

**CONTENTION NO. 10: Notification of First Nations bands was insufficient and violative of law and regulation**

**A. Purpose of Contention**

To ensure that all Native American tribes and bands and First Nations have adequate notification by NRC of the Fermi 3 new reactor licensing and environmental review proceedings, as due to them under applicable treaties, laws, and regulations.

**B. Statement of the Issue**

While it appears that the NRC Staff notified a number of Native American tribes across Michigan, and as far away as Wisconsin and even Oklahoma, about the environmental scoping public comment opportunity for the Fermi 3 new reactor proposal, it appears that the Staff did not notify numerous Native American tribes, bands, and First Nations in the area of concern.

Likewise, it is unclear that NRC adequately notified even the aforementioned tribes in Michigan, Wisconsin, and Oklahoma of their rights to intervene with contentions against the licensing of Fermi 3, in addition to their opportunity to provide public comments during the environmental scoping proceeding. Evidently the tribes, bands, and First Nations not notified of their environmental scoping public comment opportunity were also not informed of their right to intervene against Fermi 3.

In fact, like states, sovereign "Indian tribes," Native American and First Nations, are granted automatic standing in NRC new reactor proceedings. However, tribes cannot intervene, despite their automatic standing, if NRC fails to inform them of the proceeding along with their opportunity and right to petition for leave to intervene and submit contentions.

### **C. Statement of Issues of Law and Fact to Be Raised**

NRC did not notify the Walpole Island First Nation, a mere 50 miles from the proposed site of the proposed Fermi 3 atomic reactor, of the opportunity to provide public comments during the environmental scoping proceeding on the proposal. Walpole Island First Nation occupies unceded territory, named the Bkejwanong Territory, located on a series of islands in the St. Clair River between Michigan and Ontario, to the north and east of the proposed site of the Fermi 3 reactor.

Similarly, NRC did not notify a number of additional First Nations in the area, including the following in southwestern Ontario: the Moravian of the Thames, or Delaware of the Thames, First Nation; the Chippewas of the Thames First Nation; the Oneida of the Thames First Nation; the Caldwell (Potawatomi) First Nation; the Aamjiwnaang, or Chippewas of Sarnia First Nation; the Chippewas of Kettle and Stony Point First Nation; and the Munsee-Delaware First Nation.

There are additional First Nations throughout the Great Lakes basin which were not notified by NRC -- including, as but one example, the Serpent River First Nation of Ontario.

The NRC has legal obligations under the National Environmental Policy Act (NEPA) to notify affected Native American tribes of pending significant proposals and actions, such as the Fermi 3 new reactor environmental and licensing proceedings. NRC is required under NEPA to interact with Native American tribes in a sovereign government to sovereign government manner. This is reinforced by Executive Order 12898, which incorporates the concept of "environmental justice" into decisionmaking related to environmentally controversial projects and minority populations. NRC's own regulations, specifically 10 CFR

51.28(a)(5), require the NRC to invite "any affected Indian tribe" to participate in the environmental scoping process for the new Fermi 3 reactor.

**D. Explanation of the Basis for the Contention**

Walpole Island First Nation would be an affected Indian tribe, should Fermi 3 be built. Over a third of the time, the prevailing winds that reach Walpole Island First Nation emanate from the direction of Fermi 3. Thus, any radiological and/or toxic chemical releases from Fermi 3, whether so-called "routine" or "permissible" releases or accidental releases, would likely reach and negatively impact Walpole Island First Nation. Besides the airborne radiological and toxic chemical risks from Fermi 3, the waterborne radiological, toxic chemical, and thermal risks are also of note. Walpole Island First Nation, and many, perhaps all, of the tribes which NRC notified or did not notify that have been mentioned above, likely have hunting and fishing rights, by treaty (Treaty of 1807 cited *infra*) which would be implicated by Fermi 3, both by "routine releases" of radioactivity, toxic chemicals, and thermal pollution, and especially by large-scale releases of radioactivity due to accident or attack at the Fermi 3 reactor.

Given that numerous species of fish, wild game, and migratory bird consumed as food by Walpole Island First Nation spend a part of their life cycle at or near the Fermi 3 site, whether in the surrounding surface waters or on land, Fermi 3's radiological, toxic chemical and thermal pollution negatively impacts the food supply of the Walpole Island First Nation. Such negative impacts certainly require NRC to notify Walpole Island First Nation of its right and opportunity to provide public comment upon the Fermi 3 proposal during

the environmental scoping proceeding. For this reason, Walpole Island First Nation and other affected First Nations not notified by NRC should be granted at least sixty days to submit public comments and to make a determination as to whether or not they wish to seek intervenor status.

**E. Demonstration That the Issue Raised by the Contention is Within the Scope of the Proceeding and Material to the Findings the NRC Must Make to Support its Licensing Decision**

Typically, when a U.S. federal action impacts First Nations associated with the Canadian federal government, the U.S. federal agency will contact its Canadian federal counterpart. The Canadian federal agency will then provide its U.S. counterpart a list of First Nations in the affected area which should receive notification and an explanation of their rights in the proceeding. Such close and careful coordination and collaboration is codified in such U.S. and Canadian binding legal arrangements as the century-old Boundary Waters Treaty, which created the U.S.-Canadian International Joint Commission (IJC) to oversee such shared natural resources as the Great Lakes.

Additionally, the United States federal government has entered into various treaties with Native American tribes over the course of centuries. These treaties recognize such legally binding rights as Native American tribes' rights to hunt and fish in certain territories. See, for example, the United States' "Treaty with the Ottawa, Etc., 1807" (November 17, 1807; 7 Statute, 105; Proclamation, January 27, 1808) which states at Article V:

It is further agreed and stipulated, that the said Indian nations shall enjoy the privilege of hunting and fishing on the lands ceded as aforesaid, as long as they remain the property of the United States.<sup>1</sup>

---

<sup>1</sup><http://www.1836cora.org/pdf/1807nov17treaty.pdf>

The NRC routinely recognizes the status of First Nations tribes in fulfilling its NEPA/National Historic Preservation Act responsibilities, viz., this NRC notice to the Little Traverse Bay Bands of Odawa Indians on December 24, 2008:

Pursuant to 10 CFR 51.28 and 36 CFR 800.2(c) [under the National Historic Preservation Act], the NRC wishes to ensure that Indian Tribes that might have an interest in any potential historic properties in the area of potential effect are afforded the opportunity to identify their concerns, provide advice on the identification and evaluation of historic properties, including those of traditional religious and cultural importance, and, if necessary, participate in the resolution of any adverse effects to such properties.

