Sustainable Fuel Cycle
TASK FORCE
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Sustainable Fuel Cycle Task Force Science Panel

November 18, 2009

The Honorable Steven Chu
Secretary
United States Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

Dear Secretary Chu:

We are writing to you to express concerns, which are shared by a number of our technical colleagues, about the way that the science supporting Yucca Mountain has been characterized. In particular we are concerned with the response from Acting OCRWM Director Mr. Kouts to our October 7th letter to you which states "the Administration does not view Yucca Mountain as a workable option".

We are not aware of any scientific basis for the Yucca Mountain site to be judged unworkable. This view is shared by the Sustainable Fuel Cycle Science Panel, whom we represent, and whose members (see attached biographies) have many decades of senior scientific experience. In support of our position, we note that such august groups as the Nuclear Waste Technical Review Board, specially empanelled national and international peer reviews, the US Geological Survey, and all of the DOE National Laboratories have never stated any scientific bases for the site being unworkable; nor have they ever recommended curtailing the licensing process.

From a regulatory perspective, the NRC technical safety review of the Yucca Mountain license application has been going forward with no new scientific issues being raised. The DOE OCRWM team has successfully responded to over 500 NRC staff Requests for Additional Information. Even with much reduced resources, scientific safety issues seem to be well on their way to being resolved in a comprehensive, open and transparent public manner. There is no scientific reason to curtail this licensing process and it should continue as the President delineated in the FY 2010 budget request and as you have proposed in your Congressional testimony of June 2009.

We believe that continuation of the licensing process is consistent and supportive of your plans for a Blue Ribbon Commission to explore alternatives. Regardless of future technology development, there is no known permanent workable disposal alternative other than in a geologic disposal site. Such a site would likely have to be licensed under comprehensive EPA/ NRC regulatory processes that could extend out to one million years. No one has ever licensed anything under such comprehensive requirements. Much can be learned from continuing the licensing process even if the Yucca site is never built.

We soundly support President Obama's March 9th, 2009 Memorandum on Scientific Integrity and are perplexed as to the basis for Mr. Kouts' "unworkable" statement and rumors that licensing activities may be discontinued. We support your plans to explore new alternative approaches, but until another disposal site is designated under law, we believe that our nation should continue and learn from the NRC Yucca Mountain licensing process. We believe also that passing this problem on to our grandchildren without a disposal solution is unacceptable from an intergenerational responsibility perspective.

Yours sincerely,

Charles Fairhurst, Ph.D.

D. Warner North Ph.D.

Eugene H. Roseboom Jr., Ph.D.

Wendell Weart, Ph.D.

For the
Sustainable Fuel Cycle Task Force Science Panel

Cc: Dr John Holdren, Ph.D.
Director OSTP

Science Panel Biographies

Dr. Ronald Ballinger, Ph.D.

Dr. Ronald G. Ballinger is a Massachusetts of Technology (MIT) Professor of Nuclear Science and Engineering and Materials Science and Engineering and is also the Head of the H.H. Uhlig Corrosion Laboratory at MIT. He is an expert in the corrosion of metals and serves on various expert national and international groups on materials behavior under challenging environments. He served for 8 years in the nuclear navy (submarines) before attending college. Professor Ballinger has authored or co-authored more than 100 scientific publications and consults for the US Nuclear Regulatory Commission, US Department of Energy, and industry in the areas of environmental degradation of materials and failure root cause and analysis.

Dr. Charles Fairhurst, Ph.D.

Dr. Fairhurst, Professor Emeritus of the University of Minnesota, has more than 50 years of experience in mining rock mechanics and has consulted on rock stability problems for tunnels, dams, mines and excavations throughout the world. He served as President of the International Society of Rock Mechanics from 1991 through 1995, and on numerous International and US National Academies of Science Panels, including the Board of Radioactive Waste Management; reviewer and advisor to government agencies on nuclear waste disposal. He has also served on the US Nuclear Regulatory Commission's Advisory Committee on Nuclear Waste as well as review/advisory committees in France, Sweden, Russia, China and the IAEA. (Vienna).

He has been elected to the U.S. National Academy of Engineering and the Royal Swedish Academy of Engineering Sciences. Dr. Fairhurst has received honorary doctorate degrees from the University of Nancy, France; St. Petersburg Mining Academy, Russia; University of Sheffield, England; and University of Minnesota, USA, and is Advisory Professor to Tongji University, Shanghai, China.

