investment of time, work and resources wasted when DTE announces it has decided to cancel its ESBWR proposal.

For the reasons laid out above, and on behalf of our members in Michigan and Ohio, I request a 120 day extension to the environmental scoping deadline for public comments on Fermi 3. This would make much more possible meaningful public involvement by a much larger number of concerned citizens and environmental organizations. (**0057-2** [Kamps, Kevin])

Comment: The other problem I see, and I've provided a letter to the Nuclear Regulatory Commission today, is this problem of the economically simplified boiling water reactor design. The problem with it is that it doesn't exist. It has to undergo a formal rulemaking, which is just barely gotten off the ground, which is not anticipated to be completed before 2011, and yet you're being asked to comment on a boiling water reactor design that will be different in some major respects from existing reactor designs, that is not proven, that is not economically going to be sanctioned for taxpayer underwriting by the Department of Energy at any point in the near future; that in effect will not be finalized or certified, if indeed it is -- I understand the NRC staff has asked many, many dozens of very complex and intelligent questions. But it's a design that won't exist yet by March 9th, 2009. Public organizations and people who want to have a trial, contenting that there are problems with the idea of putting up a Fermi 3, have to have identified their experts, have to of identified their information and evidence to combat a design that they don't know for sure will be the ultimate design.

In this proceeding by early February, you are being asked to talk about environmental considerations for design that is neither approved nor is final. Without a fixed, certified, ESBWR design, public commentors in this ongoing NEPA proceeding, and the adjudicatory proceeding, of which it will ultimately be a part, can't meaningfully comment concerning operational prospects and associated environmental effects, accident scenarios, and the fallout, if you will, from those. Nor can they be afforded an understanding of the ongoing routine radiation emissions that come from all operating nuclear power plants. (**0058-117** [Lodge, Terry])

Comment: The public faces these deadlines to comment in this NEPA proceeding and to decide whether or not and how to join the issues by March 9th in the adjudicatory proceeding without knowing with any certainty even whether it will be an ESBWR. Any licensing efforts that are conducted by the NRC will, as a result, be riddled with doubts and conditions which will of course heighten the growing perception that the fix is in and that this process is, unfortunately, merely bread and circuses. (**0058-118** [Lodge, Terry])

Comment: this is all premature because we are asked to be making comment on a reactor design which does not exist. Recently there have been several revelations. There were six -- there were five utilities which chose to go with the economically simplified boiling water reactor. Five of those utilities have canceled those projects.

General Electric's Hitachi's Economic Simplified Boiling Water Reactor Design, proposed by DTE to be built as a new Fermi 3 reactor, has not even been completed, let alone certified by the U.S. NRC. The ESBWR has suffered many recent setbacks calling into serious question its viability.

November 24th, Exelon, the largest nuclear utility in the nation, canceled their facilities in Texas. Just this past Friday, Entergy and Dominion canceled the ESBWR as well. That leaves Detroit Edison standing alone as the only utility embracing this uncompleted design, which is not scheduled for review until mid 2011. So we are asked to be making comment, environmental comment, on a facility that doesn't even exist and has not been tested. So we need to go back to square one. This whole EIS scoping meeting is invalid because we do not have a valid reactor design which to challenge, which to address.

The ESBWR design has over 200 requests for additional information. There are many many unresolved problems. For Detroit Edison to pursue this utility, this design, they are putting the ratepayers and the taxpayers in great jeopardy. This is a design that is not going to come to fruition. Detroit Edison needs to come clean with it. What this meeting amounts to is a bait and switch. They will be aborting this design and choosing another, so this is all premature. (**0058-62** [Keegan, Michael])

Comment: I say no to Fermi 3 because recent news confirmed that this type of reactor, the ESBWR, has yet to be completed, making today's NRC hearing premature. This of course I am reiterating a point by a couple of people who spoke before me. The viability of this type of reactor is seriously in doubt. Out of the six such reactors that had been proposed to be built by different utilities in different states, five have been canceled, and only one, DTE, is proposing to build and its plans are left standing. Obviously there are serious doubts about the worthiness and viability of this design.

In fairness to the public and ratepayers, DTE should withdraw its application and NRC should suspend this proceeding until the ESBWR design has been certified, which will be no earlier than 2011, if ever.

That is the path chosen by the second largest nuclear generator in the US, Entergy, which on January 9 was the third utility to announce the cancellation of its ESBWR reactor proposal at each of two sites previously chosen. The truth seems to be that there are no nuclear reactors ready to install right now. (**0058-87** [Fischer, Lydia])

Comment: The other is the fact that that application that we've put in has chosen the ESBWR. It's one that like the other applications throughout the country, are looking to have their designs approved by the NRC. We are as well. And that's in flight. We won't get the license as we just heard, until after those designs are approved. (**0058-9** [May, Ron])

Comment: The Michigan Chapter of the Sierra Club, Beyond Nuclear, Citizens for Alternatives to Chemical Contamination, Citizens Resistance at Fermi 2, Coalition for a Nuclear-Free Great Lakes, Don't Waste Michigan, and Toledo Coalition for Safe Energy, along with several individual residents in the Monroe, Michigan area respectfully request that the U.S. Nuclear Regulatory Commission immediately suspends the current proceedings aimed and review and ultimately, approval of DTE Energy Company's combined construction and operating license application ("COLA") for Fermi 3, a proposed new nuclear power plant near Monroe, Michigan.

These public organizations and citizens make this request to suspend the COLA adjudication for Fermi 3 pending the commencement and completion of the design certification rulemaking proceeding or the proposed Economically Simplified Boiling Water Reactor ("ESBW") design on which DTE's COLA depends. We ask that the Commission repudiate a recent policy statement that would unlawfully remove the COLA's design-related contents from the scope of issues that may be challenged in the COLA adjudication and refer those issues to be resolved in a separate, parallel rulemaking proceeding to our knowledge has not been scheduled or commenced, the Policy Statement on the Conduct of New Reactor Licensing Proceedings, 72 Fed. Reg. 20 963 (April 17, 2008) (2008 Policy Statement). The 2008 Policy Statement - which is not enforceable law or regulation -should be ignored because it violates Section 189a of the Atomic Energy Act ("AEA"), as well as judicial precedents interpreting the AEA, and the NRC s Part 52 regulations for the conduct of licensing proceedings on COLAs. Pacific Gas & Electric Co. v. FPC, S06 F. 2d 33, 38-39 (D.C. C r . 1974) (when an agency applies a policy in a particular situation, it must be prepared to support the policy just as if the policy state lent had never been issued). The Commission should further reconsider and revoke a recent... (**0082-37** [Lodge, Terry])

Comment: General Electric-Hitachi's so-called Economic Simplified Boiling Water Reactor (ESBWR) design, proposed by DTE to be built as the new Fermi 3 reactor, has not even been completed, let alone certified by the U.S. Nuclear Regulatory Commission. The ESBWR has suffered many recent setbacks, calling into serious question its viability.

On November 23, 2008 there were six ESBWRs proposed to be built across the country: one by Dominion Nuclear at North Anna, Virginia; others by Entergy Nuclear at Grand Gulf, Mississippi and River Bend, Louisiana; two more by Exelon Nuclear at Victoria County Station, Texas; and the sixth by DTE at Fermi nuclear power plant near Monroe, Michigan.