Petitioners maintain that the Commission is obligated to notify the Walpoles and other First Nations in Canada just as it must notify tribes located partly or wholly within the United States when there are transboundary environmental impacts from a project. NEPA is applicable to cases with international environmental impacts. See, e.g., the Council on Environmental Quality's *Guidance on NEPA Analyses for Transboundary Impacts*<sup>2</sup> ("NEPA requires agencies to include analysis of reasonably foreseeable trans-boundary effects of proposed actions in their analysis of proposed actions in the United States"). In *Natural Res. Def. Council Inc. v. U.S. Dep't. of the Navy*,<sup>3</sup> the court held that NEPA applied to sonar testing even though much of the planned activity was to take place outside the territorial waters of the United States. And in *Hirt v. Department of Energy*, 127 F. Supp.2d 833, 849 (W.D. Mich. 1999), the court found that NEPA applied to an agency planning to permit the transport of nuclear materials through the United States to the border of Canada (considering the potential

---

<sup>2</sup><http://ceq.eh.does.gov/nepa/regs/transguide.html>

<sup>3</sup>No. CV-01-07781 CAS(RZx), 2002 WL 32095131, at \*21 (C.D. Cal. Sept. 17, 2002)

impact in Canada of an accident).

In light of the cross-boundary effects of a nuclear power plant's operations and of conceivable accident scenarios, plus the fact that a large portion of southern Ontario falls within the 50-mile plume exposure pathway from Fermi (hence potentially according legal standing to intervene to Canadians), and given the treaty rights of the Walpole tribe, which include the waters of Lake Erie only a few hundred yards away from the Fermi 3 site, Petitioners urge that these proceedings must be waylaid the communication pending proper notice and a chance to participate to the Walpole tribe.

In addition, given the negative impacts upon such treaty rights as hunting and fishing near the Fermi nuclear power plant site, especially in Lake Erie, all the affected tribes of Michigan, Wisconsin, Oklahoma, Ontario, and beyond should have been notified by NRC of their opportunity to intervene against the Fermi 3 proposal with relevant contentions. NRC should notify the tribes of their rights and opportunity, and provide them at least sixty days in which to submit petitions to intervene and contentions.

**F. Concise Statement of Facts or Expert Opinion Relied on to Show the Existence of a Genuine Dispute with the Applicant and the NRC Regarding the Adequacy of the License Application**

Beyond Nuclear, Citizens for Alternatives to Chemical Contamination, and Don't Waste Michigan have carefully reviewed NRC correspondence with Native American Tribes, and identified a number of First Nations, including Walpole Island First Nation, that NRC failed to notify. Petitioners reviewed NRC regulations, NEPA, and U.S.-Native American treaties (such as the Treaty of 1807), and determined NRC's lack of notification to numerous First Nations to violate laws and regulations.

Petitioners also communicated with Walpole Island First Nation officials to verify that NRC notification had not taken place. Walpole Island First Nation is well aware of its downwind status in relation to the Fermi Nuclear Power Plant. It is also well aware of the potential impacts upon the fish, wild game, and migratory birds its community fishes and hunts that could come from the construction and operation of the Fermi 3 atomic reactor. Walpole Island First Nation has quality scientific data and legal research that it could bring to bear in NRC proceedings, if NRC had but notified it of its opportunity to participate.

## CONTENTION NO. 11: Spent fuel reprocessing is not an option

"Reprocessing" - referring to the technological reprocessing of spent fuel rods from nuclear power generation - is mentioned several times in Detroit Edison's Fermi 3 COLA, Part 3 "Environmental Report," Chapter 5 "Environmental Impacts of Operation" as an irradiated nuclear fuel management option: at page 5-140, in section 5.7.1, "Uranium Fuel Cycle Impacts," in the context of NRC's Table S-3 regarding uranium fuel chain radioactivity releases to the environment; at page 5-141 in the same section, where is explained that NRC's Table S-3 assumes that reprocessing would involve "uranium only recycle;" and at page 5-144 in section 5.7.1.5, "Radioactive Effluents," which deals with gaseous radiological releases, examines reprocessing releases, and also references Table 5.7-2, Summary, "Table S-3 - Uranium Fuel Cycle Environmental Data," on page 5-149, which also explicitly mentions reprocessing.

Detroit Edison's ER states at page 5-141 "Because the U.S. does not currently reprocess spent fuel, only the "no recycle" option is considered here." However, Detroit Edison is an active member of the Nuclear Energy Institute (NEI), which fully funds the so-called Clean and Safe Energy Coalition (CASE Energy). Both NEI and CASE actively promote reprocessing on an on-going, regular basis. CASE Energy spokespeople have even done so at Fermi 3-related NRC public meetings, such as on August 20, 2008 at Monroe County Community College's La-Z-Boy Center.

In addition, Detroit Edison has a long history of promoting reprocessing, and the fast neutron reactors that go hand in hand with reprocessing. For example, Detroit Edison, in the early 1950s, proposed to the U.S. Atomic Energy Commission that it could generate plutonium in a fast breeder reactor, which then could be separated via reprocessing, and used in U.S. nuclear weapons. After President Eisenhower's "Atoms for Peace" speech at the United Nations in 1953, however, Detroit Edison changed its proposal to generating plutonium in a fast breeder reactor, which would then be separated via reprocessing for supposed re-use in electricity-generating reactor fuel. Detroit Edison in fact did construct and operate the Fermi 1 fast breeder reactor, but it suffered a partial core meltdown on October 6, 1966, and was permanently shut down in 1972, just several years after its initial opening.

