Notes on Slides

Protecting our Earth — From Fukushima to Fermi 2

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Presented by Kevin Kamps, Beyond Nuclear & Don't Waste Michigan

Slide #1: Title Page.

Slide #2. 1990 map by Dave Martin and Irene Koch, Nuclear Awareness Project, Oshawa, Ontario.

Slide #3. 2013 map by Anna Tilden of International Institute of Concern for Public Health, Toronto, Ontario. Note "low" and "intermediate" level radioactive waste dump added at the Bruce Nuclear Generating Station, since the 1990 map above, as well as the inset at the top right, showing 20 targeted sites for Canada's national high-level radioactive waste dump (since whittled down to two remaining targeted sites, South Bruce and Ignace, Ontario, both on Ojibwe First Nations territory).

Slide #4. An early planning document — dated Dec. 1, 1953 — for the Fermi Unit 1 atomic reactor, prepared on behalf of the Power Reactor Development Corporation, which included Detroit Edison and Dow Chemical.

Slide #5. From that same document, the proposal was to generate both nuclear weapons material at Fermi 1 (Plutonium-239), but also radiological weapon (dirty bomb) material, to supply the U.S. Atomic Energy Commission. Ghoulishly, this was to be a for-profit enterprise of the companies involved.

Slide #6. But just one week later, on Dec. 8, 1953, President Eisenhower gave his infamous "Atoms for Peace" speech at the UN General Assembly in New York City. This put a block on any such Fermi 1 plans to generate nuclear weapons and dirty bomb materials — from then on, nuclear weapons materials would be produced at exclusive use military production reactors, as at Hanford Nuclear Reservation in Washington State. So Fermi 1 was relegated to "just" electricity generation as its main supposed money making purpose. (Eisenhower's "neutron wand" was used in 1957 to fire up Shippingport, PA — the first "civilian"* reactor in the U.S., northwest of Pittsburgh, very near the Ohio state line, the location today of Beaver Valley nuclear power plant. *Never mind that the U.S. Nuclear Navy not only built the reactor, but even provided its initial operators.)

Slide #7. But Arjun Makhijani and Scott Saleska published this really good book in 1999, revealing how the "Atoms for Peace" scheme was really a PR cover story for the U.S. nuclear weapons arsenal build up. Yes, there was the one reactor at Shippingport, PA. A few other small-size reactors sprang up around the country in the years that followed, including, in 1962, the 67 Megawatt-electric Big Rock Point in Hayes Twp., MI, four miles from Charlevoix, and eight miles from Petoskey. But where was the vast percentage of mined, milled and processed uranium going in the 1953 to 1970 time frame? Nuclear weapons production! But the American public was lulled into complacency, by talk fo "Atoms for Peace."

Slide #8. Fermi 1 during early construction in 1957, first proposed primarily for nuclear weapons and dirty bomb production, but after 1953 to electricity generation, due to Eisenhower's "Atoms for Peace" supposed (but in hindsight and full disclosure, false), separation of the military and civilian applications of nuclear energy.

Slide #9. Fermi nuclear power plant was named after Enrico Fermi, a scientific leader of the Manhattan Project, the U.S. race for atomic weaponry during World War II.

Slide #10. On Dec. 2, 1942, Enrico Fermi fired up the world's first atomic reactor, Chicago Pile-1 (CP-1), in the squash courts beneath the football stadium at the University of Chicago. It generated the first high-level radioactive waste in history, with which we still don't know what to do with the first cupful, all these many decades later. It also demonstrated the way to generate weapons-usable Plutonium-239, an artificial element…*What can you do? Continue to join efforts like CRAFT's today, for future anti-nuke commemorations. On Dec. 2, 2012, for example, Beyond Nuclear joined with Nuclear Energy Info. Service in Chicago, as well as Friends of the Earth, to commemorate Fermi's dirty deed, 70 years to the day, right at the U. of Chicago, with a major summit about Fukushima, as well as radioactive waste. For more info., see: <http://neis.org/mountains-of-waste/>.*

Slide #11. Military production reactors at Hanford, WA would be used to generate the Pu-239 then detonated in the world's first atomic "test" blast, code-named "Trinity," in the Tularosa Basin near Alamogordo, New Mexico, on July 16, 1945. To this day, the Tularosa Basin Downwinders have not been officially acknowledged by the U.S. government as nuclear Downwinders, let alone compensated for their significant health damage, under the Radiation Exposure Compensation Act, as have other Downwinders. This is something the Tularosa Basin Downwinders Consortium has worked hard to rectify. *What can you do? Consider plugging into this group's work, including its annual July 16th commemorations! See: <https://www.trinitydownwinders.com/>.*

Slide #12. "Little Boy," a uranium bomb, was dropped on Hiroshima, Japan, just a few weeks later, on August 6, 1945, by the U.S. military — the first use of nuclear weaponry in warfare.

Slide #13. An image of the aftermath of the needless atomic bombing of Hiroshima (re: the needlessness, see Gar Alperovitz's 1994 book, *The Decision to Use the Atomic Bomb*). *What can you do? Read up on anti-nuclear histories like this one!*

Slide #14. Nagasaki, Japan was atom-bombed just three days later, on August 9, 1945. The Plutonium-239 bomb, was identical to the one used in the "Trinity" test blast in New Mexico. This photo shows the aftermath. Between Hiroshima and Nagasaki, many hundreds of thousands of people — mostly Japanese civilians — were killed, including Korean slave laborers. Also killed were American prisoners of war. Hibakusha, survivors of the atomic bombings, suffer still to this day. *What can you do? Join commemorations of the Hiroshima and Nagasaki atomic bombings each August, held all over the country! If there is not one being held near you, join with friends to organize one!*

Slide #15. But on a more hopeful note, the Hibakusha devoted their lives to abolishing nuclear weapons and nuclear war. Working with the International Campaign for the Abolition of Nuclear Weapons, they were awarded the Nobel Peace Prize in 2017. This photo shows an annual commemoration of the Hiroshima atomic bombing. The Hiroshima dome — left as it was after the bombing — is visible in the background. The floating lanterns commemorate those killed by the atomic bomb. *What can you do? Support any one of ICAN's 500+ coalition member groups! Read Hibakusha testimonials, or look them up on the internet.*

Slide #16. Also on a hopeful note, these three brothers — from left to right, Roy (the oldest), Walter (the middle), and Victor (the youngest) Reuther — and the United Auto Workers union they led, would play a very important early role in opposing Fermi 1.

