

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
Before the Atomic Safety and Licensing Board**

In the Matter of)	Docket No. 72-1050
)	NRC-2016-0231
WCS Consolidated Interim Spent Fuel Storage Facility)	November 17, 2018
)	
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NOTICE OF FILING OF CURRICULUM VITAE OF ROBERT ALVAREZ

Now come Don't Waste Michigan, *et al.*, Joint Petitioners herein, by and through counsel, and file for record the *curriculum vitae* of Robert Alvarez, one of their expert witnesses in this litigation.

/s/ Terry J. Lodge
Terry J. Lodge, Esq.
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Obispo Mothers for Peace, Sustainable Energy and
Economic Development (SEED) Coalition and
Leona Morgan, Individually, Petitioners

CERTIFICATE OF SERVICE

Pursuant to 10 C.F.R. § 2.305, I hereby certify that on November 17, 2018, the foregoing "Notice of Filing of *Curriculum Vitae* of Robert Alvarez" was deposited in the Electronic Information Exchange (the NRC's E-Filing System) in this proceeding, for automated distribution to all registered counsel and parties.

/s/ Terry J. Lodge

Terry J. Lodge, Esq.

Counsel for Joint Petitioners

ROBERT ALVAREZ

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CURRENT POSITIONS

ASSOCIATE FELLOW, INSTITUTE FOR POLICY STUDIES, WASHINGTON, D.C. 2001- to the present

ADJUNCT PROFESSOR, JOHNS HOPKINS SCHOOL OF ADVANCED STRATEGIC INTERNATIONAL STUDIES, 2013 to the present.

PREVIOUS EMPLOYMENT

**SENIOR POLICY ADVISOR TO THE SECRETARY
U.S. DEPARTMENT OF ENERGY
WASHINGTON, D.C.**

Years Employed: 1993 – 1999

Responsibilities:

- ❑ Led and coordinated initiatives and developed policies on behalf of the Secretary relative to nuclear weapons, worker illness compensation, nuclear non-proliferation, nuclear material controls, environmental cleanup, nuclear safety, and asset management.
- ❑ Performed technical and policy analyses for the Secretary regarding the U.S . nuclear weapons production complex, commercial nuclear energy, nuclear material management and disposition, nuclear arms reductions with Russia, environmental, safety and health and DOE management issues.
- ❑ Oversight of Department-wide labor policies for some 100,000 contract employees.

Accomplishments:

- ❑ Led DOE expert teams in a sensitive U.S. Nuclear nonproliferation project to safely secure plutonium-bearing spent fuel at the Yongbyon, nuclear weapons site in North Korea - as part of Agreed Framework between the United States and the Democratic Peoples Republic of Korea.
- ❑ Led and developed a successful legislative effort to establish a federal compensation program for Department of Energy nuclear weapons workers with occupational diseases.
- ❑ Participated in vulnerability assessments regarding spent nuclear fuel, plutonium and highly-enriched uranium at DOE sites.
- ❑ Developed first DOE-wide strategic “Roadmap” for strategic management of the DOE’s nuclear material inventory.
- ❑ Established the first Department-wide Asset Inventory and Management program that

generated some \$60 million in revenues.

- ❑ Developed successful procurement plan to stabilize some 700,000 metric tons of depleted uranium hexafluoride - roughly half of the uranium ever mined in the world.
- ❑ Established a medical monitoring program for former DOE nuclear weapons workers.

**CHIEF INVESTIGATOR
COMMITTEE ON GOVERNMENTAL AFFAIRS
U.S. SENATE, WASHINGTON, D.C.**

Years Employed: 1988-93

Responsibilities:

- ❑ Prepared and reviewed legislation for the Chairman relative to energy, labor, environment, safety, health, and nuclear weapons issues.
- ❑ Oversight, investigations, studies and audits of the U.S. Department's of Energy, Defense, and Interior, Food and Drug Administration, Nuclear Regulatory Commission, National Aeronautic and Space Administration, and Environmental Protection Agency.
- ❑ Produced reports, prepared Committee hearings and speech writing for the Chairman.