For these reasons, Petitioners contend that the risks of nuclear weapons proliferation, environmental devastation, and astronomical cost to taxpayers should lead NRC to reject any future bid by Detroit Edison to reprocess the irradiated nuclear fuel that would be generated at Fermi 3. To this contention is added the risks of sodium fires and even core meltdowns, both of which were experienced at Fermi 1.

First, at page 5-141 of the ER, Detroit Edison states "In developing Table S-3, the NRC considered two fuel cycle options that differed in the treatment of spent fuel removed from a reactor. "No recycle" treats all spent fuel as waste to be stored at a Federal waste repository, **"uranium only recycle" involves reprocessing spent fuel to recover unused uranium and return it to the system. Neither cycle**

***involves the recovery of plutonium.***" (emphasis added) However, NRC's assumption in Table S-3 of "uranium only recycle" is not conservative, since all commercial reprocessing in the world involves plutonium extraction and re-use. Thus, Petitioners challenge NRC's lack of conservatism in Table S-3, as they do on other points in their contention against NRC's Nuclear Waste Confidence Rule.

The following excerpt from Dr. Arjun Makhijani's "***The Technical and Economic Feasibility of a Carbon-Free and Nuclear-Free Energy System in the United States***," 4 March 2009, states Petitioners' case against reprocessing as an irradiated nuclear fuel management option:

"The prospects for new designs of reactors, such as the fast neutron reactors, to play a role in addressing urgent climate change issues are even worse. One hundred billion dollars (1996 dollars) have been spent world wide trying to commercialize such reactors and their associated plutonium separation, fuel fabrication, and fuel use technologies. This effort has been an economic failure. Even the underlying fast neutron reactor technology is not developed enough to be firmly commercialized. For instance, the most recent demonstration reactors, such as the Monju reactor in Japan and the Superphénix in France (by far the largest such reactor ever built), have had severe problems. Monju had a secondary loop sodium fire in 1995; it was commissioned in 1994. It has not yet reopened as of the end of January 2009. Superphénix was closed after 14 years of operation at an average capacity factor of about seven percent.<sup>1</sup>

It should be noted that proposals to pursue the Integral Fast Reactor have not publicly addressed these problems. Why has there not been a clear learning curve to the commercialization of either sodium-cooled fast neutron reactors or the various reprocessing technologies that have been proposed? The PUREX technology in use in France can be called commercial only in the sense that governments are paying for reprocessing services. But it is not commercial, in the sense that it remains far more expensive than using fresh uranium fuel. So far, France only reuses about one percent of the spent fuel as fuel.

The specifics are as follows. About one percent of the spent fuel is plutonium, but not all of it is used as fuel - some is stored as surplus - there are over 80 metric tons of plutonium stored at La Hague, enough to make about 10,000 bombs. The majority is French, but there is also a significant amount owned by others, including the Japanese, who have contracted with la Hague for reprocessing services. The about 85 percent of the uranium (which is 95 percent of the spent fuel) is simply stored and has not been reused. About 15 percent has been sent to Russia for re-enrichment, and most of this then becomes depleted uranium stored in Russia. The 15 to 20 percent of this

---

<sup>1</sup> For an analysis of the development of the plutonium fuel cycle, including breeder reactors (the most common design of which is the fast neutron sodium-cooled reactor) see Arjun Makhijani, *Plutonium End Game: Managing Global Stocks of Separated Weapons-Usable Commercial and Surplus Nuclear Weapons Plutonium* (Institute for Energy and Environmental Research, Takoma Park, Maryland, January 2001), at <http://www.ieer.org/reports/pu/peg.pdf>. Hereafter Makhijani 2001.

uranium that becomes fuel has been loaded into reactors (the rest is depleted uranium that is left over from the re-enrichment process).

But then only about five percent of the fuel actually generates electricity (since most of it is U-238, which is not a fuel and just two percent of this is converted to plutonium in the course of reactor operation).<sup>2</sup>

Hence, so far France has used less than one-fifth of one percent of recovered uranium as material that has been fissioned in reactors and actually generated electricity. Overall, it would be fair to say that about one percent or just over one percent of the reprocessed spent fuel has been used as fuel in France. In the context, based on current reality, the term "recycling" for French spent fuel management is 99 percent false - or if one puts it more positively, about one percent true. Further, MOX fuel creates a proliferation risk since it can be chemically separated into a weapons-usable (plutonium) and non-weapons-usable component (depleted uranium) without much sophistication or danger of immediately lethal radiation exposure. It also results in higher costs to the French consumer and the discharge of about a hundred million gallons of radioactively contaminated liquids into the English Channel.<sup>3</sup> Further, French high-level waste (four percent of spent fuel by weight and most of the radioactivity) is piling up on storage at the French reprocessing plant. A geologic repository is needed, and the French have a program to create one, but it has run into problems, including difficulties of public acceptance quite similar to those in the United States.

Ninety five percent of spent fuel consists of contaminated uranium; almost all of it is piling up - some in Russia (where it was sent) and most of it in France. Only a very small portion of French fuel is "recycled" in the strict sense of being used as new fuel that actually produces energy."

Given its nuclear weapons proliferation potential, the environmental devastation it unleashes wherever it is carried out, its ineffectiveness, and its astronomically high costs, reprocessing (and the fast neutron reactors that go hand in hand with reprocessing) should be dismissed as an irradiated nuclear fuel management option. The risks of fast neutron reactor accidents, including core meltdowns and sodium fires, add to the reasons why reprocessing should be prohibited in the United States, a policy first instituted by President Gerald Ford in 1976 as a nuclear weapons non-proliferation policy, and strengthened by President Jimmy Carter in 1977.

---

<sup>2</sup> All values are rounded.

<sup>3</sup> For details see Makhijani 2001 and Annie Makhijani, Linda Gunter, Arjun Makhijani, *COGEMA: Above the Law? Concerns about the French Parent Company of a U.S. Corporation Set to Process Plutonium in South Carolina* (Institute for Energy and Environmental Research, Takoma Park, Maryland, May 7, 2002). The latter is on the web at <http://www.ieer.org/reports/cogema/report.html>.