Slide #17: They were convinced to oppose Fermi 1 by Leo Goodman, a UAW attorney who would blaze a trail of anti-nuclear power activism. From 1956 to 1973, Goodman represented intervenors, UAW, alongside legal counsel Benjamin Sigal, against Detroit Edison's Fermi 1 plutonium fast breeder reactor. UAW did so, to protect 500,000 of its union members within a 50-mile radius of Fermi 1. As documented in Goodman's 1982 Washington Post obituary, Goodman is regarded as a "grandfather of the antinuclear movement," whose first foray into related matters was trying to secure livable housing for workers in the 1940s at the Oak Ridge nuclear weapons complex in Tennessee, which had enriched uranium for the Manhattan Project, and continued to do so for the fledgling nuclear arms race at the time.

Slide #18: Goodman joined the UAW in 1947. Less than a decade later, he'd be resisting Fermi 1 on UAW's behalf. Tony Mazzochi, the "man who hated work but loved Labor," a leader of the Oil, Chemical, and Atomic Workers union (OCAW), himself a mentor to Karen Silkwood, gave Goodman high praise in this obit quote, as a founder of the union. Goodman regarded his work against Fermi 1 as his proudest achievement.

Slide #19: As John G. Fuller's iconic 1975 book about the Fermi 1 partial core meltdown, *We Almost Lost Detroit*, documented, the UAW took the case against the Atomic Energy Commission (AEC) all the way to the U.S. Supreme Court. Although it lost by a 7 to 2 ruling, the dissent was powerful, essentially saying the carte blanche authority over radiological safety given to the U.S. AEC by the Atomic Energy Act of 1954 was a dark day for democracy in this country. We are still haunted by this. Dr. Judith Johnsrud, a founder of NIRS and Beyond Nuclear, called for decades for this anti-democratic law to be changed. She too was an early collaborator and good friend with Leo Goodman. Just a few years after the Supreme Court ruling, on Oct. 5, 1966, the "We Almost Lost Detroit" meltdown took place, showing Goodman and UAW were right about Fermi 1's dangers. *What can you do? Learn more about the UAW's anti-nuke heritage, such as Beyond Nuclear's related website postings!*

Slide #20: As the provocative paperback cover put it, "this is not a novel," but it does read like one! Many an anti-nuclear activist, like progressive radio show host Thom Hartmann, a Michigander, got their start by reading this book. Even Kay Drey in Missouri, Beyond Nuclear's board of directors president, who gave her first public speech against nuclear power on the very day Karen Silkwood died in 1973, by coincidence, was stirred to even deeper commitment by reading Fuller's book. What can you do? *Read Fuller's book! If you've read it, find a copy and give it as a gift to a friend! Make copies available to students!*

Slide #21: A little more than a dozen years later, Three Mile Island Unit 2 near Harrisburg, PA, suffered a 50% core meltdown, the worst atomic reactor disaster in U.S. history (thus far, anyway). This photo was taken by Robert Del Tredichi, and was published in his powerful 1980 book *The People of Three Mile Island,* including a portrait of and section about Judy Johnsrud, who led efforts to block the Three Mile Island nuclear power plant in the first place, years earlier. Again, as at Fermi 1 in 1966, meltdowns tragically proved the anti-nuclear critics were right. *What can you do? Read Del Tredichi's book! Or watch Karl Grossman's Enviro-Video documentary, Return to Three Mile Island.*

Slide #22: In response to the Three Mile Island meltdown, on May 6, 1979, a hundred thousand anti-nuclear activists gathered in Washington, D.C., at the foot of Capitol Hill on its west side facing the National Mall, to listen to speakers such as Ralph Nader, and Jane Fonda (star of the contemporaneous blockbuster *China Syndrome*), as well as musicians — the beginnings of Musicians United for Safe Energy (MUSE). *What can you do? Support anti-nuke concerts! Support anti-nuke teach-ins! Help make them happen! Spread the word!*

Slide #23: Just a couple months later, on July 16, 1979 (the same date as the “Trinity” atomic blast, 24 years earlier), the largest (by volume) radiological disaster in U.S. history took place at Church Rock in northwest New Mexico, near Gallup, as well as the Navajo/Diné Reservation. An earthen dam at the United Nuclear Corporation (UNC) uranium tailings pond burst, releasing radioactive and toxic chemical wastewater into the Puerco River, the sole source of drinking and irrigation water for Navajo/Diné shepherds downstream. Little to no cleanup was performed, nor compensation provided, for many decades thereafter. Annual commemorations have been held for the past several years by the Navajo/Diné Red Water Pond Road Community Association <https://swuraniumimpacts.org/red-water-pond-road-community-association/>. *What can you do? Consider attending such a commemoration, post-pandemic, or organize a related even in your community. Invite a speaker from this group.*

Slide #24: A couple months after Church Rock, Musicians United for Safe Energy (MUSE) played a week of sold out shows at Madison Square Garden in New York City. It even played a free concert in Battery Park, attended by a huge throng. MUSE’s “No Nukes” album is still a classic. *What can you do? Support anti-nuke concerts! Attend one! After all, as my colleague Molly Johnson at San Luis Obispo Mothers for Peace in CA says, what’s a music performance without an audience to support it? Spread the word! Set up an info. table there.*

Slide #25: Gil Scott-Heron (born April 1, 1949; passed on to Power, May 27, 2011) was an early Musician United for Safe Energy. A spoken word artist, soul and jazz poet, he is considered by many as the first rapper ever. His own term for himself was “bluesologist,” which he defined as "a scientist who is concerned with the origin of the blues."

Slide #26: The title of Gil Scott-Heron’s anti-nuke ballad “Shut ‘em Down” says it all — shut them down, before they melt down! See the prescient, powerful lyrics, that speak truth to power still, decades later.

Slide #27: Gil Scott-Heron’s “We Almost Lost Detroit” is named after Fuller’s 1975 book. The lyrics are quite haunting. Be sure to check out Gil Scott-Heron performances of both of these songs, such as on YouTube! *What can you do? Spread the word about these great songs to your networks!*

Slide #28: Just seven years and one month after the Three Mile Island Unit 2 meltdown, Chernobyl exploded, and burned for ten days. The 35th annual commemoration of the Chernobyl nuclear catastrophe will be observed next month, on April 26, 2021. Ironically, one month shy of Chernobyl’s 25th annual commemoration, Fukushima would suffer its triple-meltdown.