However, on November 24th the ESBWR dominoes began to fall. That's when Exelon announced it would abandon the ESBWR design for its proposed two new reactors at Victoria County Station, Texas

Texans for a Sound Energy Policy had objected to NRC allowing an ESBWR licensing proceeding to continue, given the incomplete status of the design. In fact, they argued that the

continuation of the licensing proceeding would violate federal laws and NRC regulations. Such pressure contributed to the nuclear utility, Exelon, the largest in the U.S., announcing that it was no longer considering the ESBWR design for its Victoria County Station, Texas twin reactor project. Exelon notified NRC it would seek another reactor design, stating technologies other than the ESBWR provide the project greater commercial and schedule certainty...As a result, Exelon is considering reactor technologies that have more mature designs, more certain cost structures and better availability of information than the ESBWR."

January 9, 2009 marked Black Friday for the ESBWR design. Entergy, the second-largest nuclear generator in the United States, announced cancellation of its ESBWR new reactor proposals at both Grand Gulf, Mississippi and River Bend, Louisiana. An Entergy press release reported:

The company asked the Nuclear Regulatory Commission on Friday to suspend reviews specific to GE Hitachi's Economic Simplified Boiling Water Reactor after unsuccessful attempts to come to mutually acceptable business terms with GEH [General Electric-Hitachi]. Entergy Nuclear also will temporarily defer environmental reviews related to the construction and operating license applications for potential projects at its nuclear sites at Grand Gulf, near Port Gibson, Miss., and River Bend, near St. Francisville, La. Paul Hinnenkamp, vice president of Entergy Nuclear's business development function, said ... this action simply reflects the fact that we have not been able to come to mutually agreeable terms and conditions with GEH for the potential deployment of an ESBWR."

Later that same day, Reuters reported that Dominion Resources Inc. had likewise been unable to reach an agreement with GE Hitachi to pursue development of a new nuclear plant in Virginia.... Reuters went on: [Spokesman]. Jim Norvelle said Dominion has decided to open a competitive bidding process to select a new engineering, procurement and construction partner for a proposed single new reactor at the North Anna nuclear station in Virginia. While Exelon, Entergy, and Dominion have pledged to continue pursuing new reactors at these same sites, they have made clear that they would not be ESBWRs. (**0084-2** [Kamps & Keegan, Kevin and Michael])

Response: *10 CFR 52.55(c) allows a COL applicant, at its own risk, to reference a design that is under review by NRC but not yet certified. The Economic Simplified Boiling Water Reactor (ESBWR) design is one such design currently under review. However, a COL cannot be issued by NRC until the reactor design is certified by NRC. Applicants select a reactor technology based on their own business criteria. If the ESBWR does not receive certification, then Detroit Edison Company (Detroit Edison) would have to determine whether it would proceed with a different reactor technology. A change in the reactor technology would need to be considered by NRC to determine whether the change would be significant in terms of the environmental impacts of construction or operation.*

Comment: I have a complaint about the documents. I've got an old type phone-in type computer that operates on the phone line, called phone modem, and it takes a long time to download documents. And to take up space and time at a library to download some of this stuff, you know, is asking a lot. And so I haven't read the Environmental Review by the company. So some of the things I may say may not be pertinent. But I would appreciate if hard copy documents could be available in more locations. Perhaps -- there's a reference library at the University of Michigan-Dearborn, there's one at the Centennial Library in Dearborn, Detroit Library I'm sure has one, probably Toledo also. That would be helpful. (**0058-105** [McArdle, Ed])

Comment: I understand that at this time DTE/Detroit Edison and NRC documentation regarding the Fermi 3 project is available for public review at only the main branch (Ellis Branch) of the Monroe County Library. Fermi 2 is in Frenchtown Charter Township and I understand that the DTE/Detroit Edison proposal is to build Fermi 3 next to Fermi 2. The main branch of the Monroe County Library is not in Frenchtown Charter Township. However three other branches of that library are. Could you add those three other branches and the Frenchtown Township government center to the list of locations where Fermi 3 environmental review and other documentation will be available for review? (**0083-26** [Kaufman, Hedi])

Response: *Detroit Edison's ER is available for public inspection at the NRC Public Document Room in Rockville, Maryland. The ER is also available electronically through NRC's ADAMS Web site at http://www.nrc.gov/reading-rm/adams.htmland at http://www.nrc.gov/reactors/new-reactors/col/fermi.html. The Public Document Room can also be contacted at http://www.nrc.gov/reading-rm/pdr/copy-service.html to request a paper copy or CD/DVD of the document for a fee. NRC also wanted to ensure that there was an opportunity for meaningful public participation in the environmental review for such circumstances where electronic access could be difficult; consequently, the NRC staff is providing local access to Detroit Edison's ER and certain other documents at the Ellis Reference & Information Center of the Monroe County Library System in Monroe, Michigan. The NRC staff believes that these options offer reasonable opportunities for public access.*

Comment: As far as a reactor design, the criticism of a license for that reactor vessel, it's an upscale of what already exists. It's just adding more fuel bundles in a larger diameter vessel, so not very much to think about. (**0058-132** [Meyer, Richard])

Response: *The comment refers to characteristics of the ESBWR design. It provides no new information relevant to the environmental review and will not be considered further.*

D.1.2 Comments Concerning Process – NEPA

Comment: For all actions significantly affecting the quality of the human environment, the federal agency must provide a detailed statement on the environmental impact of the proposed action, alternatives to the proposed actions, and any irreversible and irretrievable commitments

of resources that would occur with implementation of the action. 42 U.S.C. 4332(2)(C). The Environmental Impact Statement must contain a full and fair discussion of significant environmental impacts that is supported by evidence that the agency has made the necessary environmental analyses. 40 C.F.R. 1502.1. The discussion must include an analysis of the direct, indirect, and likely cumulative impacts of the proposed action. See 40 C.F.R. 1508.7, 1508.8, 1508.25. Federal agencies also must analyze and discuss significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. 40 C.F.R.1502.9(c). To satisfy NEPA, the NRC 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 (10th Cir. 1997).

NEPA's twin objectives are to ensure that the federal agency consider[s] every significant aspect of the environmental impact of a proposed action and to inform the public that it has indeed considered environmental concerns in its decision-making process. Earth Island Inst. v. U.S. Forest Serv., 442 F.3d 1147, 1153-54 (9th Cir. 2006); Baltimore Gas & Elec. Co. v. Natural Res. Def. Council, 462 U.S. 87, 97 (1983). See also 40 C.F.R. 1500.1(b), (c). Thus, NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken [emphasis supplied]... Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA. Id. 1500.1(b).

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). In Foundation on Economic Trends v. Heckler, 756 F.2d 143 (D.C. Cir. 1985), the D.C. Circuit Court of Appeals characterized NEPA litigation as the critical juncture in judicial enforcement of the hard look doctrine, to ensure that the agency has adequately considered and disclosed the environmental impacts of its actions and that its decision is not arbitrary or capricious. Id. at 151. The purpose of NEPA is to ensure that agencies do not make uninformed - as opposed to unwise - decisions. Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 348 (1989). (**0045-2** [Lodge, Terry])

Response: *The comment relates to the requirements set forth in NEPA for preparing an EIS. Section 102 of NEPA directs that an EIS be prepared for major Federal actions that have the potential to significantly affect the quality of the human environment. NRC has implemented Section 102 of NEPA in 10 CFR Part 51. Further, in 10 CFR 51.20, the Commission has determined that the issuance of a COL under 10 CFR Part 52 is an action that requires an EIS. The comment is consistent with NRC policy and practice, but it provides no specific information*

related to the proposed licensing action for the Fermi 3 nuclear plant, and will not be considered in developing the EIS.