Accomplishments:

- ❑ Drafted and helped enacted several pieces of legislation including: the creation of the Defense Nuclear Facility Safety Board (1988); control of radioactive emissions under the Clean Air Act (1990); establishment of a hazards material worker training program for the Department of Energy (1991); a workforce restructuring and community transition program for shutdown nuclear weapons facilities. (1992); and the termination of the U.S. atmospheric nuclear weapons test readiness program (1993).
- ❑ Helped create and foster the Department of Energy's Office of Environmental Restoration and Waste Management Program. (1988-89)
- ❑ Organized over 25 Committee hearings on a wide array of subjects.

**FOUNDER, AND MEMBER OF THE BOARD OF DIRECTORS
ENVIRONMENTAL POLICY INSTITUTE
WASHINGTON, D.C.**

Years Employed: 1975-88

Responsibilities:

- ❑ Managed the Institute's research, Congressional communications, and citizen involvement relative to energy, environmental, health and military nuclear issues.
- ❑ Public speaking, political organizing and lobbying.
- ❑ Fund-raising for a \$1.5 million annual budget.

Accomplishments:

- ❑ Provided the first credible independent technical research on the environmental, safety and health risks and legacies associated with the U.S. nuclear weapons program.
- ❑ Helped enact environmental legislation including the 1977 Clean Air Act, The Resource Conservation and Recovery Act amendments of 1986-92, The 1986 Superfund Act; as well as legislation to dispose of nuclear wastes (The Uranium Mill Tailings Radiation Control Act, 1978, The Nuclear Waste Policy Act, 1982, the Low-Level Waste Policy Act, 1987); and

legislation to prevent the spread of nuclear weapons.

- ❑ Led the national environmental effort to strengthen radiation protection standards and provide compensation for radiation victims.
- ❑ Helped organize a Congressional investigation and successful lawsuit on behalf of the parents and children of Karen Silkwood, a deceased nuclear "whistle blower." In 1984 the Supreme Court upheld the jury verdict against the company that employed Ms. Silkwood.
- ❑ Helped organize diverse political coalitions around the country.
- ❑ Organized several scientific conferences and sponsored scientific and medical research published in peer-reviewed journals.

LEGISLATIVE AIDE

U.S. SENATOR JAMES ABOUREZK (D-SD), Washington D.C.

Years Employed: 1973-75

Responsibilities:

- ❑ Indian affairs, environment, and energy issues.

Accomplishments:

- ❑ Helped enact the Indian health care Improvement Act.
- ❑ Defended Indian water rights in the Upper Colorado River Basin against large water diversions for environmentally destructive coal gasification plants.
- ❑ Uncovered a systematic effort by the Bureau of Indian Affairs and the US Public Health Service to have Indian women sterilized and to have Indian children serve as experimental subjects for drugs without proper informed consent.

AWARDS AND SPECIAL RECOGNITION

- ❑ Awarded two Secretarial Gold Medals, the highest honors bestowed by the Department of Energy.
- ❑ The John Barlow Martin Prize for Public Interest Journalism, Medill School of Journalism, Northwestern University, in 1989.
- ❑ Featured in National Public Television's Nova documentary - Hanford: the Nuclear Legacy - broadcast in February and August of 1990.
- ❑ Featured on CBS 60 Minutes story regarding my efforts to uncover military human radiation experiments -- broadcast in March 1994 and August 1995.
- ❑ Featured in an October 16, 1999 New York Times article regarding DOE high-level radioactive wastes.
- ❑ Featured on the History Channel program, "History's Mysteries" regarding the Karen Silkwood case (November 1999)
- ❑ Featured in a January 29, 2000 New York Times article regarding radiation risks to U.S. nuclear weapons workers.
- ❑ Featured in a January 30, 2000 Washington Post Article regarding health risks of nuclear weapons workers.
- ❑ Featured in the New York Times on April 30, 2000 and on National Public Radio's All Things Considered on May 8, 2000 regarding my experiences in the U.S. Department of Energy.
- ❑ Featured on CBS 60 Minutes on March 17, 2002 regarding Defense High-Level Radioactive Wastes.
- ❑ Featured on National Public Radio's All Things Considered in May 2003, and May 2010 regarding my experiences at North Korea's nuclear site and a primer on controlling nuclear materials.