Slide #29: My ex-wife, Gabriela Bulišová, took this photo of a Chernobyl displaced person in the early 2000s, during an Irish Chernobyl Children’s Project aid delivery to Belarus. She won a local photo contest award for this image in Kalamazoo, where we had been living before moving to Washington, D.C. It may have been her first award, but would not be her last. She won the Sondheim Prize in 2013, for best photographer in the Washington, D.C./Baltimore region. And in more recent years, she won a Fulbright. Her Chernobyl photos were exhibited at Swords Into Plowshares Gallery in Detroit, several years ago. *What you can do? Anti-nuke art! Photography, music, theater, etc. Help organize an exhibition or performance. Support one when they happen, as by attending and spreading the word. Support Chernobyl commemorations each April 26th. Consider donating to the Chernobyl Children International, based in Ireland.*

Slide #30: Fermi Unit 2 had been under construction since the early to mid-1970s! It was supposed to fire up by the mid-1980s, but had an inadvertent nuclear criticality that it had tried to coverup. Michael Keegan busted them for it, which led to another three years of getting their ducks in a row, which cost them billions of dollars in replacement power alone. But in 1988, Fermi 2 did fire up. It's been operating ever since, with countless problems, and high risks. It is, after all, the largest Fukushima Daiichi atomic reactor design on Earth, a General Electric Mark I Boiling Water Reactor, only super-sized. At 1,223 Megawatts-electric, it is nearly as big as Fukushima Daiichi Units 1 and 2 put together. *What can you do? Join CRAFT and/or another anti-nuke group! Get active! Better active today, than radioactive tomorrow!*

Slide #31: In June 1994, I met Jessie Pauline Collins when we both staffed a Leonard Peltier Support Group info. table in southeast Michigan. She told me about an upcoming anti-nuke road trip, and invited me along. So Keegan's "cool bus" pulled over in Kalamazoo and picked me up. It was the first time I met Mark Farris, Corey Conn, and a number of other Michigan anti-nuke activists. We headed to the Prairie Island Indian Community in Minnesota, unwilling host to two Northern States Power (NSP) atomic reactors, which — like Palisades in Michigan — were just beginning to install outdoor dry casks for high-level radioactive waste storage. In Prairie Island's case, this was happening just several hundred yards from the Indian Community. NSP was also leading nuclear industry efforts to open a so-called away-from-reactor Monitored Retrievable Storage (MRS) facility — nowadays called a Consolidated Interim Storage Facility (CISF) — for highly radioactive irradiated nuclear fuel, at the Mescalero Apache Indian Reservation in southern New Mexico. Traditional Mescalero Apache environmentalist Rufina Marie Laws, along with fellow tribal members like Joe Geronimo, led the fight against the dump targeting their community. Despite death threats against her that forced her to go into hiding, that dump was stopped. Hearing her speak —both at Prairie Island, and not long thereafter in Monroe, MI — made a deep impression on me. At both locations, rainbow colored "Webs of Life" were woven — at the Prairie Island nuclear plant front entrance, and in Monroe, at the Custer monument, just off of downtown in the riverside park. *What can you do? Help organize such anti-nuke demonstrations. Take part in them when they do happen. Promote them far and wide, to boost turn out! Practice intersectionality between allied movements! Help fight environmentally unjust CISFs today, like Holtec's targeting majority minority (Hispanic, Indigenous) New Mexico, and Interim Storage Partners' targeting West Texas, immediately upon the New Mexico State line, and upstream!*

Slide #32: Winona "No Nukes" LaDuke (White Earth Ojibwe, MN), a founder of Honor the Earth, was a national leader in the fight to stop the MRS targeted at Mescalero Apache, as well as the national high-level radioactive waste dump targeted at Yucca Mountain, Nevada. Honor the Earth's concert tours in the late 1990s and early 2000s were essential parts of the campaign, in terms of public awareness and popular activation. Winona opened one of her anti-nuke talks during the intermission of one of the concerts by saying "The best minds in the nuclear industry have been hard at work for more than 50 years to solve the radioactive waste problem, and they've finally found a solution: haul it down a dirt road and dump it on an Indian reservation…". *What can you do? Support anti-nuke concerts! Prepare an anti-nuke literature table, decorated with banners and activated with petitions. Set up shop at each concert venue along the way, with the bands', organizers', and venues' ok ahead of time, of course! Support Honor the Earth's current campaigns, like opposition to Enbridge Line 3 tar sands oil pipeline in MN and WI. Help the resistance to Enbridge Line 5 at the Straits of Mackinac! Order wild rice and other foods and crafts from the White Earth Ojibwe Land Recovery Project!*

Slide #33: Indigenous (Santee Dakota) poet and musician John Trudell was a frequent and beloved performer on the Honor the Earth anti-nuke concert tours. *What can you do? Support*

Indigenous poets and musicians! Search out Trudell's amazing music and poetry! Share it with friends!

Slide #34: The Fukushima Daiichi (Daiichi means Number One in Japanese language) nuclear power plant was comprised of six reactors Units 1 to 5 were General Electric Mark I Boiling Water Reactors, while Unit 6 was a closely related GE Mark II BWR design.

Slide #35: The 9.0 earthquake that hit the Fukushima Daiichi nuclear power plant on 3/11/11 in northeastern Japan, first destroyed the electric grid, the primary source of electricity to run safety and cooling systems. Then the 45-foot tall tsunami it generated slammed into the site less than an hour later, destroying the emergency backup diesel generators, as well as oceanside cooling water pumps. The three reactors that had been operating that day did SCRAM immediately upon detecting the quake. But even shut down, hot reactors must be cooled for days. The race was on to try to cool them, but the race was lost. The three reactors would melt down over the course of the next few days. The melt downs generated large amounts of flammable and explosive hydrogen gas, which ultimately exploded, first at Unit 1, as shown here. (Fortunately, Units 4, 5, and 6 were not operating that day — their cores were de-fueled — or else likely would have melted down too, doubling the severity of the catastrophe.)

Slide #36: The hydrogen gas explosion was even larger and more powerful at Unit 3. Large black chunks of the reactor building can be seen raining down from the top of the mushroom-shaped cloud. The explosion essentially rubberized the Unit 3 reactor building. As they were joined by a common smoke stack off-gas system, the hydrogen gas explosion even severely damaged the adjacent Unit 4 reactor building.

