Re: Docket ID No. NRC-2012-0246, WC DGEIS, NUREG-2157

Dec. 20, 2013

Dear NRC Nuclear Waste Confidence Directorate,

As you are well aware, many hundreds of environmental organizations, representing all 50 states, have long called for Hardened On-Site Storage (HOSS) as the least-worst interim measure for safeguarding and securing irradiated nuclear fuel that already exists in the U.S.

Dr. Arjun Makhijani, President of IEER, and one of the expert witnesses on behalf of an environmental coalition representing dozens of groups, including Beyond Nuclear, in this proceeding, coined the phrase "Hardened On-Site Storage (HOSS)" at a national environmental gathering in April 2002 held in Middletown, CT at Wesleyan University. The event was organized by Citizens Awareness Network of the Northeast.

The Statement of Principles for Safeguarding Nuclear Waste at Reactors, an explication of HOSS, was first unveiled on Capitol Hill at a U.S. House hearing in September 2006 by Michele Boyd, on staff at Physicians for Social Responsibility. Already at that time, the Statement had been endorsed by well over 100 groups, representing all 50 states.

The Statement of Principles was updated in August 2009 to include concerns about reprocessing. By March 2010, well over 170 organizations had signed on – including a number of coalitions, such as Alliance for Nuclear Accountability (a network of some three dozen groups), Michigan Environmental Council (a state-wide coalition of more than 70 groups), etc. Thus, the Statement is endorsed by hundreds of groups, representing all 50 states.

HOSS represents the national environmental consensus position for addressing the dire risks of pool storage, as well as current dry cask storage, not decades or centuries into the future, but right now.

Thank you.

Sincerely,

Kevin Kamps
Radioactive Waste Watchdog, Beyond Nuclear
6930 Carroll Ave., Ste. 400
Takoma Park, MD 20912
Principles for Safeguarding Nuclear Waste at Reactors

The following principles are based on the urgent need to protect the public from the threats posed by the current vulnerable storage of commercial irradiated fuel. The United States does not currently have a national policy for the permanent storage of high-level nuclear waste. The Obama administration has determined that the Yucca Mountain site, which has been mired in bad science and mismanagement, is not an option for geologic storage of nuclear waste. Unfortunately, reprocessing proponents have used this opportunity to promote reprocessing as the solution for managing our nuclear waste. Contrary to their claims, however, reprocessing is extremely expensive, highly polluting, and a proliferation threat, and will actually complicate the management of irradiated fuel. Nor will reprocessing obviate the need for, or “save space” in, a geologic repository.

The United States has a unique opportunity to re-evaluate our nuclear waste management plan. We can make wise decisions about safeguarding radioactive waste or go down the risky, costly, and proliferation prone path towards reprocessing.

The undersigned organizations’ support for improving the protection of radioactive waste stored at reactor sites is a matter of security and is in no way an indication that we support nuclear power and the generation of more nuclear waste.

➢ **Require a low-density, open-frame layout for fuel pools**: Fuel pools were originally designed for temporary storage of a limited number of irradiated fuel assemblies in a low density, open frame configuration. As the amount of waste generated has increased beyond the designed capacity, the pools have been reorganized so that the concentration of fuel in the pools is nearly the same as that in operating reactor cores. If water is lost from a densely packed pool as the result of an attack or an accident, cooling by ambient air would likely be insufficient to prevent a fire, resulting in the release of large quantities of radioactivity to the environment. A low density, open-frame arrangement within fuel pools could allow enough air circulation to keep the fuel from catching fire. In order to achieve and maintain this arrangement within the pools, irradiated fuel must be transferred from the pools to dry storage within five years of being discharged from the reactor.