Comment: The scoping for the draft EIS should include a thorough review of all environmental and safety implications to Essex County, Ontario, Canada including the City of Windsor. The following entities shall be invited to participate in the scoping process:

The City of Windsor and other municipalities bordering the Detroit River and Lake Erie;

The County of Essex;

The Ontario Ministry of the Environment; and

Environment Canada.

Further notifications shall be direct to:
City Clerk's Office
City of Windsor
350 City Hall Square, Rm 201
Windsor, Ontario Canada
N9A 6S1 (**0049-1** [Richters, Karina])

Response: *The environmental impacts in Canada from the construction or operation of the proposed Fermi 3 nuclear plant will be considered as appropriate. Public notices of the scoping process were provided in a* Federal Register *(FR) Notice of Intent to conduct scoping (73 FR 75142), advertisements in U.S. and Canadian newspapers, and a press release.*

Comment: Due to the timing of the past meeting, in the dead of winter, the federal Nuclear Regulatory Commission should extend the deadline for accepting comments on the scope of the planned federal environmental review of the proposal for at least 90 days and hold another hearing in the spring when the weather would be better and provide a better input by the community at large. (**0011-1** [Stock, Ed & Kim])

Comment: If the NRC does not suspend review of the Environmental Report (the scoping process for the EIS), then I call for an extension of the comment period for 120 days. The NRC scheduled a short comment period for 1771 pages - actually much greater than that with referenced materials - and over the Christmas/New Year's holiday when citizens have hefty civic and family responsibilities. The official notice of the only public meetings was made on Christmas Eve. The only public meetings were held in bitter winter weather with snow-covered roads and black ice that made travel treacherous. There were days that documents could not be accessed from the NRC's website, by the NRC's own admission, and those with dial-up

computers could not download larger documents. Another public meeting should be scheduled to take the place of the ones that occurred in treacherous weather. (**0051-2** [Cumbow, Kay])

Comment: On behalf of our members in Michigan and Ohio, I am writing to request a 120 day extension to the current Feb. 9, 2009 deadline for public comment on the environmental scoping for the proposed Fermi 3 reactor near Monroe, Michigan. I also request that NRC hold another public meeting, like the one held on Jan. 14th at Monroe County Community College, only this time in the spring, when the weather is more conducive to a large public turn out.

Ever since the Fermi 3 licensing proceeding was first announced in early December, 2008 in the Federal Register, I have had repeated problems utilizing NRC's website and ADAMS system to access relevant documents due to the NRC system's dysfunctionality. Such problems were especially bad during the holiday season between Christmas and New Year's, when preparations for the Jan. 14th meeting were urgently needed to be undertaken. Given the immense size of the documentation -- nearly 2,000 pages for the Environmental Report alone, and around 17,000 pages for the overall Combined Construction and Operating License Application (COLA) -- it is eminently reasonable for NRC to grant a 120 day extension to the current deadline. This is the only way for ordinary citizens concerned about the Fermi 3 proposal to read and analyze such incredibly long and technical documents, and seek expert assistance in their analysis and in the preparation of comments to NRC in response.

NRC's publication of the press release announcing the Jan. 14th public meeting late in the afternoon on Christmas Eve also served to significantly lower public involvement. In fact, the press release was obscured by the fact that it was not posted on the NRC's homepage, but only in its press release archives, even on the initial day of its publication.

This poor public notification was compounded by the extreme winter weather that occurred on Jan. 14th. NRC should have realized that holding a public meeting on Jan. 14 in southeast Michigan on the Great Lakes shore ran a high risk of experiencing severe winter weather that would dramatically lower public turn out. The blowing and drifting snow, and extreme cold, deterred a significant number of persons from venturing forth to the meeting on Jan. 14th. An entire carpool of concerned citizens from Ann Arbor, who oppose the Fermi 3 reactor, phoned to inform me that the extreme winter weather would make it impossible for them to attend either of the day's sessions. The impacts and risk of this extreme cold was made all the more clear by the dead car battery experienced by NRC's Gregory Hatchett that day. The extreme cold was near record breaking, and The Weather Channel on cable television, and other authorities, were explicitly urging vulnerable persons -- such as the elderly -- to remain indoors and not risk outdoor travel given the hazardous road conditions. All of this dramatically reduced what would have been a much larger turn out at the public meeting. By way of comparison, a much larger crowd of participants from the public attended the NRC introductory meeting last August 20th, 2008 at the same location. However, that event was not an official NRC meeting for the

acceptance of official public comment into the NEPA record. For these reasons, I request a hearing during more reasonable weather conditions, such as in May or June. This would be made possible by a 120 day extension to the comment period. (**0057-1** [Kamps, Kevin])

Comment: I first want to say that this is being done way too hastily, and that we had 1,771 pages to review over the Christmas and New Year's holiday. And that's when people have a lot of other family and community obligations. This room should be packed, and one reason it isn't is because of those holiday considerations. This is also one of the coldest weeks in the year. And, that happens in January. (**0058-20** [Cumbow, Kay])

Comment: I want to go on record as stating this whole process is premature. I object to being publicly notified on Christmas Eve that there would be a meeting; and I object to the meeting being held in the middle of a Michigan winter, when the probability of people attending this proceeding, this hearing, would likely be diminished. So I am requesting an extension of the comment period for an additional 90 days; and I am requesting that another meeting of this type be held in the spring, when people can come out and they don't have to brave the coldest night of the year, last night, and the weather condition. So I object to this entire process. (**0058-61** [Keegan, Michael])

Comment: And again, one wonders about the timing of these hearings. (**0058-88** [Fischer, Lydia])

Comment: I must say I'm presenting under protest, in that the notification, the public notification occurred on Christmas Eve and the meeting was scheduled in the heart of a Michigan winter, and as you can see the weather is quite inclement. If you were to schedule a meeting where you didn't want the public to be participating, it would be January 14th, in the middle of blizzards and record cold temperatures. (**0059-62** [Keegan, Michael])

Comment: I request an extension of the public comment deadline, 30 days beyond Feb. 9. (**0083-29** [Kaufman, Hedi])

Response: *More than one month prior to receipt of the Fermi 3 COL application, NRC conducted a Public Outreach Meeting in the site vicinity to heighten public awareness of the NRC process for conducting licensing reviews under 10 CFR Part 52. At that meeting, the NRC staff discussed both the safety and environmental reviews that would be conducted. Public involvement and comments are invited and encouraged throughout the environmental review of a project, and NRC formally solicits both written and oral comments from members of the public at two different times during the review.*

The scoping process is the public's first opportunity for comment, and is conducted to define the proposed action, determine the scope of the environmental impact statement, and identify significant issues to be analyzed. NRC conducted scoping meetings near the proposed site to

facilitate public participation. NRC published the Federal Register notice that informed the public of the times and locations. As outlined at the Public Outreach Meeting, the dates of public scoping meetings were contingent upon when the application was submitted to NRC and the resulting environmental review schedule. NRC also published meeting notices in newspapers in communities near the plant and posted a notice of the meeting on the NRC's website for the project. The website provides addresses for written comments to be submitted in person, by mail, or electronically. The deadline for comments is usually 60 days following the publication in the Federal Register *of the Notice of Intent to conduct scoping.*

