

## Fermi3CEm Resource

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Here are my comments regarding the proposed licensing of Fermi 3.

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Jessie Pauline Collins

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Comments Re: NUREG 2105

As a concerned citizen who resides within 15 air miles of the existing Fermi reactors, and knowing of the contamination accumulated from those reactors, and the dangers facing the bio-region, I do not wish another reactor in our area.

The length of the document was cumbersome and redundant. I only hope that was done to be thorough, and not to be a state-of-the-art literacy test set forth to discourage affected citizens from participating in Democracy. For example, relating the paper numbers for my questions would have been easier if Vol. 1 had been numbered 1 through 804, instead of 1.1 through 8.25; and Vol.2, 1 through whatever, instead of iii through – L-5.

Here are my questions, comments, and concerns from Vols. 1 and 2 of NUREG 2105:

1. Is it true that five of the six new nuclear reactors of the Fermi 3 proposed design ordered have been cancelled? Well, let's make it unanimous and cancel this one as well, and join the rest of the world in a nuclear moratorium.
2. Regarding the "Preconstruction Activities" (v 1, p 1.6) which "include clearing, grading, excavating, dredging, and discharge of fill, erection of support buildings and transmission lines, and other associated activities." Why did the Detroit Edison spokesman say at the Dec. 15<sup>th</sup> public meeting that the company had not even decided to build Fermi 3, much less start work on it? When the Quarterly Nuclear
3. "DE plans to have an initial workforce at the Fermi plant site in 2011...this first phase would occur over 2 years, and would contribute to readying the site for subsequent building of Fermi 3." (v 1, p 4.64) Doesn't subsequent mean following; as in a sure thing?
4. Table 3-2 (v 1, p 3.23) shows 'Examples of Activities Associated with Building Fermi 3 and includes, "Placing fill material into wetlands to bring it to grade with the adjacent land surface." I believe that filling in wetlands is an immoral act; it is not an insignificant thing that, "...only 189 acres would be considered new disturbance." (v 1, p 3.24)
5. Why did DTE submit (July 18, 2011) a "letter of intent to the NRC to file an application in 2014 for renewal of the operating license of Fermi 2" (v 1, p 1.8) when the existing license does not expire for more than a decade?

6. If the US Corps of Engineers has to issue a preconstruction permit because “certain preconstruction’s activities that could affect waters of the U.S., including jurisdictional wetlands, based on an evaluation of probable impacts, including cumulative impacts, on the public interest.” (v 1, p 1.9), why has DE began preconstruction activities before obtaining this permit? (*Quarterly Nuclear Power Deployment Summary*, Oct. 2011) “DTE Energy has begun site preparation for its Fermi Unit 3 reactor next to the existing Unit 2 plant.”
7. Regarding the statement, “Detroit Edison has indicated that new base load electric generating capacity will be needed to compensate for the expected retirement of aging base load generating units and diminishing availability of the Midwest Independent Service Operators region’s base load generation capacity.” (v 1, p 1.9 & p 8.2) So there is no need for the electric now?
8. Concerning the impact of the new transmission lines “over scattered wetlands” that, “Detroit Edison expects that the remaining 10.8 miles, extending to the Milan Substation, would be built within an undeveloped right-of-way...” (v 1, p 2.10) What if the citizens of Whitaker want to keep their “scattered wetlands?”
9. “Transmission lines generate both electric and magnetic fields, referred to collectively as EMFs. Public and worker health can be compromised by acute and chronic exposure to EMFs from power transmission systems, including switching stations (or substations) onsite...” (v 1, p 2.232) Is this true for all forms of electricity transmitted through the lines, or just certain types?
10. “Onsite: approximately 189 acres of habitat would be disturbed, including approximately 34.5 acres of wetlands. Offsite (transmission lines): 1,069 acres of habitat would be disturbed. Approximately 21 acres of additional habitat would be used to expand Milan Substation.” (v 2, p 10.6) Does this include the wetlands planned to be replanted in wild rice?
11. Is there a law requiring companies to notify the dangers of transmission lines across their property. “The National Institute of Environmental Health Science concludes that ELF-EMF (extremely low frequency-electromagnetic field) exposure cannot be recognized as entirely safe because of weak scientific evidence that exposure may pose a leukemia hazard.”( v 1, p 5.102)
12. “Efforts are underway with the help of the native American community, to bring back wild rice as an 1812 bicentennial project. Fermi unit 3 has ample areas suitable for the propagation of wild rice. It would start the process of reintroducing missing species that were once abundant in the Lake Erie marshes.” (v 2, p D.40) “Chapter 324, Sect. 303.01 of the Michigan Natural Resources and Environmental Protection Act identifies Michigan Natural Communities that are considered rare and imperiled. ...At the Fermi site, these communities are found relatively intact...” (v 2, p K.13) And yet, you would allow them to be destroyed.
13. The document states that pollution is kept to a minimum by recharging the waters in the fill and overburden, “recharge of the fill is through precipitation... The overburden is recharged with precipitation...” (v 1, p 2.18) If “annual average rainfall over Lake Erie is about 35 in./yr ... The average annual evaporation from Lake Erie is estimated to be 36 in./yr...” (v 1, p 2.14) How can the precipitation refresh either fill or overburden if evaporation rate exceeds precipitation?
14. I was dismayed to see the chart of Lake Erie water usage: 56,024 million/gallon/per day and power plants drew 50,518 of them! All other uses added up to ten percent of the power plant uses. (v 1, p 2.24) Could that use be connected to the NUREG 2105 prediction, “Recent studies