**CONTENTION NO. 12: The Emergency and Radiological Response Plan is deficient**

1. During severe winter weather, current road clearing capabilities are woefully inadequate and must be upgraded in surrounding areas.

This inadequacy is common knowledge in the Community of Monroe as exhibited by the attached letter to the editor of the Monroe Evening News dated January 21, 2009 from John Pipis, Monroe. And from Article published at [MonroeNews.com](http://MonroeNews.com) on Feb 1, 2009 entitled: Road-plowing plan in works.

Both of these documents demonstrate and document the contention above with regard to the Emergency Evacuation and Radiological Emergency Response Plan. They are attached to this document.

2. Emergency planning should extend at least 50 miles, and should include the surrounding major population centers of Detroit/Windsor, Toledo, and Ann Arbor. Current evacuation routes are too narrow, and must be expanded to accommodate a mass exodus in the event of a major accident or attack. While the Emergency Evacuation documents identify staffing needs for an evacuation. The procurement of these resources are dubious. It has not been demonstrated that they actually exist other than on paper. *i.e.* all the funding cuts relating to road work has rippled throughout the all services.

3. Lack of attention in the Environmental Report document to the feasibility of the existing Emergency Evacuation Plan for Fermi II during the construction phase of the proposed Fermi III.

During a construction phase of several years, the report projects a workforce of 2900 workers (4.4.1) who are not expected to re-locate from their current homes, and states that many of these workers will drive 50 miles, and some, up to 70 miles to the work site. In this report there is no mention of the current Evacuation Plan - let alone that it will even work with such a large number of vehicles on the road. Those who live near Fermi during the construction of Fermi II experienced high traffic volume on Dixie Highway at shift change times. When construction related to Fermi 3 coincides with Fermi 2 outage swell of workers, a combined traffic volume of 5,000 vehicles is reported by DTE as possible.

In Chapter 4, "Environmental Impacts of Construction" (DTE Energy, Fermi 3 Combined License Application, Part 3: Environmental Report, Revision 0, September 2008). From 4.4.2.4, referring to the Pijawka study: "Traffic congestion, however, was found to be a serious problem at most sites." No follow-up or response to this statement, which cites a "serious problem" to be expected during the construction phase. This lack of response to the "serious problem" of traffic congestion is a glaring omission in the report.

There are two main routes from the Fermi site to I-75:

.

- > Fermi Drive via Dixie Highway to Exit 15, a distance of 5 miles, the first two miles two lanes and the last three miles (nearest to I-75) three lanes;
- 
- > Fermi Drive to Dixie Highway à Post Road à War Road à Nadeau Road à I-75 Exit 18, a distance of 6 miles along two-lane local and primary roads.

There are other routes extending northeasterly toward the down river communities of Wayne County.

Dixie Highway is the main road into and out of the Fermi site and, in the case of an emergency, would be the main exit route for approximately 10,000 people who live between Dixie Highway and the Lake Erie shoreline as well as several thousand more who live on the opposite side of the highway.

The Jefferson public school system near Fermi lacks an adequate school bus fleet to perform an emergency evacuation. The Jefferson Schools District does not have enough buses and drivers to evacuate the entire student population in a single run. North Elementary School, Jefferson Middle School, Jefferson High School are all less than 3 miles from the Fermi 2 site and from the proposed Fermi 3. Sodt Elementary School 3.5 miles away, and Hurd Road Elementary School within the 5-mile radius. In the absence of Fermi 2 and proposed Fermi 3 Emergency Evacuation preparedness on such a scale would not be necessary.

Potassium iodide tablets, along with instructions for proper usage, should be distributed regularly within the 50 mile emergency planning zone, as should emergency evacuation plan instructions. It is necessary to have immediate access to Potassium iodide in order to prevent thyroid ingestion / uptake. Currently Potassium Iodide tablets are not readily available.

The following mitigation measures are requested to be taken and that full funding be provided to implement them. A thorough study of all measures necessary to protect the public may indicate the need for further mitigation measures.

Mitigation Remedy:

- 
- > widen to three lanes, upgrade and pave the above-cited access routes from the Fermi site to I-75 as well as other routes to points north;
- provide salt storage in the immediate vicinity for Monroe County Road Commission application during snowy and icy weather;
- provide at least two sets of three extra Monroe County Road Commission snow plows/salt spreaders (total 6) along with operators (12), to be stationed in the immediate vicinity during winter months to keep routes clear during winter weather; DTE must provide the Monroe County Road Commission with Garages with three snow plows each at both ends of the North Dixie Highway. To provide financial resources for 24 hour staffing of those snow plows and garages. This will allow for adequate snow removal,

for North Dixie highway as well as the immediate roads necessary for an Emergency Evacuation.

- provide the Jefferson Schools District with enough buses and drivers to evacuate the entire student population in a single run - North Elementary School, Jefferson Middle School and Jefferson High School (all less than three miles from the Fermi II site), Sordt Elementary School (~3.5 miles), and Hurd Road Elementary School (within the 5-mile radius);
- provide additional full-time staffing for Monroe County Sheriff coverage for traffic and crowd control in the event of an emergency requiring evacuation.
- Build separate road access to service 5,000 plus vehicles related to construction and refueling outages at the Fermi site. Residents should not be forced to compete with workers for access to evacuation routes. Workers should be evacuated on separate additional route designed to mitigate impact of inadequate evacuation routes.
- Provide Potassium Iodide tablets to individual homes within 50 mile radius so that there immediate access to block thyroid uptake. Provide these whether the proposed Fermi 3 goes forward or not. They are needed because of the existence of Fermi 2.
- The financial burden of these upgrades must be borne by Detroit Edison Company as they are the proponent of the proposed Fermi 3. It is the existence of the Fermi 2 and the proposed Fermi 3 which necessitates these resources be made whole.

**CONTENTION NO. 13: The identification, characterization and analysis of need, alternatives to construction, and the mix of conservation and renewable energy sources is wholly inadequate and violates NEPA**

DTE's identification, characterization and analysis of the role and potential displacement of the obviously preferred alternative of a new baseload nuclear power plant reflect carefully-selected (and even more carefully-ignored) data and facts. The upshot is that the Environmental Report is deficient; it does not contain complete data for meaningful understanding of the reasonable alternatives which NEPA enjoins lead agencies to assemble, and discuss within an Environmental Impact Statement.