Slide #37: An aerial image of the smoke laden with hazardous ionizing radioactivity escaping on the winds, in the first days after the meltdowns and explosions. Radioactivity was also being directly released into the Pacific Ocean, in addition to falling out from the atmospheric releases from the smoldering wreckage. Just visible in the upper right hand corner of the photo is a forested park overlooking Fukushima Daiichi. I had stood there myself on Hiroshima Day (August 6), 2010, seven months before the catastrophe began. Japanese colleagues took me up there to get a look at the six-reactor complex. Also visible to my right, just down the coast to the south, was the Fukushima Daini four-reactor complex.* I was there on a national speaking tour of Japan. My first stop after events in Tokyo was Fukushima Daiichi. I met with the mayor of one host town, and the vice mayor of the other. The host towns have been ghost towns since 3/11/11. About 75 people came to my talk that evening. Everyone I met there has been a nuclear evacuee for ten years, with little prospect of ever returning to their former, now severely radioactively contaminated, homes. (*Fukushima Daini's four reactors were all operating on 3/11/11. The earthquake took out all but one of the power lines from the grid. The tsunami — taller at Daini than at Daiichi — took out the emergency back up diesel generators. But for that single surviving power line, Daini's four reactors likely also would have melted down in March 2011. Again, the catastrophe easily could have been more than twice as bad as it has been. In fact, Japan national government Chief Cabinet Secretary Yukio Edano, who had falsely assured the people of Japan and of the world in the first days and weeks of the Fukushima catastrophe that there was no immediate danger, admitted a year later that he and other national leaders actually feared a "demonic chain reaction" of atomic reactor meltdowns (and, even worse, the then inevitable fires at on-site high-level radioactive waste storage pool, it must be added), not only at Fukushima Daiichi — as did happen — but also at Fukushima Daini — which nearly happened — and even at the Tokai nuclear complex, much nearer Tokyo. After having initially lied to his nation and the whole world, chief national government spokesman Edano admitted a year later to the *New York Times*, "If that happened, it was only

logical to conclude that we would also lose Tokyo itself.") *What can you do? Join CRAFT and/ or other anti-nuke organizations! Help shut down Fermi 2, before it melts down!*

Slide #38: Even though Unit 4 was very luckily not operating on March 11, 2011, it soon came to be regarded as the next big shoe to drop after the meltdowns at Units 1, 2, and 3. It was unclear if it's wet indoor pool still contained enough cooling water to cover the irradiated nuclear fuel stored there. And because the cooling water pumps in the pool were dysfunctional, even if there was enough water to cover the fuel, it would eventually boil away due to the uncooled decay heat of the irradiated nuclear fuel itself. If uncovered, the tops of the irradiated nuclear fuel would catch fire, once the zirconium cladding on the fuel rods reached its ignition temperature. Then the zirconium fire would spread to all the cladding in the pool. The resulting release of hazardous ionizing radioactivity, including Cesium-134 and Cesium-137, would dwarf the catastrophe of the reactor releases through damaged or destroyed, too small and too weak Mark I containments. Wet storage pools don't have containments to begin with. Even the industrial reactor building itself, which is not radiological containment, had been severely damaged by a hydrogen gas explosion which emanated from the adjacent Unit 3 reactor through a shared off-gas "smoke stack."

Slide #39: On St. Patrick's Day, March 17, 2011, television news broadcasts in the U.S. included such images of Japan Self Defense Forces helicopters, scooping up water from the Pacific Ocean, and attempting to dump it into the Unit 4 pool, in a desperate attempt to ensure enough water remained in the indoor wet storage pool to cover the potentially overheating irradiated nuclear fuel. As the image shows, wind conditions made the attempted water drops unsuccessful, despite the skill and heroism of the pilots and crews. The images were eerily reminiscent of helicopter drops at Chernobyl, 24 years and one month earlier.

Slide #40: The documentary film "Battle for Chernobyl" includes the little known story of the 600 Soviet pilots who died early deaths, due to the radiation exposure they suffered, flying missions over the gaping maw of the exploded and burning Chernobyl reactor unit #4 in April and May, 1986. They desperately, and often unsuccessfully, attempted to drop materials into the gaping maw, to block runaway nuclear chain reactions, as well as to put out fires. They weren't the only ones to courageously risk, and lose, their lives, in an effort to try to mitigate what became a global nuclear catastrophe, as is Fukushima as well. The 35th annual commemoration of the beginning of the Chernobyl nuclear catastrophe will be April 26, 2021.

Slide #41: An indoor wet pool zirconium fire at a Mark I would be a mega-catastrophe. Dr. Frank von Hippel and another Princeton researcher published this map as part of a study published in 2016. It shows the radioactive contamination over a broad region of the Mid-Atlantic and New England, should a zirconium fire occur at the Peach Bottom Mark Is in PA, right on the border with MD, about a hundred miles from Washington DC. The map shows worst case weather conditions, as could likely occur on July 1st of each year. One factoid from the study was that $2 trillion in property damage could occur. Another was 8 million Americans forced to flee as nuclear evacuees. Von Hippel has also served on National Academy of Science panels analyzing the Fukushima nuclear catastrophe. One of them, which examined the near-miss pool fire at Fukushima Unit 4, concluded that sheer luck was the reason the pool had not caught fire. A gate separating the reactor cavity from the pool was damaged on its edges, by either the natural disasters, or more likely the explosion, in mid-March 2011. This damage allowed water — luckily present in the reactor cavity — to flow over into the pool. If this had not occurred, again by sheer luck, the NAS panel concluded the zirconium fire would have begun by mid-April 2011. Prime Minister Naoto Kan, who served for the first several months of the Fukushima catastrophe, admitted in February 2012 that he had had a secret contingency plan in the works, in case of a pool fire. It was to evacuate 35 to 50 million people from northeast Japan and metro Tokyo, as compared to the 160,000 nuclear evacuees who

fled their home due to reactor releases through damaged or destroyed Mark I containments. Kan said it would have marked “the end of the Japanese state.” Imagine what a pool fire at Fermi 2 could do, in terms of acute radiation poisoning deaths, radiation injuries, property damage, etc. U.S. GE BWR Mark Is, like at Peace Bottom and Fermi, contain significantly more high-level radioactive waste in their pools than Fukushima Daiichi Unit 4 and other Japanese reactors, so the consequences would be much worse here.