of the effects of climate change indicate that there could be declines in the overall Lake Erie water levels of 1 to 2 meters.”? (v 1, p 2.25) I think the glut of water going to the power plants might get blamed on climate change.

15. “Fermi 3 operations would result in an average consumptive use of approximately 7.6 billion gallons of Lake Erie water per year.” (v 2, p 10.9) “Unavoidable adverse impacts on aquatic ecology resources would include an increased potential for entrainment, impingement, and thermal loading to Lake Erie...” That is just not acceptable.
16. The document addressed the current water quality concerns regarding Lake Erie, and identified serious water problems. Increased phosphorus loading, which cause toxic algae; elevated concentrations of three bio-accumulative contaminants (dioxin, PCBs, and mercury). “On average, concentrations of mercury in site surface water exceeded the Michigan Department of Environmental Quality Rule 57 for human noncancerous values and wildlife values.” (v 1, p 2.28) Is this termed “cumulative effect?”
17. I was sorry to learn that “Currently Lake Erie waters under Michigan jurisdiction are on the 303(d) list for not supporting fish consumption because of the elevated concentrations of these chemicals in fish tissue.” (v 1, p 2.26)
18. “Based on its analysis, the staff determined that there are no environmentally preferable or obviously superior sites.” (v 2, p iii) A superior site does exist! In the document, the area of Michigan known as “...the Thumb possesses wind resources of sufficient value to support utility-scale wind generation...the Thumb is within the DE service area.” (v 2, p9.50) On the same page, DE admits they could transmit electricity produced there on the existing transmission lines. Thereby saving a lot of wetlands, a lot of flora and fauna, and best of all, Lake Erie. It is such a win-win situation. We opponents would save a lot of time and energy in stopping Fermi 3 and DE can be champions of sustainable energy! Everyone will be happy!
19. The NRC recommends licensing the reactor after “consultation with Federal, State, Tribal, and local agencies.” (v 2, p iii and p 10.2 and 10.31) What tribal governments gave you any feedback on your consultations? “No feedback” does not mean approval.
20. Tritium (which is radioactive for 248 years and can pass from mother to fetus) is showing up in the monitoring wells of Fermi 2. (v 1, p 2.29) “In wells within a 5-mi radius of the Fermi site, elevated concentrations of arsenic about the EPA maximum contaminate level were found in groundwater samples.” and “...detected in the few shallow groundwater wells downwind from the Fermi 2 stack.” (v 1, p 5.117) “Detroit Edison attributed this to the recapture of tritium in precipitation from the plant’s gaseous effluent.” (v 1, p 2.234) To allow a Fermi 3 to be built would be to contribute to our own deaths, and worse, the deaths of our loved ones. Children are more susceptible to radiation than adults.
21. American lotus is growing in the wetlands standing where Fermi 1 is proposed. Why doesn’t the lotus’ status as a State-listed threatened species (v 1, p 2.34) prevent destruction of its habitat? Or the federally listed Indiana Bat, eastern prairie fringed orchid, and Karner blue butterfly (v 1, p 2.49)? Or the songbirds that use the cattails and reeds for nesting? And the list could go on and on.