Dr. Warner North, Ph.D.

D. Warner North is president and principal scientist of NorthWorks, Inc., a consulting firm in Belmont, California, and consulting professor in the Department of Management Science and Engineering at Stanford University. Over the past forty years Dr. North has carried out applications of decision analysis and risk analysis for numerous governments and private concerns regarding energy and environmental protection.

Dr. Warner North, Ph.D. – Continued

Dr. North has served as a member and consultant to the Science Advisory Board of the US Environmental Protection Agency since 1978, and as a Presidentially appointed member of the US Nuclear Waste Technical Review Board (1989-1994). Dr. North is a co-author of many reports dealing with environmental risk for the National Research Council of the National Academy of Sciences.

Dr. North was a member of the Board on Radioactive Waste Management of the National Research Council from 1995 until 1999. He was the Chairman for the NAS report: "Disposition of High-Level Waste and Spent Nuclear Fuel: The Continuing Societal and Technical Challenges," published in June 2001.

Dr. North is a past president (1991-92) of the international Society for Risk Analysis, a recipient of the Frank P. Ramsey Medal from the Decision Analysis Society in 1997 for lifetime contributions to the field of decision analysis, and the 1999 recipient of the Outstanding Risk Practitioner Award from the Society for Risk Analysis.

Dr. North received his Ph.D. in operations research from Stanford University and his B.S. in physics from Yale University.

Dr. Eugene Roseboom, Ph.D.

Dr. Roseboom is a research geologist and geochemist. He synthesized ore- and rock-forming minerals and determined their conditions of origin. He was elected a Fellow of the American Mineralogical Society and received the Meritorious Service Award of the Department of Interior. He has written several papers regarding the safe disposal of radioactive wastes, one of which was highly influential with the US Nuclear Regulatory Commission in revising its regulations to include the unsaturated zone. He has served as a United States Geological Survey Deputy Assistant Director for Engineering Geology and also as the Director's representative to the Nuclear Regulatory Commission on nuclear waste, and to NRC's Advisory Committee on Nuclear Waste (ACNW). After retiring from the USGS in 1994, he was a Scientist Emeritus until 2008.

Dr. Wendell Weart, Ph.D.

Dr. Wendell Weart is a retired earth scientist from Sandia National Laboratory where for 25 years he was Scientific Program Manager for the Waste Isolation Pilot Plant. At Sandia he became a "Fellow" and Senior Scientist for Nuclear Waste management Programs at Sandia. He has served on National Academies of Science Panels and has been a senior scientific advisor to numerous international panels. He has been recognized as scientific leader as he was the recipient of the first annual "Wendell D. Weart Lifetime Achievement Award" from the Waste Management Symposium.

Dr. Ruth Weiner, Ph.D.

Dr. Weiner is a Principal Member of the Technical Staff of Sandia National Laboratories, and is the Project Lead for Radioactive Materials Transportation Risk Assessment. She also served as tenured professor of chemistry and environmental studies at three different universities, and was Professor of Environmental Studies at Western Washington University for 20 years. She was a member of the NRC Advisory Committee on Nuclear Waste and is an adjunct professor in the Department of Nuclear Engineering at the University of Michigan.

Dr. Weiner is co-author of two textbook series: *Environmental Engineering and Environmental Pollution and Control*, which are in their fourth editions, and has published more than 130 technical papers. She has served as a Congressional Science Fellow and was recently elected a Fellow of the American Nuclear Society. She is a member of AAAS, INMM, and the Health Physics Society.

Dr. Isaac J. Winograd, Ph.D.

Dr. Isaac J. Winograd is a Senior Scientist Emeritus at the U. S. Geological Survey. Over a 50-year career, all with the Survey, his research interests spanned the fields of hydrogeology, low temperature geochemistry, radioactive waste disposal, and Pleistocene paleoclimatology. He is a Fellow of the AAAS, American Geophysical Union, and the Geological Society of America.

In 1978 he served on President Carter's Interagency Review Group on Radioactive Waste Disposal. His 1974 and 1981 papers (published respectively in Eos and in Science) introduced the theoretical framework for utilization of the thick unsaturated zones of the Southwest for the disposal of spent nuclear fuel and other solidified toxic wastes.