste Water, member of the Scientific Committee 18A on Radioactivity Measurement Procedures, and member of the Scientific Committee 35 on Environmental Radiation Measurements.

Dr. Kahn is widely published with over 160 publications on the topics of radiation measurements, monitoring and protocols, fate of radionuclide discharges, critical pathways for radiation and population exposure, radiochemical analyses for environmental studies, airborne radiation in buildings, emergency response to accidents involving radioactive materials, airborne fallout, sources, fate and occurrences and health effects of radionuclides in the environment, surveillance of radionuclides in the food chain, integrated environmental measurement, germanium detectors and other devices, decommissioning procedures and radiation-related topics.

Dr. Igor Linkov, Managing Scientist, INTERTOX, Inc.

Dr. Linkov is a Managing Scientist with Intertox, Inc. in Brookline, MA, and Adjunct Professor of Engineering and Public Policy at Carnegie Mellon University in Pittsburgh, PA. He has served as Senior Scientist with Cambridge Environmental Inc. in Cambridge, MA, and was a Senior Risk Assessor and Team Leader at ICF Consulting, where he conducted environmental risk assessments in support of government and commercial clients. Dr. Linkov has a BS and MSc in Physics and Mathematics (Polytechnic Institute, Russia) and a Ph.D. in Environmental, Occupational and Radiation Health (University of Pittsburgh). He completed his post doctoral training in Biostatistics and Toxicology and Risk Assessment at Harvard University. Dr. Linkov's skills include human health and ecological risk assessment, decision analysis, environmental security, risk assessment for emerging threats, radiation health and safety, guidance development, risk communication, policy analysis, and biostatistics. Dr. Linkov is currently supporting a large DOE project developing software tools for risk-based decision making and redevelopment scenario planning for former military sites contaminated with radionuclides and chemicals. Dr. Linkov was a consultant to the International Atomic Energy Agency BIOMASS program on radionuclide fate and transport modeling and dose calculation. He managed a project supporting the Radiation Health and Safety program at the U.S. Army

Soldier Systems Center (SSC) in Natick, Massachusetts. For EPA, he developed a guidance that informs site investigation personnel of the potential for radioactive and chemical contamination associated with manufacturing industries at sites in which radiological risks may not be readily apparent. He also supported investigations and Brownfield redevelopment of a former manufacturing site contaminated with TENORM waste. He was a peer reviewer for human health and ecological risk assessments at Oak Ridge and Hanford sites and served as an expert in a radiation dose reconstruction project. He has published widely on environmental policy, environmental modeling, and risk analysis, including nine books and over 90 peer-reviewed papers and book chapters.

Dr. Linkov has organized more than a dozen national and international conferences and continuing education workshops on risk assessment, radioecology, decision analysis, risk communication and modeling and participated in organizing many others. Dr. Linkov serves as a Scientific Advisor to the Toxic Use Reduction Institute, a position that requires nomination by the Governor of Massachusetts. Dr. Linkov is the Founding Chair of the Society for Risk Analysis (SRA) Decision Analysis and Risk Specialty Group, and is Past President for the SRA – New England. He is also Past Chair of the SRA Ecological Risk Assessment Specialty Group and participates in several SRA and Society of Environmental Toxicology and Chemistry (SETAC) Committees. Dr. Linkov is the recipient of the prestigious 2005 SRA Chauncey Starr Award for exceptional contribution to Risk Analysis, and has served on many review and advisory panels for U.S. and international agencies, including the US EPA Science Advisory Board (SAB). Over the past few years, Dr. Linkov's research has been supported by the US Army, Army Corps of Engineers, EPA, DOT, DOJ, NOAA, North Atlantic Treaty Organization, US Chamber of Commerce, and various private clients.

Dr. June Fabryka-Martin, Staff Scientist, Los Alamos National Laboratory

Dr. June Fabryka-Martin is a Staff Scientist in the Environmental and Earth Sciences Division at Los Alamos National Laboratory (LANL) in Los Alamos, NM. She holds a PhD and MS in Hydrology and Water Resources from the University of Arizona and received a BA degree in Geography from the University of Delaware. Dr. Fabryka-Martin's work experiences span a broad range of topics related to radiological issues, focusing on the interpretation of geochemical and radionuclide compositions as indicators of groundwater flow paths and residence times; characterization of transuranic waste streams produced by past LANL activities, and evaluation of the effects of residual drilling products on the reliability of contaminant data from monitoring wells. Her Yucca Mountain studies of spatial distributions of chloride and chlorine-36 in the subsurface played significant roles in the development and testing of hydrologic process models for assessing the viability of this site as a geologic repository for radioactive waste, in particular by highlighting the potential role of fast transport paths in this geologic setting.

Dr. Fabryka-Martin previously served as a member of the US EPA Science Advisory Board's Radiation Advisory Committee, and has contributed to over 11 SAB reports and advisories over the past decade, including those reviewing the Agency's use of such models as MMSOILS, PATHRAE, PRESTO, and RESRAD. She was senior editor for the SAB's review of the Multi-Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual, and most

recently contributed to the SAB Regulatory Environmental Models (REM) Review Panel's report critiquing the Agency's Draft Guidance on the Development, Evaluation, and Application of Regulatory Environmental Models and Models Knowledge Base (EPA-SAB-06-009), dated August 22, 2006.