22. And “all undeveloped area of the Fermi site can be considered habitat for the eastern fox snake.” (State-listed as threatened) (v 1, p 2.52) There was no mention of the eastern massasauga, a federally listed candidate species (v 1, p 2.60) also being present in the area.
23. I recommend briefings given for workers to recognize the difference between these look-a-like snakes. (v 1, p 4.25), “...instructing workers to inform inspectors with stop-work authority to allow time to catch and relocate the snakes.” Relocate them where? In City Parks? “Approximately 51 acres of potential fox snake habitat would be converted permanently to developed uses.” (v 1, p 4.35)
24. Bald eagles nest on the proposed site. The documents states that “Detroit Edison could minimize impacts on wildlife, including restricting the timing of certain construction activities (such as avoiding primary nesting periods for the bald eagle or limiting disturbance of specific habitat types) to periods when migratory species that use those habitats have migrated out of the area.” (v 1, p 4.27) *Could* is the key word. They *could* do a lot of things, as in they could build windmills in the Thumb, which would be much greater protection for all the species in the Lake Erie bio-region.
25. There are over three pages (v 1, p 2.61- p 2.64) of federally and state listed Terrestrial Species that “May Occur within the Transmission Line Corridor. “The corridor crosses about 30 wetlands or other waters that may be regulated by the USACE and/or MDEQ. What is the point of all these lists, if any corporation with the money can get around the laws? Surely these agencies have more righteous intentions than collecting fees for devastating permits?
26. And who knew the Fermi site “lies on the Atlantic flyway, which is one of several major migratory flyways in North America.” (v 1, p 2.41) Fermi 2 is endangering other species as they migrate to and from their homelands. I hope the Audubon Society steps up to the plate on this.
27. DE addressed the issue by saying, “cooling towers (approximately 400 ft. tall) may have a minor, localized impact on birds migrating through the area. Bird collisions are not monitored by DE, but dead birds are occasionally found around the towers....during a one-week period in October 2007, 45 dead birds were found at the Fermi south cooling tower.”( v 1, p 2.43) Please, let the Audubon Society be an international organization!
28. Concerning the overflow and discharge canals, have there been known breaks or cracks in the clay lining that allowed contaminants to seep out? Is this a source of the tritium in the groundwater?
29. “Thirty fish species were captured in the overflow canal during surveys conducted in 2008...twenty-eight fish species were collected in the discharge canal...the central canal is stagnant and has no connections to the overflow or discharge canal...thirteen fish species were collected in the central canal...” (v 1, p 2.66) Are those fish tested for cancerous growth or other physical malformations due to the radiation/chemical exposure? It concerns me that “the south Lagoon, which has extensive aquatic vegetation: fish within that drainage can move freely from the lagoon out into the main body of the lake.”( v 1, p 2.75)
30. Regarding “Fish surveys conducted in portions of Stony Creek located in Monroe County during 1997 indicated the fish community in Stony Creek was dominated by taxa (a word that is not in my 5” thick dictionary) that are tolerant of degraded water quality conditions, although the fish

community was rated as acceptable.” (v 1, p 2.69) Do later surveys reach the same conclusion as this 14-year-old study?

31. The western basin of Lake Erie and “is of the greatest concern with regard to construction and operation of Fermi 3. The western basin receives 95 percent of the water that drains into Lake Erie, including five major river drainages (Maumee River, River Raisin, Huron River, and Detroit River) as well as numerous smaller streams that discharge directly into the western basin.” (v 1, p 2.70) Since Lake Erie borders the U.S. and Canada, the site is already polluting International Waters. Think of the improved relationship with Canada (and the other states that use and enjoy Lake Erie) if a Fermi 3 doesn’t turn Lake Erie into a dead lake.
32. The Port of Monroe provides a point of access for Great Lakes shipping and transport through the Great Lakes-Saint Lawrence Seaway (v 1, p 2.139). In case of a Fermi disaster, would DTE be financially liable for interference with Interstate Commerce?
33. “Consequently, aquatic habitats and organisms in Lake Erie in the vicinity of the Fermi site have the greatest potential for being affected by building and operation of Fermi 3.” (v 1, p 2.69) EPA studies showed the overall condition of Lake Erie’s western basin had continued elevating levels of plankton, “which are important indicators of nutrient pollution.” (v 1, p 2.72) How could the EPA consider issuing another NPDES to add to the chemical pollution?
34. Why was taxpayer’s dollars spent on funding studies of the “Federally and State-listed threatened and endangered unionid mussels for Monroe County...” Although the mussel was “once widely distributed and common in the western basin of Lake Erie, declines in the abundance of unionid mussels have been documented since 1961.” (v 1, p 2.73) The time of the Fermi 1? “Without the presence of healthy fish host populations, unionid mussels are unable to reproduce.” (v 1, p 2.74)
35. In these times of world crisis, few people may care about the disappearance of one species, but in the macro overview, other species are depending on this one. The unionid mussel is a small issue compared to, “The western basin contains important fish spawning and nursery areas and is also important to commercial and recreational fisheries.”(v 1, p 2.75) Doesn’t the current Fermi pollution reports gives standing for commercial fisheries, both international and interstate, to file lawsuits?
36. “Lake Erie supports one of the largest freshwater commercial fisheries in the world, with the majority of commercial fishing occurring along the Canadian border.”(v 1, p 2.82) There are many tribal fishing enterprises on the Canadian side of the lake, and most tribes have dual citizenship in the United States and Canada. Have they no standing as American citizens for tribal fishing rights to have un-poisoned spawning beds for fish?
37. Walpole Island First Nations is located within the affected radius, but “because it is in Canada, the review team did not include it in its environmental justice investigation.” (v 1, p 2.187) Walpole Island First Nations is on unceded lands and is not Canadian or American, but those residents have dual citizenship. Therefore, they should have been included in your scoping process. Since you did not, I believe the NRC must back the whole licensing process up to do so. They are American citizens and have the same rights as the citizens of Monroe.