Slide #42: U.S. nuclear utilities like DTE keep their indoor wet storage pools packed as full to the gills as possible, for as long as possible, simply in order to defer the cost of transfer to dry cask storage. This means the risks in the pool are maximized, for years or even decades on end, for no good reason whatsoever. While transfer to dry cask storage is a safety upgrade over pool storage (a simple truth industry and NRC refuse to acknowledge), NRC has also allowed dry cask storage vendors like Holtec International to cut countless corners on container system design and fabrication. For example, industry whistleblower Oscar Shirani and NRC whistleblower Dr. Ross Landsman revealed major quality assurance violations associated with Holtec containers in the year 2000. These QA violations have never been addressed — NRC has not required Holtec to do so. Shirani thus questioned the structural integrity of Holtec containers sitting still, in on-site storage, going zero miles per hour, let alone traveling at high speeds down the rails. Dr. Landsman compared NRC’s thinking to that of NASA’s that led to Space Shuttles crashing into the ground. Holtecs are used at Fermi 2, for the overflowing high-level radioactive waste that no longer fits in its packed to the gills pool. This image is an artist’s rendition, showing a cross section. Note that the thick concrete is the radiation shielding. Approaching such irradiated nuclear fuel without radiation shielding between you and it, at a close distance, would result in a fatal exposure to gamma and neutron radiation emissions in just a few minutes’ time, even for fuel that had been discharged from the operating reactor core decades ago. *What can you do? Help support Hardened On-Site Storage — the first step is to empty pools!*

Slide #43: The Donald C. Cook nuclear power plant on the Lake Michigan shore in Bridgman, MI, 15 miles south of St. Joe/Benton Harbor, has two large reactors — more than 1,000 Megawatts-electric each — yet no cooling towers. Thus, it is dumping two-thirds of the heat it generates splitting atoms, a massive amount, directly into the Lake, causing significant ecological harm. Its intake of cooling water on such a massive scale also kills countless numbers of aquatic organisms.

Slide #44: Cook also uses Holtecs. These workers at Cook at hamming it up for the camera in front of Holtec on-site storage containers, to give you a sense of how big they are. Holtec containers, two decades ago, were only big enough to hold up to 24 Pressurized Water Reactor (PWR) irradiated nuclear fuel assemblies. Nowadays, Holtec uses containers that hold up to 37, meaning that much more radioactivity content, thermal heat, as well as physical weight.

Slide #45: “Halt Holtec!” Is the coalition rallying cry in New Mexico and beyond, in resistance to Holtec’s consolidated interim storage facility for high-level radioactive waste targeting that majority minority state. Holtec is also trying to take over Palisades (30 miles north of Cook, in Covert Township near South Haven, on the Lake Michigan shore) as well as Big Rock Point (in Hayes Two., near Charlevoix, on the Lake Michigan shore), for decommissioning and high-level radioactive waste management. Thus Holtec containers would be used in the future at Palisades as well. In fact Holtec containers are used at dozens of U.S. atomic reactors. They are even used at Chernobyl — and it has not gone well in Ukraine, either! *What can you do? Join the resistance to the Holtec takeover of nuclear power plant sites in Michigan! As well as to Holtec’s proposed CISF in NM!*

Slide #46: The irony of this image is that it was originally an artist's rendition, just to show the cross sectional "anatomy" of GE BWR Mark Is and closely related Mark IIs. But ironically, after the meltdowns and explosions of March 2011, the Fukushima Daiichi Units 1 to 4 reactors actually somewhat resembled this image in real life, due to the damage, or outright destruction, chronicled in the text on this slide.

Slide #47: Beyond Nuclear launched our "Freeze Our Fukushimas" campaign a year after the Fukushima nuclear catastrophe began. This shows the cover of our pamphlet (which is viewable online in its entirety here: <http://www.beyondnuclear.org/pamphlets/> — just scroll down to it). The pamphlet chronicles the well documented history of problems with Mark Is and IIs in the U.S. It also lists the dozens of Mark Is and IIs still operating in this country, including the Fermi 2 Mark I, the largest on Earth. What lessons have NRC and the U.S. nuclear power industry learned from the Fukushima catastrophe? Few to none, incredibly enough! The Japanese Parliament undertook a year-long root cause investigation of the nuclear catastrophe. Its final report concluded that the root cause of the catastrophe was not the earthquake and tsunami themselves, but rather the collusion between safety regulators, industry, and government officials, that left Fukushima Daiichi so very vulnerable to natural disaster risks that were readily apparent. Frighteningly, such collusion is at least as bad here and now in the U.S., as it was in Japan on 3/11/11. Thus we are living on borrowed time, till a Fukushima-scale nuclear catastrophe happens here. If it does not, it will likely be due to sheer luck, as has been the case with many a near-miss to reactor meltdowns in this country over past decades (Three Mile Island Unit 2 had a 50% meltdown in 1979; Fermi 1 experienced a partial core melt in 1966, and "we almost lost Detroit," Toledo, Windsor, Lake Erie, etc.; Santa Susana in CA experienced a core melt in 1959; the list goes on.) *What can you do? Help shut down Mark Is like Fermi 2!*

Slide #48: On the eve of Chernobyl's 26th annual commemoration, we confronted General Electric about Fukushima and Fermi 2, at the company's annual shareholder meeting, held that year at the Renaissance Center in downtown Detroit. Pat Birnie of the GE Stockholders Alliance asked Michael Keegan of Coalition for a Nuclear-Free Great Lakes and myself to speak as proxies on behalf of her alliance. We did, with gusto. As did Vick Macks of the Michigan Stop the Bombs Campaign, during the Q&A session at the end. (By the way, this image of the boat passing the Renaissance Center was used to educate folks about the risks of proposed Bruce Nuclear Generating Station radioactive steam generator shipments, down the Great Lakes, out the St. Lawrence, and across the Atlantic, to Sweden, for "recycling" into consumer products. A coalition from the Great Lakes to Europe said no way. The Mohawks of Quebec nailed the final nail of resistance into the scheme's coffin, by saying the shipments would not be allowed to pass through its St. Lawrence River territory. Bruce Nuclear backed down, and the 64 radioactive steam generator shipments bound south past the Renaissance Center on the Detroit River were never carried out.)