The public's second opportunity to comment will occur after the draft EIS is published. NRC will file the draft EIS with the U.S. Environmental Protection Agency (EPA), and the EPA will issue a Notice of Filing in the Federal Register *to formalize the start of the public comment period. The NRC staff places a Notice of Availability in the* Federal Register *and on the NRC website indicating that the draft EIS has been issued, with instructions for the public and other interested parties on how to obtain copies. Those persons already on the mailing list will receive copies of the NRC notice and the draft EIS without further action. The draft EIS will also be available on the NRC website. The notice will request comments on the draft EIS and will provide addresses for delivering or sending the comments to NRC. Usually, a 75-day period is allotted for the public's review and the receipt of comments. During the public comment period, the NRC staff will hold a second set of public meetings in the vicinity of the proposed site to present the results of the draft EIS to the public and to obtain comments, both oral and written, from the public.*

Comment: When do you sponsor open direct public discussion-debates with these experts, rather than the biased, staged dog-and-pony shows which few concerned public citizens attend, partly because of distrust via past experiences, partly because advance notice of such meetings is inadequate, limited and never visibly itemized at the meetings. (**0004-7** [Carey, Corinne])

Response: *It is the policy of NRC to involve the public in the Commission's decision making process; therefore, NRC elects to conduct open public scoping meetings in association with its environmental review process. Meetings are generally held in a location accessible by the largest population that will experience the most direct environmental impact as a result of the proposed action. In the case of the proposed Fermi 3 nuclear plant, this population is located in the area of Monroe County, Michigan. The scoping period was open for 60 days, and during that time, the public and other agencies were welcome to provide verbal comments at scoping meetings or to submit written comments. NRC will hold additional public meetings after the draft EIS is published. Separate meetings will be held by NRC in association with the safety review process.*

Comment: However, the IJC does have additional responsibilities under the Canada-U.S. Great Lakes Water Quality Agreement and is pleased, therefore, that your environmental

assessment will consider the potential impact of the proposed plan on water quality, aquatic biota and their habitat, or other environmental resources. (**0015-1** [Lawson, Ph.D., Charles])

Comment: U.S. Environmental Protection Agency (EPA) staff members were pleased to be a part of the Fermi 3 site audit visit in early February. We have a better understanding of the topics the Nuclear Regulatory Commission (NRC) will cover in its Environmental Impact Statement (EIS) for this project, a new reactor unit associated with the existing Fermi Nuclear Power Plant in Monroe County, Michigan. (**0040-1** [Miller, Anna])

Comment: Thank you for inviting us to participate in the site audit and for considering our comments on the EIS scope. We look forward to working with your staff during the environmental review process. (**0040-4** [Miller, Anna])

Comment: However, the IJC does have additional responsibilities under the Canada-U.S. Great Lakes Water Quality Agreement and is pleased, therefore, that your environmental assessment will consider the potential impact of the proposed plan on water quality, aquatic biota and their habitat, or other environmental resources. (**0071-1** [Lawson, Ph.D., Charles])

Comment: U.S. Environmental Protection Agency (EPA) staff members were pleased to be a part of the Fermi 3 site audit visit in early February. We have a better understanding of the topics the Nuclear Regulatory Commission (NRC) will cover in its Environmental Impact Statement (EIS) for this project, a new reactor unit associated with the existing Fermi Nuclear Power Plant in Monroe County, Michigan. (**0080-1** [Westlake, Kenneth A.])

Comment: Thank you for inviting us to participate in the site audit and for considering our comments on the EIS scope. We look forward to working with your staff during the environmental review process: (**0080-4** [Westlake, Kenneth A.])

Response: *NRC conducts a number of activities during its review that will involve direct interactions with other governmental organizations. The comments are general in nature, provide no new information related to the impacts of construction or operations of the proposed Fermi 3 nuclear plant, and will not be considered in developing the EIS.*

Comment: Please advise me how the Nuclear Regular Commission intends to move on this possibility. Who will be involved in the decision? Will the local community have a voice? (**0021-2** [Hart, Donna])

Response: *The licensing process for COL applications is specified in Title 10 of the Code of Federal Regulations (10 CFR) Part 52. The process includes a detailed review by the NRC of an applicant's COL application to determine the safety and environmental effects of construction and operation of a nuclear power facility. After review of the application against the regulations, a hearing will be conducted to determine whether it is appropriate to issue the license. Both*

safety issues and environmental issues will be evaluated before a decision on an application is reached. As described in the regulations, based on the finding of its review, NRC can deny issuance of a license if it would not meet the regulatory requirements.

Public involvement and comments are invited and encouraged throughout the environmental review of major Federal actions; the issuance of a COL would be a major Federal action and, therefore, requires the development of an EIS. NRC formally solicits both written and oral comments from members of the public at two different times during the environmental review, at the beginning of the process during environmental scoping for the EIS and when the draft EIS is issued.

Comment: If is very difficult to change habits. I ask you to be brave in taking action to avoid the possibility of serious or irreversible environmental harm even when scientific knowledge is incomplete or inconclusive. I ask you to be courageous in taking in the information that we are learning and in learning from any mistakes from your field. We humans can now affect the global climate, environment and life by our actions. We can add to the burden of a withering planet or we can bring enormous relief and safety. Please turn all your leadership toward clear energy solutions in favor of long-term care and flourishing Earth's human and ecological communities. Sincerely counting on your openness and determination to support thoughtful energy plans. (**0027-4** [Askwith, Annemarie])

Response: *NRC does not have a role in establishing the energy policy of the United States. NRC does not promote the use of nuclear power as a preferred energy alternative, and it does not regulate alternatives to producing electricity that do not involve nuclear power. Establishing energy policy is the domain of the President, the Congress, and the U.S. Department of Energy. Nevertheless, as part of NRC's environmental review, alternative actions such as the no-action alternative (energy efficiency and demand-side management), new generation alternatives, purchased electrical power, alternative technologies (including renewable energy such as wind and solar), and the combination of alternatives will be considered in Chapter 9 of the EIS.*

Comment: A NEPA document in connection with Fermi 3 will be a vain undertaking unless the Nuclear Regulatory Commission administratively forbids the initiation of any physical construction or preconstruction activities at the Fermi 3 site until the completion and finalization of an Environmental Impact Statement and selection of a preferred alternative.

In 2007 the Nuclear Regulatory Commission promulgated a new, de-regulated definition of construction as that term applies to the building of new nuclear power plants. Under the new 10 C.F.R. 50.10(a)(2), the following activities were relieved of all NRC oversight:
> Site exploration
> Procurement
> Logging, clearing of land, grading

> Excavation for any structure
> Fabrication at other than the final onsite, in-place location (modules)

At the same time, the limited work authorization - the first point at which NRC build authority must be sought - was moved higher/later in the licensing continuum. The new LWA list of allowable activities contained in the revised 10 C.F.R. 50.10(d)(1) includes:
> Driving of pilings
> Subsurface preparation
> Placement of backfill, concrete, or permanent retaining walls
> Installation of foundation

The drastic alteration of the meaning of construction circumvents NEPA. By allowing excavation activity, for example, the utility commences an irretrievable commitment to a nuclear-fired power plant long before the completion of an Environmental Impact Statement which is supposed to seriously consider reasonable alternatives. This manifests an undeniable bias toward central baseload plant construction and precludes substantive consideration of any other alternatives such as wind, solar, geothermal and energy conservation. By de-regulating the nuclear plant construction process from NEPA restrictions, the Commission is handing DTE, as applicant, the sunk costs argument, i.e., that because the utility has incurred expenses for its project, it should not, nay, must not, be denied an NRC license to complete it.