38. Three federally recognized Indian Tribes with established land claims within Monroe County, “because judicially established land claims are based on proven ancestral or historic ties to lands, these three federally recognized Indian Tribes may also have been prehistorically or historically associated with the Fermi 3 project locations or its surrounding region.” (v 1, p 2.192). How can Fermi 3 be built without their agreement?
39. How were these tribes approached? Were they merely sent massive amounts of documents? Were they told that the coastal marshes of the western Lake Erie are important spring, fall, and winter for waterfowl? And all of our other relations?
40. “On the basis of tornado statistics for the Fermi site vicinity, the review team estimates the probability of a tornado striking the proposed Fermi 3 reactor building to be about 5 in 10,000.” (v 1, p 2.218) Just out of curiosity, why wasn’t that broken down to the lowest fraction, 1 in 2,000?
41. And Fermi 1 is listed as eligible for listing on the National Registry of Historic Places? (v 1, p 2.199 & 2.203) If it becomes listed, will the maintenance/monitoring of all the spent fuel on site (and decommissioning) be done at taxpayers’ expense?
42. I was appalled at Table 2-11, “Estimated Numbers of Fish Eggs and Larva Entrained by the Fermi 2 Cooling Water Intake” in an eight month period! 62,566,649 (v 1, p 2.78) Over 62 million! (v 1, p 5.29) Is that not destroying a lot of people’s livelihoods by depleting fish in their breeding grounds?
43. “It is estimated that approximately 1.7 million bigmouth buffalo eggs and larvae were entrained at the Fermi site during 2008,...approximately 435 million channel catfish eggs and larvae were entrained and 30 individual fish were impinged by the Fermi 2 cooling water intake...2.3 million freshwater drum eggs and larva (& 30 individual freshwater drum were impinged)...30.2 million gizzard shad eggs and larvae (1,200 impinged)...124,000 white perch eggs and larvae (305 individuals impinged)...4.8 million yellow perch eggs and larvae..152,000 largemouth bass eggs and larvae (31 largemouth bass impinged).” What agency deals with international waters that should be notified of this glut?
44. And isn’t the absence of trout in any of the cited fish studies proof that the waters are already polluted?
45. “The intake for Fermi 3 would be adjacent to the existing intake for Fermi 2, which is located between the two groins that project out into Lake Erie.” (v 1, p 3.10) Adding another cooling water intake would suck up double the fish eggs and larvae. The “flow rate at the intake would be 34,264 gallons per minute.” (v 1, p 3.11) It should be criminal to add another intake pipe.
46. Table 2-12, Estimated Numbers of Fish Impinged by the Fermi 2 Cooling Water Intake “...approximately 100,000 to 25 million eggs and larvae of these species (Table 5.6) would be entrained annually at the cooling water intake for Fermi 3 with the intake pumps at full capacity.” (v 1, p 5.41) Fermi 2 sucked in over 62 million in an eight month period, how does DE justify such an expansive Fermi 3 estimate that falls about 40 million short of their admitted studies at Fermi 2?