Slide #49: GE CEO Jeff Immelt's bad behavior justifies the ridicule of his last name, in this context. Immelt was a top economic advisor to President Obama. After the beginning of the Fukushima catastrophe, Obama sent Immelt to Japan, apparently to consult Japanese leaders. After all, Fukushima Daiichi were GE BWRs! But Japanese press reported Immelt mostly hid out in his hotel room, apparently fearful he would be served legal papers, holding him and his company liable for the catastrophe. As Michael Keegan warned Immelt and GE shareholders that day, their atomic reactors, like at Fukushima and Fermi 2, had created a "cauldron of culpability" for the company. I asked Immelt during the meet and greet before the meeting began if he would deploy the vast resources of GE to help address the then still urgent emergency of the Unit 4 pool at Fukushima. He just shrugged his shoulders uncomfortably and refused to answer my question, which I took as a "no"! See more info. re: our confrontation with Immelt and GE that day, here: <http://www.beyondnuclear.org/nuclear-reactors-

whatsnew/2012/8/2/general-electrics-immelt-down-on-nukes.html>. *What can you do? Work with others, including friends who own stocks in the companies, to help organize anti-nuclear shareholder resolutions at future DTE, GE, etc. annual shareholder meetings near you!*

Slide #50: Some good news — four GE BWR Mark Is have closed in the past several years, part of a very hard won, record-breaking number of atomic reactor shutdowns since 2012 across North America. Beyond Nuclear has chronicled this at our REACTORS ARE CLOSING website section: <http://www.beyondnuclear.org/reactors-are-closing/>. But there are still 19 GE BWR Mark Is operating in the U.S., and 8 Mark IIs. In addition there are GE BWR Mark IIIs, as well as PWRs — a total of 94 atomic reactors still operating in the U.S. Shut 'em down before they melt down, as Gil Scott-Heron sang! *What can you do? Help shut down an atomic reactor near you!*

Slide #51: The sweetest of these GE BWR Mark I shutdowns, for me, was at Vermont Yankee — perhaps because it was the first, and also the hardest won. (And also because Entergy owned Vermont Yankee, and we'd been fighting them at Palisades since they took over there in 2007.) By the way, this great documentary film by Robbie Leppzer provides an inspiring look behind the scenes of that tremendous grassroots victory. And the $12 ticket price per viewing helps support Beyond Nuclear during March 2021. See here for more info.: <http://www.beyondnuclear.org/home/2021/3/9/screen-power-struggle-and-support-beyond-nuclear.html>. *What can you do? Watch the film, and spread the word! Organize an anti-nuke film fest, featuring other films as well! Support the filmmakers, inspire and educate your community!*

Slide #52: It takes a national — even international — movement to achieve such a hard won victory as the Vermont Yankee shutdown. When Chris Williams of the grassroots Vermont Yankee Decommissioning Alliance asked me for ideas of Native American contacts to speak in Vermont re: impact of the uranium fuel chain on Indigenous communities, I didn't hesitate one nano-second before recommending Ian Zabarte (pictured here, with Vermont Yankee in the background), and Lorraine Rekmans from Canada. Ian is Principal Man of the Western Bands of the Shoshone Nation of Indians, and a leading defender of the "peace and friendship" Treaty of Ruby Valley (Consolidated Treaty Series, Vol. 127, 1863), such as against the Yucca Mountain dump that would violate it. Lorraine is an Indigenous leader of the Canadian Green Party. She is from Serpent River First Nation, just east of MI's UP; she has watchdogged the uranium mining and milling there for decades, which has devastated her community, and others downstream in Georgian Bay and Lake Huron. *What can you do? Help support survivors of atomic industry abuses at every stage of the uranium fuel chain. This includes in Indigenous Nations around the Great Lakes, on both sides of the imaginary dotted line between the U.S. and Canada! Help Indigenous Nations fend off current threats, like Canadian DGRs, and U.S. reactors that operate amidst their traditional territory.*

Slide #53: Germany is another inspiring anti-nuclear success story. The German Green Party has been anti-nuclear power since its founding by Petra Kelly in the 1970s (she learned how it's done from "Saint" Bob Brown, decades-long leader of the Australian Green Party — and long-serving Australian federal senator — the first Green Party in the world, which began as a river protection group in Tasmania). The Social Democrats became anti-nuclear after Germany lived under the terror of the Chernobyl clouds in 1986, and resultant contamination across Germany. But even the Conservative Party quickly became anti-nuclear in a great big hurry, when they lost regional elections in long-time strongholds like Bremen and Stuttgart, just weeks after Fukushima had begun. The Green Party beat them in those races, in a direct voter response to Fukushima. Germany nuclear phase out political consensus will be completed next year, when the very last reactors close for good. Germany also has very ambitious greenhouse gas

reduction goals. Its electricity supply is growing in renewables (wind, solar), combined with maximized energy efficiency. Pretty good for a relatively small country in northern Europe with limited access to the seacoasts! If Germany, the fourth largest national economy in the world, can accomplish this, so can other countries, particularly the U.S., which has so much more in the way of renewable resources than Germany, and also has so much potential energy efficiency upgrading to do (in other words, we are still wasting a lot of energy here!). The German anti-nuclear power movement, which is closely connected to its renewable energy advocacy movement, has played a large role in this victory, over decades. Shown here is a blockage of high-level radioactive waste shipments into Gorleben, for consolidated interim storage. And the CIS facility is located right next to a formerly proposed deep geologic repository, which the Conservative Party had helped — for decades — to conceal was actually scientifically unsuitable. The annual road and rail blockades against inbound shipments was the heartbeat of the German anti-nuclear movement, beginning in 1978. By 2011, it made the difference in achieving the national nuclear power phase out. *What can you do? Help build international solidarity throughout the anti-nuclear movement!*

Slide #54: Beware Detroit! Mobile Chernobyls heading your way, if you don't stop them! This State of Nevada Agency for Nuclear Project's route map shows the Dirty Bombs on Wheels/ Mobile X-ray Machine That Can't Be Turned Off train shipments of high-level radioactive waste that would travel through the heart of metro Detroit, from Fermi 2, if any one of three dumps opens in the Southwest: Holtec's CISF in NM; Interim Storage Partners' CISF in TX, very near the NM state line; and/or Yucca Mountain, NV. The Alliance to Halt Fermi 3 invited me to speak about the EJ impacts of such Mobile Chernobyl shipments, and of those proposed dumps themselves, last October. I can provide my power point from that presentation, on request. *What can you do? Help build an anti-Mobile Chernobyl EJ educational campaign in metro Detroit, and beyond in MI!*

Slide #55: More good news — our environmental coalition has fought the proposed new Fermi 3 reactor to a standstill! Against daunting David v. Goliath odds, and despite the NRC rubber-stamping its construction and operating license after many years of battle, DTE has never broken ground!