As a LANL employee, Dr. Fabryka-Martin works for the Los Alamos National Security LLC on projects funded by the U.S. Department of Energy and the National Nuclear Security Agency.

Dr. Paul J. Merges, President, Environment & Radiation Services, Inc.

Dr. Paul J. Merges is President (2003 to present) of Environment & Radiation Services, Inc. which provides consultant services on issues, such as radioactive, hazardous, solid and mixed wastes, facility siting, waste profiles, environmental and public health impacts, including radiological assessments. Dr. Merges has worked in a number of capacities with New York State's (NYS) Department of Environmental Conservation (DEC) since 1973, most recently (1998 through 2003) as Director of DEC's Bureau of Radiation & Hazardous Site Management. This Hazardous Site Management program was DEC's implementation of the Resource Conservation, Recovery, and Control Act - Corrective Action (RCRA-CA) program. He served as DEC's Director of Bureau of Pesticides & Radiation (1995-1998), Chief of DEC's Bureau of Radiation (1987-1995), Director of DEC's Bureau of Energy and Radiation (1983-1987), Chief Environmental Analyst of DEC as Project Manager for environmental impact statement on SO₂ policy and State Air Quality Implementation Plan for NYS, including analysis of "acid rain" mitigation measures, as well as a hearing examiner on this policy and EIS. He also served as Director, Bureau of Energy (1977-1982), and Associate Director of DEC's Division of Regulatory Affairs (1980-1982).

Dr. Merges served as an Adjunct Professor in Rensselaer Polytechnic Institute's (RPI) Graduate School of Environmental Engineering (1979-1999). He served as an Energy Specialist at DEC for power plant and transmission facility siting. He also served as a Senior Industrial Scientist (Nuclear Physics) in NYS Department of Commerce (1970-1973) preparing technical analyses pertaining to the design and safety of nuclear facilities. He served as a Nuclear Engineer with Knolls Atomic Power Laboratory (1965-1970) where he was involved in design and analysis, testing, and evaluation of prototype and shipboard nuclear reactors.

Dr. Merges previously served on the U.S. Environmental Protection Agency's (EPA) Science Advisory Board (SAB) Radiation Advisory Committee (RAC), and was involved in providing advice on the Multi-Agency Work Group's Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) Document. He was also involved in the SAB's Secondary Data Use Committee. He served in the Conference of Radiation Control Program Directors (Past Chairman 2002-2003), the National Council on Radiation Protection and Measurements (NCRP) Scientific Committee 87-5 dealing with Risk Management and Analysis for Decommissioned Sites (2002-2004), and in a number of other professional organizations and activities. Dr. Merges has published articles on low level and other radioactive wastes laws and regulatory control programs, site cleanup, conversion to coal of oil-fired power plants (Ph.D. Dissertation),

alternative energy siting issues, management of regulatory offsets for communities hosting a low level radioactive waste management facility , state assistance and risk-based financial assurance for low-level waste disposal facilities, transportation of radioactive wastes, state sharing of costs of Nuclear Regulatory Commission sponsored training, environmental impact assessments, how clean is clean workshops and guidance, environmental monitoring for low-level radioactive waste disposal sites, MARSSIM - some areas for improvement, West Valley radiological cleanup criteria, and approaches to risk management in remediation of radioactively contaminated sites.

Dr. Merges received his B.S. in Physics (Siena College), and M.S. in Environmental Engineering (Rensselaer Polytechnic Institute, RPI) specializing in Radiation Health, and Ph.D. (RPI) in Urban and Environmental Studies with an emphasis on energy and environmental analysis.

Mr. Anibal L. Taboas, Executive Consultant for Strategic Leadership & Risk Management, R. Lopez & Associates

Mr. Anibal L. Taboas serves as an executive consultant on environment, governance, and risk management issues, working at R. Lopez & Associates. He has significant experience as a federal senior executive in the operation of major research facilities, the nuclear fuel cycle, and environmental remediation. Mr. Taboas has graduate degrees in Physics and in Nuclear and Mechanical Engineering, has completed various other programs such as in Corporate Governance, and was a Federal Contracting Officer. He serves on various editorial boards of peer-reviewed journals, has over 50 peer-reviewed publications, including *The Decommissioning Handbook*. Mr. Taboas is a Fellow of the American Society of Mechanical Engineers and a member of the Board of Directors of the Center of Excellence for Hazardous Materials Management. He is active in pro bono activities, advising on educational leadership and strategic planning, as well as reviewing proposals for the National Science Foundation, and chairing the upcoming International Conference on Environmental Management. Awards in recognition of some of his accomplishments include the Secretary of Energy Gold Medal, the Vice President's Hammer Award, the Broken Knuckle Award, a Doctor of Science, and several Exceptional Service Awards. Mr. Taboas has a well-established reputation for innovative resolution of environmental issues, developing executives, and for support of inclusion, diversity, and independent peer review.