If the Commission were to allow any acts of construction to proceed before the completion of the NEPA process, such is illegal because it is contrary to NEPA. Because such enabling would act to deprive the public of the benefit of the procedural protections of NEPA, the NRC revamping of its definition of construction comprises a denial of due process and is unconstitutional as applied. (**0045-1** [Lodge, Terry])

Comment: The present process allows DTE to, de facto, irretrievably commit to the project and to invest heavily in construction prior to the de jure selection of a preferred alternative. This makes the environmental document into a farce. A project being built while it is being licensed is far more difficult to stop than a project which seeks merely paper approval. Sunk costs significantly undermine the effectiveness of environmental laws. And besides massive investment, the work undertaken prior to a final EIS drastically affects the environment and natural resources - the very resources that should have been protected until more thorough analysis of the project's impact on the environment was conducted. By the time opponents of the project can get a court to consider enjoining the project, the court faces a fait accompli.

The First Circuit Court of Appeals illustrated in Sierra Club v. Marsh the dangers that sunk costs pose in the NEPA context. There, the Court of Appeals vacated a district court ruling denying a preliminary injunction to environmental plaintiffs. The plaintiffs sought to halt the construction of a causeway to an island that the State of Maine wanted to develop into a marine terminal. The

district court had denied the preliminary injunction in the belief that the harm to the environment was not irreparable because the causeway always could be removed at a later time.

The Court of Appeals vacated the district court's decision not to issue a preliminary injunction, Sierra Club v. Marsh, 872 F.2d 497, 500-501 (1st Cir. 1989) because setting aside an agency's decision at a later date would not undo environmental harm. Moreover, the commitment of resources already made to the project would influence any re-evaluation of the merits of the project. The appellate panel held that it is far easier to influence an initial choice than to change a mind already made up and that the harm at stake is a harm to the environment, but the harm consists of the added risk to the environment that takes place when governmental decision makers make up their minds without having before them an analysis (with prior public comment) of the likely effects of their decision upon the environment. Id. Hence premature decisions irreparably harm the environment, by increasing the risk to the environment.

Congress promulgated NEPA to ensure that federal projects were not initiated until an accurate assessment of the project's impact on the environment was complete. Vermont Yankee Nuclear Power Corp. v. National Resources Defense Council, Inc., 435 U.S. 519, 558 (1978) (finding Congress passed NEPA to ensure that federal agencies consider the environmental consequences of proposed actions during the decision-making process, thereby insuring fully informed and well-considered decisions); Massachusetts v. Watt, 716 F.2d 946, 953 (1st Cir. 1983) ([NEPA's] purpose is to require consideration of environmental factors before project momentum is irresistible, before options are closed, and before agency commitments are set in concrete. (quoting W. Rogers, Environmental Law 7.7 at 767 (1977)); Arlington Coalition on Transp. v. Volpe, 458 F.2d 1323, 1333 (4th Cir.) (stating that the purpose of NEPA [is] to insure that actions by federal agencies be taken with due consideration of environmental effects), cert. denied sub nom. Fugate v. Arlington Coalition on Transp., 409 U.S. 1000 (1972).

Regulations issued pursuant to NEPA state that until an agency issues a record of decision ... no action concerning the proposal shall be taken which would: (1) have an adverse environmental impact; or (2) limit the choice of reasonable alternatives. 40 C.F.R. 1506.1 (1995); see also 40 C.F.R. 1501.2 (stating that agencies must integrate the NEPA process with other planning at the earliest possible time to insure that planning and decisions reflect environmental values. (**0045-3** [Lodge, Terry])

Comment: In the case of Fermi 3, the Commission should immediately forbid any physical activity at the proposed plant site by DTE or its contractors and subcontractors which is designed to further a build alternative at the proposed site for Fermi 3, pending formal and final completion of an EIS and the selection of a preferred alternative. To allow otherwise violates NEPA and invites a lawsuit. (**0045-4** [Lodge, Terry])

Comment: I call for the NRC to not allow any preconstruction activity until a full EIS is completed and all alternatives are examined in a comprehensive way. Allowing preconstruction activity defeats the purpose of NEPA, as well as not allowing examination or mitigation of preconstruction activity by NEPA. (**0051-3** [Cumbow, Kay])

Comment: I'd like to talk about the integrity of the NEPA process. I appreciate greatly the fact that the Nuclear Regulatory Commission has professional staff who are devoted to ensuring that NEPA's complied with. And it's not the people here today I have problems with. I have problems with the former Commissioner Merrifield, who departed the NRC in 2007 only after he had hand-carried through the process a rule change that deregulated the construction process so that Detroit Edison, and other utilities, are able to undertake serious construction of nuclear power plants before the NEPA process is completed. And to my knowledge it's the only agency that I've ever encountered that is able to -- that has enabled its client population to do that.

When there's a timber cut, Environmental Impact Statement process, the trees don't get cut before the ultimate decision is made and the environmental considerations denominated. When the Department of Energy wants to detonate a test weapon at the Nevada Test Site, they don't set off the bomb before they've completed the NEPA process. When your State Highway Department of Transportation wants to build an interstate through your living room, they don't get to start the bulldozers and knock over houses before they've completed the NEPA process, ruled in or ruled out alternatives. (**0058-116** [Lodge, Terry])

Comment: The other thing that I was concerned about was that these plants, like Fermi, are able to build part of their structure outside the regulation of a permit. In other words, if I want to lay all the concrete that it's going to take to build the plant, I don't have to wait for the permit to be approved to go ahead and start building.

It's kind of a flaw in the law because, as I see it, it looks like the taxpayer is subsidizing the possibility that there will be any kind of a refusal of the NRC to approve the plant. So if the plant has a chance of being refused, then the taxpayer will pick up the cost of all of the structures that are built without the approval.

The only way that I can see that somebody would go ahead and start building structures like these, is if they already knew that the approval would take place. If that's not correct I would like somebody to tell me why someone would spend millions and millions of dollars without having any idea of whether they would be reimbursed. (**0058-43** [Simpson, Robert])

Response: *These comments refer to a 2007 amendment to the Commission's regulations concerning limited work authorizations (72 FR 57416, October 9, 2007). In 10 CFR sections 50.10(a) and 51.4, the definition of construction is limited to activities which are for safety-related structures, systems, or components (SSCs) and certain other SSCs. A limited work*

authorization, construction permit, or COL is required before performing such activities. Activities that do not fall within NRC's definition of construction, such as clearing and grading, excavating, building transmission lines, and erecting support buildings are considered preconstruction activities that do not require NRC authorization. Most of these activities are regulated by other local, State, Tribal, or Federal agencies and require permits from them to proceed. In its environmental review, NRC must consider preconstruction activities in the context of cumulative impacts. These impacts will be evaluated in Chapters 4 and 7 of the EIS.

