Effects of the Deletion of Chemical Agent Washout on Operations at the Blue Grass Chemical Agent-Destruction Pilot Plant

Committee

Gary S. Groenewold

Chair

Dr. Gary S. Groenewold is a scientific fellow in the Energy and Environment Directorate at the Idaho National Laboratory (INL), where he has conducted research in surface chemistry, gas-phase chemistry, and analytical measurement since 1991. His research has focused on determining speciation and reactivity of radioactive and toxic metals (U, Np, Pu, Hg), and of toxic organic compounds (including VX, mustard and sarin). Prior to 1991, Dr. Groenewold served in line management at the INL and as the technical leader for the organic analysis group. Before coming to the INL, Dr. Groenewold worked in anticancer drug discovery for Bristol-Myers, and conducted research in surface chemistry during a postdoctoral fellowship at the Oak Ridge National Laboratory. He received a Ph.D. in chemistry at the University of Nebraska in 1983, where he studied ion molecule condensation and elimination reactions under the direction of Michael Gross. He has authored more than 130 research articles in these areas, and has served on several ad hoc committees for the National Research Council. He currently chairs the Chemical Demilitarization Standing Committee for the NRC.

Herek L. Clack

Member

Professor Herek L. Clack is a research associate professor in the Department of Civil and Environmental Engineering at the University of Michigan. Previously, he was an associate professor in the Mechanical, Materials, and Aerospace Engineering Department at the Illinois Institute of Technology. He received his B.S. in Aeronautical and Astronautical Engineering from MIT (1987), and his M.S. (1997) and Ph.D. (1998) in Mechanical Engineering from the University of California, Berkeley. Prior to joining the IIT faculty, Dr. Clack was an NRC Postdoctoral Fellow in residence at the National Institute of Standards and Technology in Gaithersburg, Maryland (1998-1999) and a Member of the Technical Staff at the Rocketdyne Division of Boeing Corporation (1987-1992). He is engaged in research and publication in the general area of transport phenomena within dispersions. In particular, his research addresses combustion of droplets and sprays and mercury emissions from combustion.

Richard C. Flagan

Member

Professor Richard C. Flagan, NAE, is the Irma and Ross McCollum/William H. Corcoran Professor of Chemical Engineering and Chair of the Faculty at the California Institute of Technology.

The author of over 340 journal articles and one book, Professor Flagan holds 23 patents for developments in aerosol instrumentation , and materials processing. His work has been honored by the Fuchs Award presented by the American Association for Aerosol Research, Gesellschaft für Aerosolforschung and Japan Associate for Aerosol Science and Technology, American Chemical Society Award for Creative Advances in Science and Technology, Thomas Baron Award of the American Institute of Chemical Engineers, among others.

He received his BS in Mechanical Engineering from the University of Michigan in 1969, and his Ph.D., also in Mechanical Engineering, from the Massachusetts Institute of Technology in 1973. Professor Flagan joined the Caltech faculty in 1975, and developed an internationally recognized research program in environmental and non-environmental aerosols.

Rebecca A. Haffenden, Esq.

Member

Ms. Rebecca A. Haffenden, Esq., currently serves part-time as a Program's Attorney at Argonne National Laboratory. Her recent professional work has included work for the U.S. Department of Homeland Security to evaluate legislation and regulations associated with security
vulnerabilities; and providing legal expertise to programs involving federal facility site remediation and hazardous waste compliance and corrective actions (RCRA). She also coauthored a working paper on the application of federal and state hazardous waste regulatory programs to waste chemical agents, in addition to being a co-author of The Environmental Impact Statement for the Assembled Chemical Weapons Alternates program. Ms. Haffenden received a B.A. in Psychology from the University of Illinois, and J.D. from Suffolk Law School, Boston, Massachusetts.

Thom J. Hodgson

Member

Dr. Thom J. Hodgson, NAE is a Distinguished University Professor in the Edward P. Fitts Industrial & Systems Engineering Department at North Carolina State University. Dr. Hodgson's research has focused on scheduling and logistics. The problem areas run the gamut from classic job shop scheduling, to specific industrial scheduling problems, to supply chain issues, to military logistics and operational problems. Dr. Hodgson is a member of the Institute of Industrial Engineers and the Institute for Operations Research and the Management Sciences. Dr. Hodgson earned his BSE in Science Engineering in 1961, his MBA in Quantitative Methods in 1965, and his Ph.D. in Industrial Engineering in 1970, all from the University of Michigan.

Murray G. Lord

Member

Mr. Murray Glenn Lord is Director of the Environmental Health and Safety (EH&S) in the EH&S Operations Technology Center at Dow Chemical Company. He is responsible for research program for technology development for Global Environmental Operations which includes project areas in Process Optimization, Technology Development and Capital Project execution. Mr. Lord has experience in project areas across multiple business and technology areas. He is also accountable for EH&S performance, budget performance, project development, and personnel leadership of research group from 4 locations, and he is the leader of the Environmental Technology Leadership Group – accountable for environmental technology development for Dow.

Previously, Mr. Lord was a Technical Leader of Propylene Oxide Process Research and was responsible for research program in support of technology development of the propylene oxide process. He was also responsible for development and coordination of research studies at laboratory, pilot plant and full commercial scale.

William J. Ward, III

Member

Dr. William J. Ward, NAE, is currently a retired research engineer. He joined the General Electric Corporate Research and Development Center in 1965, where for 10 years he worked full time in the area of membrane gas separations. In subsequent years he worked part time with GE and other colleagues on membranes. He did pioneering work on facilitated transport in immobilized liquid membranes, and on ultra-thin polymeric membranes. The latter resulted in a medical oxygen enrichment appliance. Dr. Ward was a manager from 1976 to 1979, after which he resumed full-time research activities in the area of catalysis. His catalysis work in the 1980's provided new understanding of, and a much-improved catalyst for the chemical reaction that is at the heart of the silicone polymer industry.

From 1990 until 1995 Dr. Ward worked on understanding and improving the performance of polyurethane foam insulation, and on solving problems associated with the elimination of chlorofluorocarbons as foam blowing agents. From 1996 through 1998 he was the technical leader of a team that made another major advance in the synthesis of silicone polymers. In his last three years at GE he was involved in a successful effort to develop a manufacturing process to produce a ceramic metal halide lamp. After retiring from GE in 2000 he has consulted for GE and other companies, including those associated with Walter Robb. In 1987, he was elected to the National Academy of Engineering. Dr. Ward has 29 publications in refereed journals, and 40 patents.