Slide #56: Fermi 3's effective cancellation (indefinite postponement) is a wonderful thing, in terms of the $20 billion that won't be wasted on it (imagine how much renewable energy and energy efficiency that could pay for, for starters!), but also in terms of the reactor meltdown risks that have been averted (Fermi 3 would be a "new and improved" BWR, absurdly named the Economic Simplified BWR!), as well as in terms of the high-level radioactive waste (and "low" level, for that matter!) that won't be generated, the "routine" radiation at every stage of the associated uranium fuel chains that won't be released, etc. But we must remain vigilant against Fermi 3, in case that zombie is ever woken up again, as by DTE or the U.S. federal government (such as via taxpayer-backed nuclear loan guarantees, $12 billion — with a B — of which is being used, and put at high risk of never being paid back, in order to prop up the environmentally unjust Vogtle Units 3 and 4 new reactor construction projects in Georgia as we speak!). *What can you do? Help us remain vigilant against any attempt to revive the Fermi 3 new reactor scheme! Help redirect those tens of billions of dollars to renewable energy and energy efficiency instead!*

Slide #57: This slide sums up the bad economics of nuclear power. It was designed by Gene Case and Avenging Angels PR firm. The image graced the cover of the Nation magazine in 2003, accompanying an article about the nuclear power relapse proposed by Bush/Cheney. DTE would ride that wave, proposing Fermi 3 in 2007. We have resisted it since day one!

Slide #58: Another victory for now, that we have to be vigilant remains that way — our blocking the Yucca Mountain dump targeted at Western Shoshone land in Nevada. This Las Vegas Review Journal political cartoon appeared in 2010, when President Obama's U.S. Department of Energy moved to withdraw the license application to NRC to construct and operate the Yucca dump, as "unworkable." They should have added it was: a violation of the treaty with the Western Shoshone; scientifically unsuitable; an EJ violation; a violation of consent-based siting; etc. More than a thousand environmental and EJ groups have worked with the Western Shoshone and the State of NV since the "Screw Nevada" bill of 1987 first singled out Yucca as the national dump-site. For now we are winning. But we must watch the 12 toes of this radioactive mutant zombie, for twitching, as U.S. House Republicans in particular— like Fred Upton of s.w. MI — continue to try to resurrect this monster! But even Democratic U.S. Rep. Debbie Dingell of s.e. MI, a member of the Congressional Progressive Caucus, voted to restart the Yucca dump scheme on May 10, 2018! You can't be "progressive" and vote in favor of environmental injustice, for starters! And if storing high-level radioactive waste on the Great Lakes shorelines is not okay (which is true, it is not okay!), then how can it be okay to generate there in the first place, as Upton and Dingell support, as at Fermi 2, Palisades, and Cook?! For more info., see <http://www.beyondnuclear.org/yucca-mountain/2018/5/10/us-house-votes-340-to-72-to-screw-nevada-again-and-perhaps-n.html> and <http://www.beyondnuclear.org/radioactive-waste-whatsnew/2019/11/21/us-house-energy-commerce-committee-passes-hr-2699-by-voice-v.html> (especially the Dec. 20, 2017 Michigan coalition letter and Jan. 4, 2018 press release). *What can you do? Help uphold the U.S.-Western Shoshone Treaty of Ruby Valley! No nuclear waste dumping on Western Shoshone land!*

Slide #59: Another victory we need to extend — we stopped the Deep Geologic Repository (DGR, or better yet, DUD — short for Deep Underground Dump, Dave Martin of Greenpeace Canada's sarcastic name for it!) targeted at the Lake Huron shore, at Bruce Nuclear Generating Station in Kincardine, Ontario, straight east from the tip of Michigan's Thumb. After 20 years of resistance, the Saugeen Ojibwe Nation (SON), whose territory Bruce is on, vetoed the DGR, by an 86% to 14% tribal referendum vote, in early 2020. Gitchi miigwetch SON! DGR1, as it was called, was to have been for permanent burial of Ontario's "low" and highly radioactive "intermediate" level radioactive wastes, from 20 reactors, within less than a mile of the Lake Huron shore.

Slide #60: Another very valuable form of resistance against DGR1 were the resolutions the local grassroots anti-dump group Stop the Great Lakes Nuclear Dump helped to generate across the Great Lakes Basin. This snapshot is from August 2015. But by Jan. 2020, more than 220 resolutions had been collected, representing more than 23 million Great Lakes residents. STGLND's petition now has more than 100,000 signatures. See: <http://stopthegreatlakesnucleardump.com/>.

Slide #61: These two Democratic MI state legislators also made a huge contribution to our victory. Ed McArdle, affiliated with Michigan Sierra Club's Nuclear-Free Campaign, got his MI State Senator, Hoon-Yung Hopgood, to introduce a resolution opposing DGR1. It passed the MI State Senate unanimously, if you can believe that, given the bitter enmity between Democrats and Republicans in the MI state legislature. What was tremendous about all this was that for over a decade, we environmentalists opposing DGR1 had been like a voice in the wilderness. Hopgood's involvement in 2013 created a snowball effect. State Rep. Sarah Roberts also got very involved. The bicameral team even travelled up to Kincardine, to speak out against DGR1 during official Canadian Nuclear Safety Commission and Canadian Environmental Assessment Agency hearings. Hopgood and Roberts' critically timed involvement created momentum that later led to a bicameral, bipartisan U.S. congressional caucus of opposition to DGR1, representing each of the 8 Great Lakes U.S. states, ultimately

led by the likes of U.S. Sen. Stabenow and U.S. Rep. Kildee. This made a tremendous difference in this DGR1 fight! And it all began with Ed McArdle's reaching out to MI State Senator Hopgood! *What can you do? Educate your elected officials, at all levels, on these issues, from local officials, to state officials, to federal officials! Even starting small can lead to big things ultimately, as in this example above!*

Slide #62: Again, thanks very much to the Saugeen Ojibway Nation, for driving the final nail into DGR1's coffin in early 2020! *What can you do? Write a thank you note to SON!*