D.1.3 Comments Concerning Land Use – Site and Vicinity

Comment: Ironically the War of 1812 Bicentennial planning process shares the same timeframe as the Environmental Review process for Fermi unit 3. And in accordance the State of Michigan Centers for Regional Excellence Program, groups tourism with energy production as collaborative activities. In fact, the seven-and-a-half mile radius from Fermi unit 3 includes all of the cultural, historical, recreational, and natural sites being considered as bicentennial legacy projects.

The group I represent will be long gone before Fermi unit 3 is operational. However, the Experiential Tourism Task Group War of 1812 Bicentennial Steering Committee in Monroe County was charged with the responsibility of creating bicentennial legacy projects to enhance tourism. Our objective is to marshal all of the heritage resources on the waterfront to make a compelling experience for visitors to the Lake Erie west region. 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. This would be a cultural, economic endeavor that would bridge the gap to future generations. It would start the process of reintroducing missing species that once were abundant in the Lake Erie marshes. The Downriver link, Greenways Initiative, has advocated a non-motorized trail around Fermi unit on North Dixie Highway. The National Park Service promotes the rivers trails, and conservation assistance program that would supplement this effort.

Within the seven-and-a-half radius of Fermi Unit 3, the U.S. Fish and Wildlife Service has established an international wildlife refuge. The National Park Service operates the Motor City's National Heritage area, and is exploring the establishment of a National Battlefield Park, that would connect to the North Country National Scenic Trail near Fort Meigs in Perrysburg, Ohio. The US Army Corps of Engineers operates a confined disposal facility on the St. Lawrence Seaway at Pointe Mouillee, that is the world's largest freshwater marsh restoration project. This is all exciting news, and the combined license application should be updated to reflect these initiatives, and the application should join in the effort to create a center for regional excellence built on the energy industry in the Lake Erie West region. (**0058-124** [Micka, Richard])

Comment: One of the key elements in the State centers of regional excellence program is energy production. Another element is tourism. Ironically both of these elements have come together on the shores of Lake Erie. All the bicentennial heritage resources, cultural, historic, recreational, and natural, are within the seven-and-a-half mile radius of Fermi Unit 3, proposed Fermi Unit 3.

The planning process for the bicentennial coincides with the environmental review process for Fermi Unit 3. The greatest challenge for the Bicentennial Task Group is achieving center of regional excellence status in capacity building, which is the hallmark of sustainable energy production.

This sphere of influence surrounding the existing Fermi nuclear power plant makes it a prime candidate to become a center of regional excellence under the Governor's transformation initiative. The scoping process for Fermi's Unit 3 comes at a critical time. Achieving center of regional excellence could be a byproduct of the Fermi Unit 3 environmental report and would benefit the entire community.

The Fermi 3 scoping process and environmental report provide a compilation of all the efforts undertaken to date to restore environmental resources on the shore of Lake Erie. So there's an immediate result and benefit from this process that we're taking under our administration here this evening. So have heart and stay with the program. (**0059-87** [Micka, Richard])

Comment: The 7.5 Mile Radius within the Fermi Unit 3 Sphere of Influence can become a Center for Regional Excellence (CRE) under the Governor's Transformation Initiative. It needs to be packaged in such a way that it fulfills the Cultural, Economic, Development Action Strategy proposed by the State of Michigan. An Energy Corridor along the West Shore of Lake Erie would benefit the Community Cultural Economic Development Readiness Initiative. This process uses a prescribed Set of Capacity Building Tools toward attainment of Community Empowerment and Actualization Goals. The COLA already uses these tools in bringing about Sustainable Energy Resources such as Efficiency, Research, Assessment, Evaluation, Consultancy, Training, Mentoring, Planning, Partnerships, Collaborations and Incentives. Fermi Unit 3 can lead by example. As a member of the Community, Fermi Unit 3 should work with Monroe County to implement a Cultural, Economic, Development Action Strategy (copy attached). The entire Electrical Generation Resources of Monroe County should be harnessed to create a Center for Regional Excellence. The Energy Story needs to be told specifically where Stewardship of Natural Resources is concerned. Finally, there are two 1812 Legacies within the 7.5 mile Radius that need to be explored.

Wild Rice. Efforts are under way 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. This would be a cultural, economic endeavor -that would bridge the

gap to future generations. It would start the process of reintroducing missing species that once were abundant in the Lake Erie Marshes.

Non-Motorized Transportation. The Downriver Linked Greenways Initiative (Brochure attached) has advocated a non-motorized trail around Fermi Unit 3 on North Dixie Hwy. (Hull's Road). This is a CRE Project and could become a part of the Fermi Unit 3 Evacuation Plan. The NPS promotes the Rivers, Trails and Conservation Assistance (RICA) Program that would supplement this effort. (**0082-31** [Micka, Richard])

Response: *These interdisciplinary comments relate to existing and proposed land use, cultural resources, and ecology in the site vicinity. These aspects of the affected environment will be discussed in Chapter 2 of the EIS. General impacts of the proposed action on land use, including expected permanent and temporary land use changes at the site in the vicinity, in the region, and in offsite areas such as affected transmission corridors, will be evaluated in Chapters 4 and 5 of the EIS. Impacts specifically related to the 1812 Bicentennial Project will be addressed in the cultural resources impact discussions in Chapters 4 and 5 of the EIS. Impacts specifically related to the possible reestablishment of wild rice in the wetlands along Lake Erie will be addressed in the terrestrial ecology impact discussions in those same chapters. Cumulative impacts of the proposed action will be discussed in Chapter 7 of the EIS.*

Comment: if there is some way of better connecting the natural spaces we still have along the shoreline. These power plants, whether they're coal or nuclear, tend to be dead spots for outdoor recreation. Hikers can't access them generally, and fishermen oftentimes have to deal with sometimes water access problems because of security in the age of terrorism. And I guess what I'm asking DTE maybe to do is to do some compensation for the local residents to have some positive environmental and recreational impact in addition to the plant development. (**0059-80** [Ingels, Mike])

Response: *Impacts of construction and operation of the proposed Fermi 3 nuclear plant on recreational opportunities, and a discussion of any possible and appropriate mitigation measures, will be presented in the land use impact discussions in Chapters 4 and 5 of the EIS.*

Comment: Staff of the MDEQ has conducted an initial review of the proposal, which indicates that this project is located within Michigan's coastal management boundary and is subject to Federal Consistency requirements. Before the U.S. Nuclear Regulatory Commission can issue the proposed COL, staff of the LWMD will need to review the proposed project for Federal Consistency with Michigan's Coastal Management Program (MCMP), as required by Section 307 of the Coastal Zone Management Act, PL 92-583, as amended. This will happen after the final EIS has been submitted to our office with a request for Coastal Zone Management certification of Federal Consistency. A determination of Federal Consistency with the MCMP requires evaluation of a project to determine if it will have an adverse impact on coastal, land, or, water uses or coastal resources. Projects are evaluated using the permitting criteria

contained in the regulatory statutes administered by the MDEQ. These statutes constitute the enforceable policies of the MCMP. The statutes that this project will be reviewed against for Federal Consistency are found in Michigan's NREPA. The COL proposes state regulated construction activities which will require state permits and may cause significant impacts, as discussed in more detail below. (**0079-1** [Browne, Elizabeth M.])