EDUCATION

Attended the Dana School of Music in Youngstown, Ohio 1964-68, Majored in music theory and composition.

REFERENCES UPON REQUEST

PUBLICATIONS

Articles

The Mancuso Affair, (letter) Bulletin of Atomic Scientists, January 1980.
 Radiation Exposure Standards, (letter) Bulletin of Atomic Scientists, November 1980.
The AAAS Symposium on Radiation, (letter) Science, March 1982.
Plowshares into Swords, Journal for German and International Politics, June 1983, Pahl-Rugenstein Verlag, K61.
Radiation Standards and A-Bomb Survivors, Bulletin of Atomic Scientists, October 1984.
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External Gamma Radiation Around the Savannah River Plant, Ambio - Journal of the Swedish Royal Academy of Science, Vol. 14" No. 2, 1985 (co-authored with Bernd Franke)
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Radiation Workers: The Dark Side of romancing the Atom, Science for the People, April/May 1986. *The Bomb at Home*, Nuclear Times, June/July 1986.
Managing Nuclear Wastes at the Savannah River Plant, Atlanta Constitution/Journal August 15, 1986.
A Win at the Nuclear Starting Gate, Science for the People, April/May 1987.
The Dragon's Tail. An Official History of Radiation Protection During the Manhattan Project (Book Review), Bulletin of Atomic Scientists, December 1987.
Radioactive Legacy of the Nuclear Arms Race, Technology Review, August/September 1988 (co-authored with Arjun Makhijani)
Nuclear Waste: The \$ 100 Billion Mess, Washington Post -- Outlook Section, September 6, 1988 (coauthored with Arjun Makhijani).
Reactor Restart at the Savannah River Plant, Atlanta Constitution/Journal, September 14, 1988.
America's Cold War Casualties, Salon. Com Internet Magazine, April 24, 2000
Energy in Decay, Bulletin of Atomic Scientists, May/June 2000.
Nuclear Wildfires, The Nation, September 18, 2000.
Aid for Nuclear Workers, The Nation, October 19, 2000.
The Long Season of Discontent, Bulletin of Atomic Scientists, January/February 2001.
The Legacy of Depleted Uranium, The Nation, November, 2000.
Making it Work, Bulletin of Atomic Scientists, May/June 2001.
What About Spent Fuel, Bulletin of Atomic Scientists, January/February 2002.
Reducing the Hazards from Stored Spent Power-Reactor Fuel, (coauthored with Jan Beyea, Klaus Jansberg, Jungmin Kang, Ed Lyman, Allison MacFarlane, Gordon Thompson and Frank Von Hippel, Science and Global Security (Princeton University), May 2003.
No bygones in Yonbyon, Bulletin of Atomic Scientists, June/July 2003.
The Legacy of Hanford, The Nation, August 18, 2003.
No Bygones at Yongbyong, Bulletin of Atomic Scientists July 2003.,
Reducing the Risks of High-Level Radioactive Waste at Hanford, Science and Global Security, (Princeton University), 2005.

U.S.-Russian nuclear agreement raises serious concerns, *Bulletin of Atomic Scientists*, June 2008.

A new future means a new Energy Department, *Bulletin of Atomic Scientists*, January 2009.

Is the Energy Department Ready to reboot the country, *Bulletin of Atomic Scientists* *Bulletin of Atomic Scientists*, March 2009.

Advice for the Blue Ribbon Commission, March 2010.

Plutonium Wastes from the U.S. Nuclear Weapons Complex, *Science and Global Security*, January 2011

Unsafe at any reactor, *Los Angeles Times*, March 23, 2011.