47. In Appendix D (v 2, p D.23) Kay Cumbow entered a comment about the NRC holding the meetings to encompass both the Thanksgiving holiday and the Christmas holiday. Here again, are meetings and deadlines over the holidays. Is this standard NRC procedure? Or should I say Federal procedure since the USACE sent me a Public Notice on their permit LRE-2008-00443-1-S11 on Christmas Eve. Both comment periods ran over New Year's and Old Christmas on Jan. 6<sup>th</sup>. Even Martin Luther King Day will take place before the USACE's time will elapse. I use the public library for internet, printing, etc. Therefore, having your timeline set when the public library is closed the most possible days seems pretty rude to me.
48. Since Germany and Italy are phasing out all nuclear produced power, and other countries are debating following suit, why is our government promoting nuclear? "Finally, renewable generation technologies are projected to enjoy the largest growth, from 9 percent in 2008 to 17 percent in 2035." (v 2, p 9.6) Here's DE's opportunity to provide jobs building a future for us all with renewable energy. Bill Clinton said on the Jon Stewart show that nuclear was too dangerous, and that solar and wind were the way our country should go.
49. And what was the point of giving 69 lines to fish that were not impinged at Fermi? Or giving 22 pages of descriptions and history of various mussels and other water creatures that are NOT at Fermi? Did they used to be there?
50. "Biological control, especially of zebra mussels, could also be accomplished through thermal shock by raising the temperature for a brief period of time." (v 2, p 9.306) "Public and occupational health can be compromised by activities at the Fermi site that encourage the growth of disease-causing microorganisms (etiologial agents). Thermal discharges from Fermi into the circulation water system and Lake Erie have the potential to increase the growth... These microorganisms could give rise to potentially serious human concerns, particularly at high exposure levels." (v 1, p 2.229)? Sounds like thermal shock to zebras would not be good for all our relations.
51. What is the purpose of giving breakdown charts and descriptions of Ethnic groups in the area? (v 1, p 2.184) Under the Environmental Justice Section (7.4.2), it is stated "There is a potential for minority and low-income populations to experience disproportionately high and adverse impacts from the activities..." (v 1, p 7.30) Does radiation discriminate? Why would we have higher impacts?
52. "The DE employs approximately 1,200 to 1,500 workers for 30 days during every refueling outage..." (v 1, p 2.134) Are these workers allowed to receive a year's dosage of radiation during those 30 days?
53. Table 2.28 (v 1, p 2.136) shows a seven percent (7%) decline in the area work force from 2000 – 2008; and then the SEMOG Report (v 1, p 2.138) refers to a "declining population." How does DE justify their statement "Population will increase 74 percent by 2060" (v 1, p 2.24)?
54. A new reactor would increase the coffers of those sworn to put the health and safety of citizens first (v 1, p 2.148), as well as increased taxes, and more paychecks. "Some impacts, such as the addition of tax revenue from DE for the local economies, are likely to be beneficial to the community." (v 1, p 5.136) So would a wind farm or a photovoltaic facility. Between 2007 and

2010, U.S. coal use dropped 8 percent. During the same period, and despite the recession, 300 new wind farms came online. (World on the Edge by Lester R. Brown)

55. “Climate changes are under way in the United States and globally, ...changes include rising temperatures and sea levels, ...” (v 1, p 2.220) “By the end of the operating license period of Fermi 3 (about 2060) annual average air temperatures are projected to have increased by at least 2-3 degrees Fahrenheit under the lower-emissions scenario and 3-4 degrees under the higher-emissions scenario.” (v 1, p 7.14) The temperature increase could result in increase in precipitation; more intense rainstorms; increased erosion; increased sediment loading in Lake Erie; less dilution would take place with lower lake levels; and the size of the thermal plume would increase. Your agency needs to say, “No action on this application because you’ve done enough damage. It’s time to be Stewards of the Earth, not Destroyers.”
56. “The new meteorological tower will be located about 4,750 ft. south-southeast of the Fermi 3 reactor building...Primary and secondary sensors on the new tower will monitor the same parameters as do those on the existing Fermi 2 tower. The new tower will be operational for at least one and possibly two years prior to decommissioning of the existing tower.” (v 1, p 2.226) Does this mean the decommissioning of the current Fermi 2 tower scheduled before decommissioning of the entire Fermi 2 site?
57. DE submitted their permit application for “to conduct activities that affect waters of the United States, including wetlands” (v 1, p 3.1) on June 17, 2011 with the Michigan Department of Environmental Quality, and on Sept. 9, 2011 to the U.S. Army Corps of Engineers for “activities associated with the proposed Fermi 3 project.” Can those agencies issue permits before the NRC has issued its ruling?
58. “Additional discharges to Lake Erie could include treated liquid radwaste.”( v 1, p 3.14) “The monthly average anticipated water intake from Lake Erie would vary between approximately 23,750 and 33,500 gallons per minute (Table 3.5). ...monthly discharge to Lake Erie (blowdown) would vary between 11,868 and 16,743 gallons per minute.” (v 1, p 3.30) Are there emergency shut off valves to stop the discharge when samples exceed radiation/contamination limits?
59. “The atmosphere would receive heat and water in the form of cooling tower vapor and drift.” (v 1, p 3.31) Can these emissions be stopped when they exceed contamination limits?
60. “Liquid, gaseous, and solid radioactive waste management systems would be used to collect and treat the radioactive materials produced as byproducts of operating Fermi 3 (v 1, p 3.31)...Waste-processing systems would be designed to meet the design objectives...” (v 1, p.3.32). If the systems haven’t been designed yet, shouldn’t the NRC withhold the normal licensing procedure until the systems are invented and manufactured?
61. Considering the Solid Radioactive Waste Management System (v 1, p 3.33), “There are no onsite facilities for permanent disposal of solid wastes, so the packaged wastes would be temporarily stored in the Auxiliary and Radwaste Buildings prior to being shipped to a licensed disposal facility.” And if the facilities do not need an NRC permit to add all the waste they wish (v 1, p. 6.15), what would prevent every nuclear reactor in this country from becoming a nuclear waste dump? Or are we already there?