➢ **Establish hardened on-site storage (HOSS)**: Irradiated fuel must be stored as safely as possible as close to the site of generation as possible. Waste moved from fuel pools must be safeguarded in hardened, on-site storage (HOSS) facilities. Transporting waste to interim away-from-reactor storage should not be done unless the reactor site is unsuitable for a HOSS facility and the move increases the safety and security of the waste. HOSS facilities
must not be regarded as a permanent waste solution, and thus should not be constructed deep underground. The waste must be retrievable, and real-time radiation and heat monitoring at the HOSS facility must be implemented for early detection of radiation releases and overheating. The overall objective of HOSS should be that the amount of releases projected in even severe attacks should be low enough that the storage system would be unattractive as a terrorist target. Design criteria that would correspond to the overall objective must include:

- Resistance to severe attacks, such as a direct hit by high-explosive or deeply penetrating weapons and munitions or a direct hit by a large aircraft loaded with fuel or a small aircraft loaded with fuel and/or explosives, without major releases.
- Placement of individual canisters that makes detection difficult from outside the site boundary.

➢ **Protect fuel pools:** Irradiated fuel must be kept in pools for several years before it can be stored in a dry facility. The pools must be protected to withstand an attack by air, land, or water from a force at least equal in size and coordination to the 9/11 attacks. The security improvements must be approved by a panel of experts independent of the nuclear industry and the Nuclear Regulatory Commission.

➢ **Require periodic review of HOSS facilities and fuel pools:** An annual report consisting of the review of each HOSS facility and fuel pool should be prepared with meaningful participation from public stakeholders, regulators, and utility managers at each site. The report must be made publicly available and may include recommendations for actions to be taken.

➢ **Dedicate funding to local and state governments to independently monitor the sites:** Funding for monitoring the HOSS facilities at each site must be provided to affected local and state governments. The affected public must have the right to fully participate.

➢ **Prohibit reprocessing:** The reprocessing of irradiated fuel has not solved the nuclear waste problem in any country, and actually exacerbates it by creating numerous additional waste streams that must be managed. In addition to being expensive and polluting, reprocessing also increases nuclear weapons proliferation threats.
National
Leonor Tomero, Center for Arms Control and Non-Proliferation
John Issacs, Council for a Liveable World
Kevin Kamps, Beyond Nuclear
Lynn Thorp, Clean Water Action
Erich Pica, Friends of the Earth
Michele Boyd, Physicians for Social Responsibility
Jim Riccio, Greenpeace
Diane Kreiger, Nuclear Peace Age Foundation
Kevin Martin, Peace Action
Tyson Slocum, Public Citizen
Susan Gordon, Alliance for Nuclear Accountability
Arjun Makhijani, Institute for Energy and Environmental Research
Ken Bossong, SUN Day Campaign
Michael Mariotte, Nuclear Information and Resource Service
Anna Aurilio, Environment America
Winona La Duke, Honor the Earth
Dan Becker, Safe Climate Campaign
Dave Hamilton, Sierra Club
Geoffrey Fettus, Natural Resources Defense Council
Ed Lyman, Union of Concerned Scientists
Susan Shaer, Women’s Action for New Directions (WAND)

Alaska
Stacy Fritz, No Nukes North

Alabama
Garry Morgan, Bellefonte Efficiency and Sustainability Team, Alabama Chapter of BREDL
Tom Moss, North Alabama Peace Network

Arkansas
Pat Youngdahl, Arkansas WAND

Arizona
Stephen M. Brittle, Don’t Waste Arizona
Jack and Felice Cohen-Joppa, Nuclear Resister
Patricia Birnie, GE Stockholder’s Alliance
Russell Lowes, SafeEnergyAnalyst.org
Barbara Warren, Arizona Physicians for Social Responsibility

California
Rochelle Becker, Alliance for Nuclear Responsibility CA
David Hartsough, PEACEWORKERS
Jane Williams, California Communities Against Toxics
Roland Valentine, Desert Citizens Against Pollution
Mary Beth Brangan, Ecological Options Network (EON)
Betty Winholz, SAVE THE PARK
Jacqueline Cabasso, Western States Legal Foundation
Molly Johnson, Grandmothers for Peace-San Luis Obispo County Chapter
Linda Seeley, Terra Foundation
Jane Swanson, San Luis Obispo Mothers For Peace Action Committee
Marylia Kelley, Tri-Valley CARES
Michael Welch, Redwood Alliance
Enid Schreibman, Center for Safe Energy
Jennifer Olarana Viereck, Healing Ourselves and Mother Earth
Dan Hirsch, Committee to Bridge the Gap
Pamela Meidell, Atomic Mirror