**A. NEPA standards for consideration of alternatives**

NEPA requires that federal agencies provide a detailed evaluation of alternatives to the proposed action in every environmental impact statement. 42 U.S.C. § 4332(C)(iii); 40 CFR § 1502.14(a). This discussion of alternatives is essential - not merely salutary - to NEPA's statutory scheme and purpose:

The goal of the statute is to ensure 'that federal agencies infuse in project planning a thorough consideration of environmental values.' The consideration of alternatives requirement furthers that goal by guaranteeing that agency decision-makers '[have] before [them] and take into proper account all possible approaches to a particular project (including total abandonment of the project) which would alter the environmental impact and the cost-benefit balance.' NEPA's requirement that alternatives be studied, developed, and described both guides the substance of environmental decision-making and provides evidence that the mandated decision-making process has actually taken place. Informed and meaningful consideration of alternatives -- including the no action alternative -- is thus an integral part of the statutory scheme.

*Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228 (9th Cir. 1988), cert. denied, 489 U.S. 1066 (1989). Accordingly, the regulations and cases set high standards for an agency's consideration of alternatives in a NEPA document and define the range of alternatives that must be

considered. The agency must "[r]igorously explore and objectively evaluate all reasonable alternatives' to a proposed action." 40 CFR § 1502.14(a). The "existence of a viable but unexamined alternative renders an environmental impact statement inadequate" and requires that an agency's action be set aside. *Alaska Wilderness Recreation & Tourism v. Morrison*, 67 F.3d 723, 729 (9th Cir. 1995); *Idaho Cons. League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992); *Citizens for a Better Henderson v. Hodel*, 768 F.2d 1051, 1057 (9th Cir. 1985).

For an adequate EIS, the range of alternatives considered must be sufficient to permit a reasoned choice. *Methow Valley Citizens Council v. Regional Forester*, 833 F.2d 810, 815 (9th Cir. 1987), *rev'd on other grounds sub nom. Robertson v. Methow Valley Citizens Council*, 490 U.S. 332 (1989). NEPA requires agencies to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources." 42 U.S.C. § 4332(E); 40 CFR § 1508.9(b). "An agency must look at every reasonable alternative, with the range dictated by the nature and scope of the proposed action." *Northwest Env'tl Defense Center v. Bonneville Power Admin.*, 117 F.3d 1520, 1538 (9<sup>th</sup> Cir. 1997). To satisfy NEPA, the federal agency must demonstrate it has taken a "hard look" at the environmental consequences of the proposed action. "To comply with NEPA's 'hard look' requirement an agency must adequately identify and evaluate environmental concerns." *Friends of the Bow v. Thompson*, 124 F.3d 1210, 1213 (10<sup>th</sup> Cir. 1997).

As detailed below, the discussion of alternatives contained in DTE's Environmental Report - which the applicant expects to be incorporated as the heart of the EIS - lacks significant information and will require a great deal of improvement before it can be said to meet

the standards set by NEPA. DTE fails adequately to assess the costs of the proposed nuclear plant, especially when compared to the alternatives of meeting the likely need for power through a modular plan which includes demand and energy reduction through demand-side management plus the construction of distributed renewable energy facilities including offshore wind, solar, landfill gas and biomass. The enormous size of the proposed investment, especially relative to the size of the Company, will effectively prevent pursuit of significant sustainable and renewable options for years to come. The Company has systematically exaggerated the risks of alternatives, and has underestimated the potential contribution of such alternatives to meeting resource needs. The Company has not assessed all reasonable options in a comprehensive fashion. The Company's proposal is not subject to confirmation because it represents new and as-yet untried technology whose design is not yet complete.

**B. The grossly lowballed cost of the facility**

DTE is under fire in a pending rate case before the Michigan Public Service Commission for grossly underestimating the probable cost of Fermi 3. The more likely cost scenarios are missing from the Environmental Report and have direct implications for comparing the economics and relative environmental impacts of sustainable alternatives to nuclear.

Geoffrey C. Crandall, former technical staff member of the MPSC and a private utility economist, stated in July 2008 that:

Development and assessment of resource options is a necessary part of the IRP process. These cost estimates are identified in "Michigan's 21st Century Electric Energy Plan". Exhibit MEC-3 (GCC-2) contains "Figure 24: Base Case Technology Screening Curves". Chapter 1 of the Michigan Integrated Resource Plan Report indicates the estimated costs of various resource options. In that graph a wide range of costs per mWh are

identified depending on the resource type and capacity factor. This chart shows the resource screening curves to help assess their potential economic viability. As can be readily seen the costs of the resources identified range from less than 10 cents/kWh to as high as 50 cents/kWh depending on the capacity factor and other variables. MEC/PIRGIM witness Kushler has indicated in his testimony in this proceeding that 608 MW's and over 4,200 GWh's are available to DECO based on the pro-rated share of the base case energy efficiency estimate included in the 21st Century Energy Plan, at an average levelized cost of approximately 3 cents/kWh. These energy efficiency values are many times greater than what DECO has identified as resources they intend to rely on in this planning period.

**Q. What observations can you provide regarding the DECO resource projections?**

**A.** The estimated cost of resources in the 21st Century Energy Plan included the estimated construction costs of various resource options including nuclear power and integrated gasification combined cycle technology, etc. The estimated construction cost of a nuclear unit is \$2352 and the IGCC is \$1785. Based on recent developments in the industry there is little doubt that these costs are grossly understated. For example, Exhibit MEC-4 (GCC-3), an industry article published in October 2007, indicated that nuclear power construction costs were climbing up from \$3,000-\$4,000/kW to \$5,000-\$6,000kW according to Moody's Investor Service. Also according to another industry source, published in April 2008 the construction costs of a new nuclear plant would be as high as \$8,000/kW. This would result in a \$12-\$18 Billion dollar construction cost for a 2,200 MW nuclear unit. The 21st Century Energy Plan identifies a \$2352/kW cost which is far less than currently estimated costs for new construction of nuclear plants. Nuclear power also introduces an element of risk and uncertainty with respect to how to dispose of the nuclear waste by-product which has an extensive life expectancy.