Response: *Prior to issuance of a COL for the proposed Fermi 3 nuclear plant, Detroit Edison will be required to demonstrate compliance with all applicable Federal and State laws and regulations including those of the Coastal Zone Management Act.*

Comment: Figure 2.4-6 illustrates the Detroit River International Wildlife Refuge Boundary. The south extent of the Boundary follows 1-75 to the Ohio line. It does not terminate at the River Raisin Federal Navigation Channel (Monroe Harbor) as indicated in Figure 2.4-6.

Paragraph 2.2.1.2.5 (Page 2-18) Natural and Recreational Areas. The ER indicates that the Detroit River International Wildlife Refuge (DRIWR) is not open to the public. There are units within the Refuge such as Humbug Marsh (Trenton, MI) and Erie Marsh (Erie, MI) that are open to the public at certain times of the year. In the future, the Refuge will encourage public visitation. The Fermi Unit 3 Area is not open to the public. (**0082-27** [Micka, Richard])

Response: *This comment provides information on land use categories and restrictions in the vicinity of the Fermi site, particularly as related to the Detroit River International Wildlife Refuge. This information will be considered in Chapter 2 of the EIS.*

Comment: Figure 2.1-2 illustrates a 7.5 mile Radius around the Fermi Unit 3 vicinity. This radius encompasses a number of Heritage Resource Sites in the Coastal Zone of Monroe County, MI.

RECREATIONAL. Sterling State Park and Downriver Linked Greenways Initiative. (Michigan DNRJ National Park Service/Rivers, Trails & Conservation Assistance Program).

NATURAL. Detroit River International Wildlife Refuge -Eagle Island Marsh (US Fish & Wildlife Service/DRIWR). (**0082-30** [Micka, Richard])

Response: *This comment provides information on land use categories and restrictions in the vicinity of the Fermi site, particularly as related to Heritage Resource Sites. This information will be considered in Chapter 2 of the EIS.*

D.1.4 Comments Concerning Meteorology and Air Quality

Comment: Construction of the project would create additional greenhouse gases from the cement required for the project, as well as the transportation used to move materials to the area. (**0039-3** [Mitchell, Rita])

Comment: The proponents should be required to do a complete carbon- footprint analysis involved in the construction of the plant and the preparation of materials and equipment, including the carbon emissions associated with uranium mining, refining, enrichment, and fuel fabrication. (**0048-3** [Edwards, Gordon])

Comment: One cannot read a newspaper or watch a television news program without seeing references to the desire for decreased reliance on carbon-based fuels for national security and environmental reasons, to name a few.

The Fermi 3 project provides a step in the right direction towards achieving this goal. (**0058-120** [Lavelline, Joe])

Response: *The NRC staff will evaluate air quality impacts associated with the construction and operation of the Fermi 3 nuclear power plant (including those from carbon and other greenhouse gas emissions) in Chapters 4 and 5, respectively, of the EIS. Carbon emissions from the uranium fuel cycle will be addressed in Chapter 6 of the EIS.*

Comment: I don't know if the cooling towers are included, but if there are I know some cooling towers use fungicides and algaecides to reduce the buildup of algae within cooling towers. Some of these things are chlorinated chemicals which would also have environmental impacts to the air, to the water, and so forth. (**0058-107** [McArdle, Ed])

Response: *The NRC staff will examine the potential impacts of water treatment chemicals used in cooling towers. Results of the analysis will be presented in Chapter 5 of the EIS.*

D.1.5 Comments Concerning Geology

Comment: We understand the site may have subsurface karst geology. We recommend the EIS address whether there is karst geology and, if present, evaluate how this geologic setting may influence the project's environmental impacts. To facilitate our review, we would appreciate knowing whether karst geology is present, as soon as this information is available. (**0040-3** [Miller, Anna])

Comment: We understand the site may have subsurface karst geology. We recommend the EIS address whether there is karst geology and, if present, evaluate how this geologic setting may influence the project's environmental impacts. To facilitate our review, we would

appreciate knowing whether karst geology is present, as soon as this information is available. (**0080-3** [Westlake, Kenneth A.])

Response: *The presence of karst geology in southeastern Michigan will be investigated, and the findings will be presented as background information in Chapter 2 (Affected Environment) of the EIS. If karst is present, it will be evaluated accordingly. Plant safety issues related to karst geology will be addressed in Chapter 2 of NRC's Safety Evaluation Report.*

D.1.6 Comments Concerning Hydrology – Surface Water

Comment: Water implications: Lake Erie is the shallowest of the Great Lakes. Nuclear energy uses a great deal of water. As the effects of global warming are realized, Lake Erie, as the shallowest of the Great Lakes, will be at the greatest risk. Utilization of, and contamination of great quantities of Lake Erie water is not environmentally responsible. The Great Lakes watershed contains a fifth of Earth's fresh water. Protection of the Great Lakes requires that all development projects such as additional nuclear power plants, be considered for long-term generational effects. We cannot replace the Great Lakes, Lake Erie, or the River Raisin, the waters upon which the Fermi(s) depend. We cannot live without water--clean, non-radiated water. (**0016-3** [Rivera, Gloria])

Comment: In addition to releasing radioactive and toxic poisons into Lake Erie, Fermi currently uses the lake to cool the power plant. (**0019-4** [Schemanksi, Sally])

Comment: The EIS should take into account predicted decreases in Lake Erie water levels due to global warming - 3 to 6 feet over the next 60 to 70 years - when considering the implications for water intake and thermal releases.

The analysis should focus on western Lake Erie, the shallowest part of the lake, rather than using the entire lake in its overall analysis.

Data on phosphorous in the application is out of date. Dissolved phosphorous levels have been increasing. (**0028-2** [Shiffler, Nancy L.])

Comment: Are the temporal, special, thermal and volumetric characteristics of the buoyant plume adequately predicted? The Combined License Application (COL) indicates water will be discharged offshore and the plume is expected to be dissipated approximately 1,291 feet from shore. The model predicts a mixing zone of 130 feet long by 226 feet wide, for a total plume area of 0.67 acres. The Department has observed significant direct and indirect negative effects to aquatic resources from power plants discharging to the Michigan waters of the Lake Erie basin. Based on that experience we request clarification of the following questions: 1. Is there a predicted sinking plume? If so, are the temporal, special, thermal and volumetric characteristics of the buoyant plume adequately predicted? 2. Is the volume, velocity, time of

passage and time-temperature information in the intake facilities, through the plant, in the discharge facilities, and in the centerline of the thermal plume adequately predicted? (**0029-2** [Freiburger, Chris])

Comment: The Department would like a better explanation regarding the fate of the chemicals used to treat the cooling water and their potential impacts to water quality in the discharge area. The COL indicates that the levels will be monitored as part of the NPDES permit, but we suggest that a detailed description of how those would be treated or managed within the mixing zone be included. (**0029-7** [Freiburger, Chris])

Comment: Will more nuclear power demand more water for future cooling demands? Will people have less water rights because cooling issues demand more water? (**0031-4** [Rysztak, Robert])

Comment: Lake Erie's shallow western basin cannot tolerate the thermal pollution from yet one more large-scale thermo-electric power plant. Lake Erie already faces major lake level loss and retreat of its waters from the current lakeshore due to climate change. It already has a significantly higher air temperature than the rest of the Great Lakes, which contributes to evaporation of Lake Erie's waters. Such water loss will exacerbate overheating, especially in the shallow waters of Lake Erie's western basin, with a current average depth of just 24 feet. (**0050-18** [Kamps, Kevin])