62. Is there a limit on the heat temperature of waste water released into Lake Erie? “When the Turbine Bypass System is in operation, the temperature of the discharge could reach up to 96 degrees.” (v 1, p 3.35)
63. During planned construction, “Approximately 8.3 acres of wetlands and the 5.2 acres of open water would be permanently lost.” (v 1, p 4.5) Does that mean the building of Fermi 3 would actually fill in 5.2 acres of Lake Erie? What is the precedent for such an action?
64. Concerning the 4.2.1.3. Groundwater, “Groundwater ... would be affected during building activities... include the following: excavation of portions of site aquifers (overburden and Bass Islands Group) and emplacement of the high-conductivity structural fill, filling in of the onsite water bodies, changes in recharge due to impervious surfaces and stormwater routing, and dewatering during excavation. Excavation dewatering would lower the water levels locally...” (v 1, p 4.13) Lower the local water tables? Is that legal as long as one buys a permit?
65. “Water produced during excavation dewatering would likely be discharged to Swan Creek...” (v 1, p 4.13) Poor, pitiful, already polluted Swan Creek.
66. “Detroit Edison states that grouting in the bottom of the excavation could also be used to reduce groundwater inflows into the excavation area.” (v 1, p 4.14) Grout would be used to stop water inflow instead of sealing the bottom to prevent contamination from seeping out?
67. “Dredged sediments would be disposed of in the Spoils Disposal Pond (Figure 4.1) ... Discharge associated with Fermi 3 dredging activities would be regulated under the existing Fermi 2 NPDES permit, which allows 450 million gallons per year (v 1, p 4.19) to be discharged from the pond.” Is that 450 million gallons discharged from only one of the three ponds?
68. “Development of Fermi 3 would encroach into approximately 45 acres or about 7 percent of the Lagoon Beach Unit of the Detroit River International Wildlife Refuge.” (v 1, p 4.39) Too bad about the protected species living there; but how can it be named International if one Michigan company can destroy it?
69. “Temporary or permanent loss of some aquatic habitat in Lake Erie could result from the building of the intake and discharge structures and development of the barge slip for Fermi 3.” (v 1, p 4.45) How cavalier!
70. Thanks for the many pages of flora and fauna not on the proposed Fermi site. It was enlightening. Or were these also species that used to live there?
71. “DE plans to begin the preconstruction work specific to Fermi 3 in 213 and to complete all construction activities in 2020.” (v 1, p 4.64) I submit Fermi Winds as an alternative to the name Fermi 3.
72. “...the EPA announced on Dec. 7, 2009 that GHGs threaten the public health and welfare of the American people...” (v 2, p 9.20) “...emissions for Fermi 3 equate to about 313,000 tons over 7 years... This also amounts to a small percentage of projected Green House Gas emissions for Michigan and the United States.” (v 1, p 4.103) What is the total amount of GHG emissions a single reactor is allowed to send into the atmosphere per year?

73. “DE identified four sources of direct radiation exposure from the Fermi site: (1) ‘skyshine’ from the nitrogen-16 source present in the operating Fermi 2 main turbine stream cycle, (2) condensate storage tanks, (3) the onsite low-level waste storage facility, and (4) the planned Independent Spent Fuel Storage Installation. The doses from skyshine and the planned ISFSI are identified as the primary sources of direct radiation exposure to the proposed Fermi 3 construction workers.” (v 1, p 4.114) So, the Fermi 3 construction workers would get irradiated from Fermi 2?
74. “The public and biota would be exposed to increased ambient background radiation from Fermi 3 via the liquid effluent, gaseous effluent, and direct radiation pathways.” (v 1, p 5.105) How does gaseous effluent differ from skyshine?
75. “...DE considered the following exposure pathways in evaluating the dose to the maximally exposed individual (MEI): ingestion of aquatic food (i.e., fish and invertebrates); ingestion of drinking water; ingestion of meats, vegetables, and milk (using irrigation water contaminated by liquid effluent); and direct radiation exposure from shoreline activities, swimming, and boating.” (v 1, p 5.105) Sounds like anyone living in the affected area is doomed.
76. “The maximally exposed organ is the bone of a child, and the majority of the dose is from fish ingestion.” (v 1, p 5.109)
77. Regarding Thermal Impacts. “Potential thermal impacts on aquatic organisms could include heat stress, cold shock, and the creation of favorable conditions for invasive species.” (v 1, p 5.33) Besides the invasive mussels and toxic plankton, what other invasive species does the “thermal pollution” (v 1, p 5.34) attract?
78. “Operation of the proposed Fermi 3 would result in a thermal discharge to Lake Erie. Such discharges have the potential to increase the growth of etiological agents, both in the circulating water system and the lake. ...These microorganisms could result in potentially serious human health concerns, particularly at high exposure levels.” (v 1, p 5.98) Is meningitis one of those water health concerns?
79. Why does the section dealing with Federally-Listed Aquatic Species deal only that occurs in Monroe, Wayne, and Washtenaw Counties, and not in the bordering Ohio counties? (v 1, p 5.43)
80. “The review team has estimated the Fermi 3 for Potential to Emit (Greenhouse Gases) to be about 116 tons/yr, which exceeds the major source threshold. To avoid being a major source, Fermi 2 and Fermi 3 would need to limit their combined PTE to be eligible as a ‘synthetic minor’ (or ‘opt-out’) source” (v 1, p 5.95) How would combining their emissions bring them under the 100 tons/yr limit?
81. “Operation of Fermi 3 will cause physical impacts, including noise, odors, exhausts, thermal emissions, and visual intrusions.” (v 1, p 5.54) So the proposed Fermi 3 doesn’t have any benefits besides economic?
82. “DE estimated the collective total body dose within a 50-mile radius of the Fermi 3 site to be 14.9 person-rem from liquid effluents and 6.7 person-rem/yr from gaseous effluents.” (v 1, p 5.112) Is that calculations based on an average assuming people closer to the reactor get a larger dose and farther away get less?