In addition to the inaccurate estimates of the cost of nuclear power, in April 2008 the Virginia State Corporation Commission denied a request from a utility to build an IGCC costing over two billion dollars. ***The proposed construction cost was approximately \$3500/kW or approximately twice the cost estimated in the 21st Century Energy Plan (\$1785). These are examples of grossly underestimated construction costs. Use of inaccurate resource costs will portray an inaccurate resource economic assessment and skew the results of the IRP analysis.*** This cost information needs to be updated to more accurately reflect the potential economic impact of resource selection decisions. (Emphasis supplied)

Direct Testimony in Case No. U-15244, *In re Detroit Edison Company*, p.

**C. Outdated argument of need**

The COLA and its ER do not contain reference information arising since the massive economic "crash" on Wall Street commencing right at the end of September 2008. The COLA was submitted on September 18, 2008, and for understandable reasons, does not acknowledge nor account for the dramatic implications that have beset the Michigan's major U.S. automakers: Chrysler, General Motors, and Ford. Two of the three are considered by their employees to be on "death watch," perhaps at the brink of corporate bankruptcy.

In the chapter "Need for Power," Chapter 8 of the Environmental Report, DTE references the final Workgroup reports of Michigan's 21st Century Electric Energy Plan, a project delegated to the Public Service Commission by Michigan's Governor. This study, which forms the core data projections in the ER supporting endless growth in electrical consumption and consequently the "need" for Fermi 3, is now about 2.5 years old (data gathered in mid-2006), and it has been overtaken by history. The Michigan 21<sup>st</sup> Century Energy Plan ("21CEP") forecast in the ER shows a 1.2% annual growth expectation in electric demand.<sup>2</sup>

However, many factors have come together that indicate electric demand growth in Michigan will be much less than thought 2.5 years ago, including population loss, a structural decline in the Michigan economy, Public Act 295 (integrated resource portfolio) mandates, and strong energy efficiency trends in Michigan and anticipated at the federal level.

---

<sup>1</sup><http://efile.mpsc.cis.state.mi.us/efile/docs/15244/0263.pdf>

<sup>2</sup>ER, Rev. 0, Chapter 8, p. 8-2

DTE's most recent rate case application before the Michigan Public Service Commission contradicts its assertions in the Environmental Report which reflect newer (but still somewhat dated) forecast assumptions. DTE now anticipates an actual drop in electric usage thru 2013. The new market realities are that Michigan has lost population for three years in a row. The state is in the grip of a major structural economic decline. Since 2003, cumulative real GDP growth in Michigan has ranked last among all states, declining by 3 percent. Michigan currently has the highest unemployment rate in the country, and the economic outlook is dim because of "Big Three" capacity downsizing, even bankruptcy. Most of this downsizing will take place squarely within DTE's service area.

Notably, the 21CEP "low load growth" scenario, produced in late 2006, approximated Michigan's current dismal electric sales outlook. It indicates no new electric plant is needed until 2021.<sup>3</sup>

The U.S. Energy Information Administration (EIA) recently released its forecast for U.S. electric sales growth from 2007 - 2030, and has revised growth expectations down to 1% a year, with coal generation expected to decline.<sup>4</sup> Since the national forecast is for 1% growth, the forecast for Michigan, with the highest or nearly-highest unemployment rate in the country, is likely lower.

In contrast to the Fermi 3 "Need for Power" section of the ER, DTE's most recent rate case filing (U-15677 of 9/30/2008) reflects current negative trends and forecasts a drop in electric peak demand

---

<sup>3</sup>See p. 67 of [http://www.cis.state.mi.us/mpsc/electric/capacity/energyplan/newenergy\\_oct11\\_2006rev.pdf](http://www.cis.state.mi.us/mpsc/electric/capacity/energyplan/newenergy_oct11_2006rev.pdf)

<sup>4</sup>[www.eia.doe.gov/oiaf/aeo/index.html](http://www.eia.doe.gov/oiaf/aeo/index.html)

from 12,364 mW in 2006 to 11,033 mW in 2013.<sup>5</sup> DTE has contradicted its COLA.

The 21CEP and DTE's recent rate case application did not adequately address Public Act 295 legislation, passed in October 2008, after the COLA was filed. Michigan's renewable portfolio statute calls for 10% renewable energy to be included in DTE's arsenal by 2015. The long-term effects and changes which might be wrought by major changes in American manufacturing as a result of the Great Recession are not as yet well understood. However, the Michigan Department of Energy, Labor and Economic Growth noted in its December 2008 "Energy Tidbits" newsletter that:

Unexpected Drop in U.S. electricity consumption has utility companies wondering whether this could reflect a permanent shift in consumption. Sales growth of 1% to 2% annually in the U.S. has been typical. American Electric Power, which owns utilities operating in 11 states, saw total electricity consumption drop 3.3% in the same period from the prior year. Among residential customers, the drop was 7.2%. *DTE has also seen electric use drop during the past months and it may be as much as 2% by the end of the year.*<sup>6</sup> (Emphasis supplied)

More renewable and efficiency mandated and actions are foreseen in the coming years. The Michigan Climate Action Committee (MCAC) calls for up to 2% reduction in energy usage annually. The Midwest Governor's Association (MGA) calls for a 2% annual reduction. Both call for 25% renewable energy deployment in utility portfolios by 2025. President Obama is already talking about major national renewable energy and energy efficiency programs, with major funding in the just-passed Stimulus Bill.

The data have changed, and dramatically so. In less than six (6)

---

<sup>5</sup>Exhibit A-11 in <http://efile.mpsc.cis.state.mi.us/efile/docs/15677/0001.pdf>

<sup>6</sup>[http://www.michigan.gov/documents/dleg/December\\_259885\\_7.pdf](http://www.michigan.gov/documents/dleg/December_259885_7.pdf)

months, the economic prognosis for Michigan, and consequent implications for energy usage and need, have shifted sharply. The COLA does not contain the new facts and the necessary new analysis.