Slide #63: But despite all these victories against bad nuke waste dumps described above, threats remain. This image evokes deep borehole disposal, something a company called Deep Isolation, Inc. wants to do on-site at reactors like Fermi 2 if it can get away with it. Deep Isolation, Inc. is comprised of former dump officials from Waste Control Specialists in Texas (now proposing Consolidated Interim Storage there, in addition to the national "low" level radioactive waste dumping already happening there, a threat to the Ogallala Aquifer nearby or even directly below!), DOE officials, etc. One of Deep Isolation, Inc.'s staffers, Mary Louise Wagner, provides one infamous example. She used to work for U.S. Sen. J. Bennet Johnson (Dem.-Louisiana), where she had a hand in writing the "Screw Nevada" bill in 1987 that targeted Western Shoshone land for a national high-level radioactive waste dump. She also worked at DOE to implement such bad ideas. She also worked as a senior staff aide to U.S. Sen. Carl Levin (D-MI), as a senior energy advisor. While in Levin's office, I would interact with her re: the Yucca dump proposal, serving as a liaison between concerned citizens and grassroots groups in MI and Levin's U.S. Senate office. I had been a Don't Waste MI board member since the early 1990s, and was in frequent touch with the grassroots across MI, especially as the U.S. Senate's big vote to override Nevada's veto approached. I worked at NIRS beginning in 1999, and my focus was on that impending vote. The vote ultimately took place on July 9, 2002. We lost by a vote of 60 to 39, but it was the best our side had ever done on a Yucca vote in the U.S. Senate. And it was just good enough, to slow down Yucca just long enough, to allow Obama to be elected president and to cancel the dump! A victory we still need to defend, as mentioned above. Just a couple months before that big vote, CACC held a Backyard Eco Conference in central MI. Each year, Backyard Eco featured a robust anti-nuke element. I gathered signatures on a petition against the Yucca dump. Dozens of Michiganders signed. Once back in DC, I presented the petition to Mary Louise Wagner, in order for her to give it to U.S. Sen. Levin. Her response? She said to me, "Kevin, we don't care what you think." That was wrong on a lot of levels. As a Don't Waste MI board member myself, she and her boss should very much so have cared what I thought. But beyond that, there were dozens of Michiganders' signatures gathered at the Backyard Eco Conference — Mary Louise Wagner was throwing their concerns in the trash, without even conveying them to her boss. In the end, Levin voted wrong, to override Nevada's veto, in an attempt to ram the dump down its throat, against its will. Mary Louise Wagner obviously advised him to do just that, just as she'd been working towards her entire career, on Capitol Hill, at DOE. By contrast, U.S. Sen. Debbie Stabenow (D-MI) voted against overriding NV's veto. She actually changed her position on the issue, in the space of two short months, due to our educating her and her staff on the issues. When she voted on July 9, 2002, she specifically cited the risk of high-level radioactive waste barge shipments on Lake Michigan, something DOE and the nuclear lobbyists had concealed from her up to that point. That's why I warn against Deep Isolation, Inc., with the likes of Mary Louise Wagner serving (the public up for dinner) as head of governmental liaison. Deep borehole disposal of high-level radioactive wastes on-site at nuclear power plants in Michigan or any other state, on the shorelines of the Great Lakes, or even within the Basin, is a non-starter, to put it politely. *What can you do? Help us fend off deep borehole disposal schemes targeting the Great Lakes Basin!*

As shown at the beginning of this slide show, DGRs are also still targeted at Ojibwe territory in Ontario, this time for a national Canadian high-level radioactive waste dump. One is targeted at South Bruce, near Kincardine, just inland from Lake Huron. Another is targeted at Ignace, northwest of Lake Superior, surrounded by Ojibway First Nations Reserves, including downstream. These DGRs must also be stopped dead in their tracks, as major environmental injustices on their face. *What can you do? Help us fend off these two DGRs targeting Ojibway First Nations' territories in Ontario!*

Slide #64: Institute for Energy and Environmental Research put this excellent book out in 2006. It's thesis is that nuclear power costs too much, and takes too long, to serve as any kind of solution to the climate crisis. And besides that, it has many additional "insurmountable risks" of its own, such as the risk of nuclear weapons proliferation, the unsolved radioactive waste dilemma, and the risk of major reactor disasters (a point IEER was making five years before Fukushima). We would add other risks to that list, such as "routine" radiation and toxic chemical releases at every stage of the uranium fuel chain.

Slide #65: IEER then published this book in 2007, about what the solutions to the climate crisis are. They are renewables and efficiency. Since then, Dr. Makhijani has been doing state by state analyses, most recently re: Maryland, where he is based. Such an analysis can and should be done for MI. In 2008, as but one example, the Michigan Land Institute, part of MSU, reported that more than 300,000 Megawatts-electric of offshore wind power potential was available to Michigan. Tapping just 1-2% off that would displace most to all of the still operating, very high risk nuclear power generation in MI. Gov. Granholm by 2010 had established an offshore wind advisory council, including MEC ex. dir. James Clift (now a deputy director of MI EGLE). They hammered out two-dozen criteria for determining where best to install offshore wind, taking into consideration environmental and other impacts. They concluded extreme southern Lake Michigan, extreme northern Lake Michigan, and Saginaw Bay where it opens out into Lake Huron, would be he best places. Now that Granholm is Biden's Energy Secretary, lets hope that her decade+ of renewable energy advocacy can come to fruition! But we'll need to be vigilant against her pro-nuclear power policies, which were all too clear during her tenure as governor and state AG before that! Fortunately, Granholm and other Biden Cabinet members have indicated the Yucca dump is still off the table — but their policy on such things as consolidated interim storage facilities, and deep borehole disposal, is much less clear.

Slide #66: No matter the question, nuclear power is not the answer! Dr. Helen Caldicott has been fighting nukes for a half-century. She is one of the speakers listed on the poster on slide #22, for example! She was also a central organizer for the Central Park rally in 1982, for a SANE FREEZE of the nuclear arms race, where up to 2.5 million people showed up, including busloads from places like Kalamazoo (the Kalamazoo Valley Alliance formed in response to the TMI meltdown; it sent one or more buses to NYC for this rally, as well!). That event contributed to Physicians for Social Responsibility sharing in the Nobel Peace Prize in the mid-1980s. She was just awarded a PSR lifetime achievement award in Nov. 2019. Helen is Beyond Nuclear's founding president. *What can you do? Read these "must reads" above. Give copies away as gifts to friends, students, etc.*

What can you do? Find something you love, and dedicate it to the anti-nuclear cause! The ideas are endless! Encourage friends to join you!