**Florida**
Bob Krasowski, Florida Alliance for A Clean Environment, The Zero Waste Collier County Group

**Georgia**
Tom Ferguson, Foundatoin for A Global Community
Bobbie Paul, Georgia WAND
Glenn Carroll, Nuclear Watch South
Bob Darby, Food Not Bombs, Atlanta

**Hawaii**
Henry Curtis, Life of the Land

**Iowa**
Maureen McCue, PSR Iowa

**Idaho**
Beatrice Brailsford, Snake River Alliance
Chuck Broscious, Environmental Defense Institute

**Illinois**
Dave Kraft, Nuclear Energy Information Service
Carolyn Treadway, No New Nukes

**Indiana**
Grant Smith, Citizens Action Coalition of Indiana
John Blair, ValleyWatch, Inc.

**Kansas**
Dave Pack, Kansas City Peaceworks
Anne Suellentrop, Kansas City PSR

**Colorado**
Bob Kinsey, Colorado Coalition for the Prevention of Nuclear War
Sharyn Cunningham, Colorado Citizens Against Toxic Waste, Inc.
Judith Mohling, Rocky Mountain Peace and Justice Center

**Connecticut**
Nancy Burton, Connecticut Coalition Against Millstone
Judi Friedman, People’s Action for Clean Energy
Sal Mangiaglioni, Connecticut Citizens Action Network, Haddam Chapter

**Washington, DC**
Louis Clark, Government Accountability Project

**Delaware**
Alan Muller, Green Delaware
Kentucky
Mary Davis, Earth Island Institute

Louisiana
Nathalie Walker, Advocates for Environmental Human Rights

Massachusetts
Debbie Grinell, C-10 Research and Education Foundation
Deb Katz, Citizens Awareness Network
Mary Lampert, Pilgrim Watch

Maryland
Dagmar Fabian, Crabshell Alliance
Johanna Neumann, Maryland PIRG
Max Obuszewski, Baltimore Nonviolence Center
Lucy Duff, Peace and Justice Coalition-Prince George’s County

Maine
William S. Linnell, Cheaper, Safer Power
Bruce Gagnon, Global Network Against Weapons & Nuclear Power in Space

Michigan
Keith Gunter, Citizens Resistance at Fermi Two
Michael Keegan, Coalition for a Nuclear Free Great Lakes
Georgia Donovan, Izaak Walton League-Dwight Lydell Chapter
Terry Miller, Lone Tree Council
Patricia Gillis, Voices for Earth Justice
Alice Hirt, Don’t Waste Michigan
Nancy Seubert, IHM Justice, Peace, and Sustainability Office
Lynn Howard Ehrle, International Science Oversight Board-Organic Consumers Association
Kay Cumbow, Citizens for Alternatives to Chemical Contamination
Ronald and Joyce Mason, Swords Into Plowshares Peace Center and Gallery
David Gard, Michigan Environmental Council
Steve Senesi, Kalamazoo Non-Violent Opponents of War

Minnesota
Danene Provencher, West Metro Global Warming Action Group, Inc.
Glady Schmitz, Mankato Area Environmentalists
George Crocker, North American Water Office
Bruce Drew, Prairie Island Coalition
Missouri
Mark Haim, Missourians for Safe Energy
Kat Logan Smith, Missouri Coalition on the Environment

Mississippi
Louie Miller, Mississippi Sierra Club

Montana
Florence Chessin, Missoula Women for Peace, a branch of Women’s International League for Peace and Freedom
E.M.T O’Nan, Protect All Children’s Environment
Avram Friedman, The Canary Coalition
Jim Warren, North Carolina Waste Awareness and Reduction Network
Janet Marsh, Blue Ridge Environmental Defense League

North Carolina
Lewis Patrie, Western North Carolina Physicians for Social Responsibility