**D. Disingenuous discussion of energy efficiency**

In its COLA discussion of conservation and demand-side management, DTE mentions discussion as part of a task force study of state-wide smart meter implementation and smart rate programs. Detroit Edison agrees that after 10 years of program expansion of its air conditioning cycling program, 162 MWe of peak would become available.<sup>7</sup> DTE analyzes this achievement in tandem with construction of additional coal- or natural gas-fired generating capacity, not wind or photovoltaic, and proceeds to the conclusion (ER, Rev. 0, p. 9-7) that "combining the effects from conservation and power purchases are not sufficient to provide the necessary baseload power in order to satisfy target reliability levels and reserve margin requirements."

One utility economics expert criticized DTE's pessimism about the possibilities of improving energy usage in 2008 testimony as a witness in the DTE rate increase request before Michigan's Public Service Commission. Dr. Martin Kushler, Director of the Utilities Program for the American Council for an Energy Efficient Economy ("ACEEE"), a non-profit organization, with headquarters in Washington, D.C., dedicated to research and policy development in the area of energy efficiency, concluded that "Detroit Edison is simply not taking energy efficiency seriously as a resource in their utility system." Direct Testimony in Case No. U-15244, *In re Detroit Edison Company*, p. 4.<sup>8</sup> Dr. Kushler

---

<sup>7</sup>COLA ER, Rev. 0 p. 9-6, Subsect. 9.2.1.3.

<sup>8</sup><http://efile.mpsc.cis.state.mi.us/efile/docs/15244/0277.pdf>

stated:

To begin, it is mystifying to me how the Company could assume they would have an energy efficiency program by 2009, yet not propose a program, or any of the cost recovery or operational details of such a program, in a rate case being conducted in mid-2008. That certainly doesn't demonstrate any Company commitment to serious energy efficiency.

Moreover, the presumed impacts of the 'expected' energy efficiency program are miniscule. Witness Colandrea assumes a total effect of only 572 GWh (p.24, line 22) and "at most" 49 MW (p.26, line 20) by 2016. By comparison, Detroit Edison's pro-rated share of the "base case" energy efficiency scenario proposed in the 21st Century Plan would be 4,254 GWh and 608 MW, more than seven times the GWh and twelve times the 1 MW of the energy efficiency that the Company is assuming (from their yet-to-be-proposed energy efficiency programs).

Using another benchmark of comparison, 49 MW after 8 years of programs (2009 through 2016, per witness Colandrea) would only be about 6.5 MW per year --- less than 6.005% of Detroit Edison's 2009 bundled peak demand of 13,044 MW (Colandrea, p. 27, 7 line 15). Similarly, the 572 GWh impact after 8 years would only be about 71.5 GWh per 8 year, or only about 0.1% of their 2006 actual sales of 50,178 GWh (Colandrea p.24, line 9) per year.

***These projected energy efficiency impacts are beyond trivial, they are negligible.*** By comparison, legislation which passed the Michigan House this year, patterned closely after the 21st Century Plan, would require annual savings of 1.0% of total sales per year by 2012. Legislation signed into law in Illinois and Ohio during the past year would require savings ramping up to 2% per year after a decade. These are energy savings levels 10 to 20 times higher than the level Detroit Edison is assuming in this case. (Emphasis supplied)

It seems that when going before the regulators to approve Construction Work in Progress funding for a new nuclear power plant, DTE bespeaks a pessimism which doesn't carry over to its public relations work. In DTE's advertising for a forthcoming March 14, 2009 "energy saving seminar" in Warren, Michigan, DTE proclaims:<sup>9</sup>

Energy expert, Larry Kaufman, and a panel of experts will help show how to cut your bills in half! In this age of rising costs and tough economy he will show you how to reduce your bills up to 50% without giving up comfort!

Other energy experts besides DTE's surprisingly creative ones have been meticulously assembling data on the energy savings achievable

---

<sup>9</sup><http://www.wwj.com/WWJ-Energy-Savings-Seminar/3868568>

from inexpensive, off-the-shelf technology. Arjun Makhijani, Ph.D. in electrical engineering and computer science, President of the Institute for Energy and Environmental Research, predicts that "with moderate investment in efficiency and combined heat and power systems, energy use in the residential and commercial sectors can be reduced by 20 percent compared to 2005 even as per person area expands and per person use of appliances is the same as under 'business as usual' assumptions."<sup>10</sup> In his book, Carbon-Free and Nuclear-Free, Dr. Makhijani projects as foregone a 1% per year decline in industrial energy use between 2010 and 2050,<sup>11</sup> which if true within DTE's distribution territory would show a roughly 10% decrease in overall industrial demand by the anticipated operational date of Fermi 3.<sup>12</sup>

The general rule applicable to cases involving differences or changes in demand forecasts is not *whether* the utility will need additional generating capacity but *when*. *Commonwealth Edison Co. (Byron Nuclear Power Station, Units 1 and 2)*, LBP-80-30, 12 NRC 683, 691 (1980). The standard for judging the "need-for-power" is whether a forecast of demand is reasonable and additional or replacement generating capacity is needed to meet that demand. *Carolina Power & Light Co. (Shearon Harris Nuclear Power Plant, Units 1-4)*, ALAB-490, 8 NRC 234, 237 (1978).

The foregoing discussion reveals that the forecasts upon which

---

<sup>10</sup>Makhijani, "The Technical and Economic Feasibility of a Carbon-Free and Nuclear-Free Energy System in the United States," paper at [www.ieer.org](http://www.ieer.org)

<sup>11</sup>P. 92. The entire book Carbon-Free and Nuclear-Free is downloadable without charge at <http://www.ieer.org/carbonfree/CarbonFreeNuclearFree.pdf>

<sup>12</sup>This projection is probably rather conservative, as Carbon-Free and Nuclear-Free was published some months before the Wall Street Crash of 2008, which, in the consequent precariousness in Michigan's large auto manufacturing sector, has seen a straight decline in electrical demand over the past year.