83. “Radiation protection experts conservatively assume that any amount of radiation may pose some risk of causing cancer or a severe hereditary effect and that the risk is higher for higher radiation exposures.” Why was this sentence used more than once in the document? (v 1, p 5.112 & 5.122, & 6.12, & 6.23, etc) Surely it wasn’t to encourage the idea that low level radiation is not as dangerous as high level.
84. “DE stated that the mixed waste that cannot be treated onsite will be temporarily stored at a remote monitored structure until it is shipped for offsite disposal at an approved facility.” (v 1, p 5.120) Where is DE now shipping Fermi 2’s mixed waste?
85. “Three types of severe accident consequences were assessed in the MACCS2 (accident code system): human health, economic costs, and land area affected by contamination.” (v 1, p 5.126) In case of accident, economic costs are considered before damage to the earth? Are the “environmental risks” listed in Table 5.32 (v 1, p 5.128) some scientist’s death wish?
86. Concerning the “Comparison of Environmental Risks...” (v 1, p 5.129), how were these other five reactors chosen?
87. Will someone explain why comparing risks at other facilities was important and yet, “Environmental consequences of potential surface-water pathways related to swimming and shoreline activities and aquatic food consumptions are not evaluated by MACCS2.” (v 1, p 5.132)
88. “If a severe accident occurred at a reactor located at the Fermi site, it is likely that Federal, State, and local officials would take various measures, including limiting access to contaminated areas and interdiction of drinking water and fishing to reduce exposures.” (v 1, p 5.133) Does that mean they would tell people they couldn’t go home? And fisherman to stay out the water?
89. “...NRC staff considered two fuel cycle options that differed in the treatment of spent fuel removed from a reactor. The ‘no-recycle’ option treats all spent fuel as waste to be stored at a Federal waste repository, whereas the ‘uranium-only recycle’ option involves reprocessing spent fuel to recover unused uranium and return it to the system. (p 6.2)” Which has DE proposed to use at Fermi 3?
90. “After onsite storage for sufficient time to allow for short-lived fission product decay and to reduce the heat generation rate, the fuel assemblies would be transferred to a waste repository for internment.” (v 1, p 6.5) Where is the Federal waste repository? Where is the waste from the Manhattan Project?
91. “...and the stagnation of the nuclear power industry in the United States...” (v 1, p 6.2) Ah, I love that phrase!
92. “DE can currently ship Class A low level waste (LLW) to the Energy Solutions site in Clive, Utah; however it cannot dispose of Class B and C LLW at the Energy Solutions site in Barnwell, South Carolina. (v 1, p 6.14) That statement says DE “can” ship Class A LLW to Clive, but does it currently ship Fermi 2 waste there?