New Hampshire
Will Hopkins, New Hampshire Peace Action

New Jersey
Paula Gotsch, Grandmothers, Mother and More for Energy Safety
Norm Cohen, Coalition for Peace and Justice-UNPLUG Salem Campaign

New Mexico
Mervyn Tilden, Sovereign Dine’ Foundation
Janet Greenwald, Citizens for Alternatives to Radioactive Dumping
Joni Arends, Concerned Citizens for Nuclear Safety
Scott Kovac, Nuclear Watch of New Mexico
Greg Mello, Los Alamos Study Group
Don Hancock, Southwest Research and Information Center

Nevada
Judy Treichel, Nevada Nuclear Waste Taskforce
Jim Haber, Nevada Desert Experience

New York
Joanne Hameister, Coalition on West Valley Nuclear Wastes
Anne Rabe, Center for Health, Environment, and Justice
James Rauch, For a Clean Tonawanda Site (FACTS)
Barbara Warren, Citizen’s Environmental Coalition
Phillip Muesegaas, Riverkeeper NY
Tim Judson, Central New York Citizens Awareness Network

Ohio

Chris Trepal, Earth Day Coalition
Terry Lodge, Toledo Coalition for Safe Energy
Sharon Cowdrey, Miamisburg Environmental Safety and Health Network

Oklahoma

Marilyn McCulloch, The Carrie Dickerson Foundation

Oregon

Dona Hippert, Oregon Toxics Alliance
Charles K. Johnson, Center for Energy Research
Nina Bell, Northwest Environmental Advocates
Kelly Campbell, Oregon Physicians for Social Responsibility
Gerry Pollet, Heart of America Northwest

Pennsylvania

David Hughes, Citizen Power
Katherine Dodge, Northwest Pennsylvania, Audobon Society
Gene Stilp, Taxpayers and Ratepayers United
Ernest Fuller, Concerned Citizens for SNEC Safety
Patricia Harner, Philadelphia Physicians for Social Responsibility
Dr. Lewis Cuthbert, Alliance for a Clean Environment

Rhode Island

Sheila Dormandy, Clean Water Action Rhode Island

South Carolina

Susan Corbett, South Carolina Sierra Club
Dr. Finian Taylor, Hilton Head for Peace

South Dakota

Deb McIntyre, South Dakota Peace and Justice Center
Charmaine White Face, Defenders of the Black Hills

Tennessee

Donald B. Clark, Network for Economic and Environmental Responsibility, United Church of Christ
Rev. Charles Lord, Caney Fork Headwaters Association
Rev. Douglas B. Hunt, Interfaith Power & Light
Ralph Hutchinson, Oak Ridge Environmental Peace Alliance
Rev. Walter Stark, Cumberland Countians for Peace and Justice
Ann Harris, We the People, Inc.

Texas

Eliza Brown, SEED Coalition
Mavis Belisle, JustPeace
Gary Stuard, Interfaith Environmental Alliance
Craig Tounet, Austin Physicians for Social Responsibility

Jill Johnston, Southwest Workers Union
Utah
Margene Bullcreek, Ohngo Guadedah Devia Awareness
Vanessa Pierce, HEAL Utah

Virginia
Scott Sklar, The Stella Group, Inc.
Elena Day, People’s Alliance for Clean Energy

Vermont
Arnie Gundersen, Fairewinds Associates, Inc.
Clay Turnbull, New England Coalition on Nuclear Pollution
Chris Williams, Vermont Citizens Awareness Network
Margaret Harrington Tamulonis, Women’s International League for Peace

Washington
Tom Carpenter, Hanford Challenge

Wisconsin
Charlie Higley, Citizens Utility Board
Bonnie Urfer and John LaForge, Nukewatch Wisconsin
Al Gedicks, Wisconsin Resources Protection Council
Judy Miner, Wisconsin Network for Peace and Justice

West Virginia

Gary Zuckett, West Virginia Citizens Action Group

Wyoming
Mary Woolen, Keep Yellowstone Nuclear Free