DTE relies are severely out-of-date and, given a fast-breaking new trend toward decreased electricity demand in Michigan, the assumptions DTE uses cannot be said to be "reasonable." DTE must be required to provide contemporaneous data and need projections, the informational base which is sorely missing from the ER. It is considerably more likely than it might have been in 2006 that the date by which new baseload capacity is needed in the DTE grid must be moved back.

#### **B. Solar and Wind**

The facts and discussion omitted from the solar-photovoltaic and wind power portions of the Environmental Report are considerable.

Respecting wind, DTE offers this factually unsupportable conclusion:

9.2.2.1.1 While wind technology is expected to improve in capacity factor and, of course, is attractive due to the renewable energy source characteristics, low capacity factors for wind generated power along with excessive cost of energy storage devices make this source unacceptable as an alternative to a baseload electricity generator. As shown in Table 9.2-1, wind capacity factors range from approximately 25 to 30 percent, well below the 90 to 95 percent required for a baseload plant (Reference 9.2-5). On average, wind resources would require 3.5 times as many MWe of installed capacity to provide an average capacity level equivalent to that from baseload nuclear resources with a capacity factor of 90 percent. However, even after adjusting for average available capacity, this capacity is not equivalent to that of a reliable baseload resource, given that in any point in time, generation can range from zero to full capacity. Furthermore, in general, there is a poor correlation between wind output and peak demand. In particular, wind tends to be unavailable on a hot summer day when both baseload and peaking resources are most needed.

As Dr. Makhijani points out in the aforementioned article, renewables can generate in off-peak times of day to accomplish such feats and producing ice, which is allowed to melt for air conditioning source material during those "windless August days" to which DTE refers.

Moreover, DTE actually fictionalizes the comparison it would like

to make, as opposed to the comparison that Michigan's IRP statute, common sense, and the vaunted energy marketplace are forcing DTE to make: the utility attempts to argue a calculated exaggeration, that the only legitimate comparison would be to replace a baseload facility such as Fermi 3 with 100% wind power, instead of the coming mix of conservation, geothermal, wind, solar, and other innovations. This is a wholly invalid comparison, and the ER is lacking in objective, serious consideration of the wind and solar alternatives as a consequence.

As to photovoltaic energy, DTE effectuates a thorough rejection:

9.2.2.1.2 Consideration of solar technologies as an alternative to Fermi 3 must first focus on whether they can be built as baseload capacity. Due to their intermittent nature during the day and lack of economic thermal storage devices at night, solar is not considered a baseload replacement option compared to Fermi 3. Concentrated solar power and photovoltaic distributed generation generally are installed at the end-user location. As shown in Table 9.2-1, average capacity factors for solar range from 15 to 20 percent. Storage capacity is not commercially available to serve as baseload generation. As noted by EPRI (Reference 9.2-4), improved technology for energy storage is necessary to enable deployment of solar as a baseload source, and these advances are not predicted to be achieved in the near term.

. . .[I]t is estimated that 35,000 acres will be needed per 1000 MWe for photovoltaic and 14,000 acres per 1000 MWe for solar systems. This large amount of land use has potential adverse environmental effects. . . .

In summary, solar power is not a reasonable alternative to provide for the baseload need that would be served by Fermi 3 because of the relatively smaller potential for solar in the State of Michigan, solar power's lower capacity factor and high land requirements.

This is a stunning set of exaggerations and fictions. In February 2009, First Solar, one of the most successful photovoltaic firms in the country, announced that it can now produce thin-film collectors

for \$1/kw.<sup>13</sup> And Dow Chemical, a major Michigan manufacturer, plans to sell solar shingles by 2011, such that one's roofing material becomes a photovoltaic transformer.<sup>14</sup>

"In the context of the environmental impact statement drafting process, when a reasonable alternative has been identified it must be objectively considered by the evaluating agency so as not to fall victim to 'the sort of tendentious decisionmaking that NEPA seeks to avoid.'" *Private Fuel Storage, L.L.C. (Independent Spent Fuel Storage Installation)*, LBP-01-34, 54 NRC 293, 302 (2001), citing *I-291 Why? Association v. Burns*, 372 F. Supp. 223, 253 (D. Conn. 1974), aff'd 517 F.2d 1077 (2d Cir. 1975). A hard look for a superior alternative is a condition precedent to a licensing determination that an applicant's proposal is acceptable under NEPA. *Public Service Co. of New Hampshire (Seabrook Station, Units 1 & 2)*, ALAB-471, 7 NRC 477, 513 (1978).

It is precisely a hard, serious look that is missing from the ER discussion of alternatives propounded by DTE. NEPA's implementing regulations recognize that the consideration of alternatives is "the heart of the environmental impact statement." 40 CFR § 1502.14. Council on Environmental Quality regulations emphasize that:

[The alternatives] section is the heart of the environmental impact statement. Based on the information and analysis presented in the sections on the Affected Environment and Environmental Consequences, it should present the environmental impacts of the proposal

---

<sup>13</sup><http://greeninc.blogs.nytimes.com/2009/02/24/first-solar-claims-1-a-watt-industry-milestone/>

<sup>14</sup>[www.chicagotribune.com/news/chi-ap-mi-solarshingles,0,2864250.story](http://www.chicagotribune.com/news/chi-ap-mi-solarshingles,0,2864250.story)  
chicagotribune.com

and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decision-maker and the public. In this section, agencies shall:

(a) Rigorously explore and objectively evaluate all reasonable alternatives . . . .

(b) Devote substantial treatment to each alternative considered in detail . . . .

(c) Include reasonable alternatives not within the jurisdiction of the lead agency.

(d) Include the alternative of 'no action.'

(e) Identify the agency's preferred alternative or alternatives . . . .

(f) Include appropriate mitigation measures not already included in the proposed action or alternatives.

40 CFR 1502.14.

NEPA's emphasis on "the importance of coherent and comprehensive up-front environmental analysis. . . ensure[s] informed decision-making to the end that the agency will not act on incomplete information, only to regret its decision after it is too late to correct." *Blue Mtns. Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1216 (9th Cir. 1998).

Petitioners urge the NRC to allow this contention to proceed to hearing so that the public might avoid buyer's remorse as a result of gross factual omissions appearing in the current version of DTE's COLA and Environmental Report.