Who should manage the nuclear weapons complex?, *Bulletin of Atomic Scientists*, December 2012.

Improving Spent Fuel Storage at Nuclear Reactors, *Issues in Science and Technology (January 2012)*.

Management of the Uranium-233 Stockpile of the United States, *Science and Global Security (in press)*

U.S.-Russia Agreement Raises Serious Concerns, *Bulletin of Atomic Scientists*, June 2008.

Plutonium Waste from the U.S. Nuclear Weapons Complex, *Science and Global Security*, January 2011.

Who should manage the U.S. Nuclear Weapons complex? *Bulletin of Atomic Scientists*, December 2012.

Managing the Uranium-233 Stockpile of the United States, *Science and Global Security*, January 2013.

A Primer on Military Nuclear Wastes the United States *Bulletin of Atomic Scientists*, February 2014.

The WIPP problem, and what it means for defense nuclear waste disposal, *Bulletin of Atomic Scientists*, March 2014.

Thorium, the wonder fuel that wasn't, *Bulletin of Atomic Scientists*, May 2014

Y-12: Poster Child for a dysfunctional nuclear weapons complex, *Bulletin of Atomic Scientists*, August 4, 2014.

The nuclear weapons dismantlement problem, *Bulletin of Atomic Scientists*, November 1, 2014.

Rebranding the nuclear weapons complex won't reform it, *Bulletin of Atomic Scientists*, January 18, 2015.

More bucks for the bang, *Bulletin of Atomic Scientists*, February 23, 2015.

The Marshall Islands and the NPT, *Bulletin of Atomic Scientists*, May 27, 2015.

Tracking legacy radionuclides in St. Louis, Missouri, via unsupported ^{210}Pb , *Journal of Environmental Radioactivity*, Vol 53, March 2016.

West Lake Story: An underground fire, radioactive waste, and governmental failure, *Bulletin of Atomic Scientists*, February 11, 2016.

An Energy Department tale: Captain Perry and the great white whale, *Bulletin of Atomic Scientists*, December 14, 2016.

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Native American uranium miners and the Trump budget, *Bulletin of Atomic Scientists*, March 30, 2017.

Pushing the storage horse with a nuclear waste cart: the spent fuel pool problem, *Bulletin of Atomic Scientists*, August 9, 2017.

End the 67-year war, *Bulletin of Atomic Scientists*, September 11, 2017.

Yesterday is tomorrow: estimating the full cost of a nuclear buildup, *Bulletin of Atomic Scientists* November 3, 2017

Forensic microanalysis of Manhattan Project legacy radioactive wastes in St. Louis, MO., *Journal of Applied radiation and Isotopes*, February 2018.

Under siege: Safety in the nuclear weapons complex, *Bulletin of Atomic Scientists*, August 30, 2018.

Reports

Water for Energy Use in the Upper Missouri River Basin, Environmental Policy Institute, February 1976.

All Electric Kitchens and Starvation: An assessment of nuclear energy in Less Developed Countries, Environmental Policy Institute, October 1976.

Radiation Monitoring Around Nuclear Power Plants, Environmental Policy Institute, Washington, D.C., 1979.

Plowshares into Swords: Mining Plutonium from Commercial Nuclear Power Spent Fuel, (Co-authored with David Albright and Elli Walters), Environmental Policy Institute, Washington D.C." April 1981.

An Assessment of health and Mortality Studies of federal Nuclear Workers in the United States, Environmental Policy Institute, Washington, D.C., June 1985

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Evading the Deadly Issues: An Reply to Recent Criticisms by the DuPont Corporation regarding High-level Radioactive Waste Management at the Savannah River Plant, (co-authored with Arjun Makhijani and Brent Blackwelder), Environmental Policy Institute, Washington, D.C. September 1987.

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Rethinking the Challenge of High-Level Nuclear Wastes, May 1997, White Paper, (Official Use Only)

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