93. "Michigan is not currently affiliated with any compact. Other disposal sites may also be available by the time Fermi 3 could become operational." (v 1, p 6.14) Isn't it true that the original waste from the Manhattan Project is still waiting for disposal?
94. "DE has proposed a Solid Waste Management System for Fermi 3 that provides enough storage space to hold the total combined volume of 3 months of packaged Class A and 10 years of packaged Class B and Class C LLW generated during plant operations." (v 1, p 6.14 ) Is three months of Class A equal in volume to ten years of Class B & C waste?
95. "Current national policy ...mandates that high-level and transuranic wastes be buried at a deep geologic repository, such as the proposed repository at Yucca Mountain, Nevada." (v 1, p 6.15) Didn't Congress permanently reject Yucca Mountain as a repository?
96. "Fuel for the plants would be enriched up to about 4.6 weight percent uranium-235, which exceeds the 10 Code of Federal Regulations 51.52(a) condition. In addition, the expected irradiation level of about 46,000 MWd/MTU exceeds the 10 CFR 51.52(a)." (v 1, p 6.19) Are we to understand that the NRC said DE can exceed the legal limits as long as they explain? And will they be able to kick it up to 8 percent, IF they explain?
97. "Unirradiated fuel is shipped to the reactor by truck; irradiated (spent) fuel is shipped from the reactor by truck, rail, or barge; and radioactive waste other than irradiated fuel is shipped from the reactor by truck or rail." (v 1, p 6.19) Are communities along the route notified of the shipments?
98. "Impacts from these shipments would be from the low levels of radiation that penetrate the unirradiated fuel shipping containers. Radiation exposures at some level would occur to the following individuals: (1) persons residing along the transportation corridors between the fuel fabrication facility and the Fermi site; (2) persons in vehicles traveling on the same route as an unirradiated fuel shipment; (3) persons at vehicle stops for refueling, rest and vehicle inspections; and (4) transportation crew workers." (v 1, p 6.20) Who knew we could get zapped passing a truck hauling unirradiated fuel?
99. "The Individual Stuck in Traffic... for one hour at a distance of 4 feet...Person at a Truck Service Station.....would be exposed for 49 minutes at a distance of 52 ft from the loaded shipping container." (v 1, p 6.26) Who else could be exposed?
100. "Truck crew members would receive the highest radiation doses ...NRC staff's analysis assumed that crew member doses are limited to 2 rem/yr..." (v 1, p 6.24) Shouldn't the NRC be more definite than merely assuming that will be the limit?
101. "Future shipping casks would be designed to transport longer-cooled fuel (more than 5 years out of reactor) and would require much less shielding to meet external dose limitations." (v 1, p 6.28) Isn't it more likely that regulations will be weakened to require less shielding? Or some "stakeholder" will merely need to explain.
102. "...shipments of fuel and waste to the Davis-Besse site may also contribute to the cumulative radiological impacts of transportation as a result of sharing some highway links with Fermi 2 shipments." (v 1, p 7.44) Why would shipments of waste go to the Davis-Besse reactor?

103. Regarding the “Table 6-10. Radionuclide Inventories Used in Transportation Accident Risk Calculations...” (v 1, p 6.36) “Radionuclide inventories are important parameters in the calculation of accident risks.” (v 1, p 6.35 ) Are not all those Radionuclides mentioned also known as “Daughter Products” of the radioactive decay chain?
104. “Cumulative Impacts can result from individually minor, but collectively significant, actions taking place over a period of time... The review team considered, among other actions, the cumulative effects of Fermi 3 with current operations of Fermi Unit 2 on the Fermi site.” (v 1, p 7.1) I am glad you established the three significance levels as Small, Moderate, and Large. That is easier to understand than the phosphorus classifications of oligotrophic (low), mesotrophic (moderate), and eutrophic (high). (v 1, p 2.72)
105. “The review team concluded the cumulative impacts on surface water quality would be Moderate.” (v 1, p 7.15) At least they had enough conscience not to classify the degradation as Low.
106. Am I to understand that in Historic and Cultural Resources (v 1, p7.31) the impacts were rated as moderate because Fermi 1 has to be decommissioned instead of left as a historical building?
107. “The cumulative effects of past, present, and reasonably foreseeable future actions combined with the predicted impacts of climate change on the quality of surface water in Lake Erie would be Moderate.” (v 1, p7.47) In the Table 7.3 (v 1, p 7.46) on Cumulative Impacts of the Proposed Fermi 3, all classifications got a small to moderate rating, except Economic Impacts . That got a Small to Large rating. Why an across the board rating? Why not just say, “It is a Jobs vs. the Environment Issue.”
108. If Michigan’s use of electricity was “down 2.4 percent” in 2008, and down 3.6 percent from 2007, (v 1, p 8.3) doesn’t that show that there is no need for Fermi 3 produced electricity?
109. I request the NRC to take, “The no-action alternative would result in the proposed facility not being built, and the predicted environmental impacts from the project would not occur.” (v 2, p 9.3) That would greatly encourage the DE wind farm in the Thumb.
110. I believe DE can obtain the energy needed to replace electricity for the power producing units scheduled to be retired by the year 2024 (v 1, p 8.22) wind power. Or by one of the four alternatives listed in the NUREG, 1/purchase the power from other suppliers; 2/reactivate retired power plants; 3/extend the operating life of existing power plants; 4/implement conservation. (v 2, p 9.3, 9.4)
111. Finally, I request the information that David Lochbaum, Union of Concerned Scientists, made in his Demand for Information regarding the boiling water reactor licensees with Mark 1 and Mark 11 containment designs, of which Fermi 2 is and Fermi 3 is proposed.
112. And I would also like a copy of the NRC’s Lessons Learned report from the Fukushima disasters.

Sincerely,

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