Comment: Given this massive thermal pollution, Fermi 3 should be required to utilize the best available dry cooling tower technology, to minimize or even eliminate water withdrawals from, and heat discharges, into Lake Erie. In addition, DTE's Monroe Coal Plant should be required to install an additional best-available-technology cooling tower. Fermi 3's intake and outfall is Lake Erie but during at least some conditions the intake and outfall would impact the nearby Maumee Bay estuary, the average depth of which is just five feet, and which is already impacted by the neighboring DTE Monroe coal burning power plant, which uses an average of 1.9 billion gallons of water a day, as well as the adjacent Fermi 2 nuclear plant, which uses an additional tens of millions of gallons a day. Such impacts must be evaluated. (**0050-20** [Kamps, Kevin])

Comment: when we look at the Great Lakes, which have many nuclear plants around us, Michigan is the most exposed of all the states in terms of the Great Lakes waters and the possibility of damaging those waters, because the lower peninsula is surrounded on three sides by water. The upper peninsula is totally surrounded by Great Lakes water.

So protecting the Great Lakes is a great issue for us as Michigan citizens in the development of our economy and the sustainability of our population, (**0058-100** [Holden, Anna])

Comment: Another thing I came across was an article in Waste News about the EPA having a mercury reduction program for the Comanche Nuclear Power Station in Texas. They didn't explain how mercury was used. I don't know if it was part of the process or instrumentation or disposal of old instruments or what. But I think if there's any possibility of mercury contamination that should be looked at also. (**0058-110** [McArdle, Ed])

Comment: If there's going to be any heat transference into the Lake into Brest Bay area, how can we sustain that? You know, we used to have Perch Town Derby. The Lake doesn't freeze anymore. There's been impacts. (**0058-134** [Dyson, Ed])

Comment: I would just like to say further that global warming -- nuclear power plants need cooling water. So if you've got hot water coming in, then you have to shut down your reactors. (**0058-26** [Cumbow, Kay])

Comment: Others have already spoken eloquently of the impact on Lake Erie. Just let me restate and affirm that we cannot replace the Great Lakes, Lake Erie, or the River Raisin, the rivers upon which Fermi depend. We cannot live without water, clean, non-radiated water. (**0058-68** [Weber, Margaret])

Comment: Climate change is predicted to decrease water levels in Lake Erie from a little less than 3' to up to 6' in the next 60 -70 years. Predicted decreases in water levels would literally mean that there would be no water in Maumee Bay which is water that is used by other power plants and proposed for Fermi 3. Climate change projected impacts on Western Lake Erie and projected decreasing Lake Erie water levels should be part of the environmental review. (**0082-11** [Bihn, Sandy])

Comment: a determination should be made on the impacts of the up to 49 million gallons of additional heated discharge waters from the proposed Fermi 3. The application uses all of Lake Erie as the source of water available and impacted when in fact the waters used and needed for the plant lie entirely with the Western Basin of Lake Erie. The assessment needs to look at water quantities in Western Lake Erie and Maumee Bay -not all of Lake Erie. Western Lake Erie holds only 5% of the volume of Lake Erie. (**0082-14** [Bihn, Sandy])

Comment: The application talks about the influence of the Detroit River on Toledo's water intake and then fails to include the Toledo water intake in its environmental analysis. This analysis needs to be conducted as part of the environmental assessment. (**0082-18** [Bihn, Sandy])

Comment: Water implications: Lake Erie is the shallowest of the Great Lakes. Nuclear energy uses a great deal of water. As the effects of global warming are realized, Lake Erie, as the shallowest of the Great Lakes, will be at the greatest risk. Utilization of, and contamination of great quantities of Lake Erie water is not environmentally responsible. The Great Lakes

watershed contains a fifth of Earth's freshwater. Protection of the Great Lakes requires that all development projects such as additional nuclear power plants, be considered for long-term generational effects. We cannot replace the Great Lakes, Lake Erie, or the River Raisin, the waters upon which the Fermi(s) depend. We cannot live without water-clean, non-radiated water. (**0082-34** [Weber, Margaret])

Response: *The construction and operation of a nuclear power plant involves the consumption of water. While NRC does not regulate or manage water resources, it does have the responsibility under NEPA to assess and disclose the impacts of the proposed plant on water resources. In Chapters 4 and 5 of the EIS, the NRC staff will independently evaluate impacts of the use of water from Lake Erie on the lake, and will evaluate the effects of the thermal and effluent discharges on the western Lake Erie basin, as well as on other parts of the lake, as appropriate. This evaluation will consider lake conditions during construction and operation of the proposed plant.*

Comment: Also, the surface water analysis seems to only include Monroe, Michigan. It should include all the counties. (**0058-53** [Bihn, Sandy])

Comment: The application only looks at Monroe County for Surface Water -the surface water analysis should include Lucas (Ohio), Ottawa (Ohio), Monroe(Michigan) and Wayne (Michigan). (**0082-22** [Bihn, Sandy])

Response: *The analysis of surface water issues to be presented in Chapters 4 and 5 of the EIS will include all of the western basin of Lake Erie and the rest of the lake, as appropriate. Surface water reviews addressed in the analysis will pay particular attention to counties where the water resource is being impacted. Thus, all counties adjacent to the lake will be covered by the analysis. More detailed attention will be paid to those counties, such as Monroe County, where particular issues can be identified.*

Comment: Also the short and long range Great Lakes levels I'm sure should be addressed, and I'm thinking of not just the water depletion because of global warming, but also the short term seiche events -- if I pronounce that right -- when wind blows the water back and forth, and the winds are supposed to be increasing. (**0058-108** [McArdle, Ed])

Response: *The comment refers to the effects of seiches on lake water levels. The effects of seiches on water availability during operations will be discussed in Chapter 5 of the EIS. Seiches also relate to plant safety, which will be addressed in the NRC staff's Safety Evaluation Report for Fermi 3.*

Comment: It appears that at least one stream flows through the DEC property, regulated under Part 301 of the NREPA. We recommend that all stream areas be identified and that any potential impacts be avoided and minimized in the planning process. Stream impacts that can

not be avoided in the construction process may require stream mitigation. Typical mitigation for stream impacts include stream restoration using natural channel design principals, maintaining and/or establishing streamside buffers, and installing stream crossings that clear span the stream to bankfull width. (**0079-4** [Browne, Elizabeth M.])

Response: *Swan Creek is the only stream in the vicinity of the Fermi site. Water from the creek would not be used by Fermi 3. However, environmental effects of work on and along the stream, if this occurs, will be evaluated in the EIS.*

Comment: The application does not mention the practice of open lake dumping up to 800,000 cubic yards of sediments by the Army Corps of Engineers for the Toledo shipping channel. The turbidity from the open lake dumping would impact the intake of Fermi 3 and should be reviewed. (**0082-19** [Bihn, Sandy])

Response: *The open lake dumping mentioned in the comment occurred in Maumee Bay, about 3.5 mi northwest of Toledo Harbor Light, and more than 10 mi from the proposed Fermi 3 nuclear plant. The impacts of open dumping projects are addressed by the U.S. Army Corps of Engineers. However, the effects of such dumping, if any, will be evaluated as appropriate in Chapter 7 (Cumulative Impacts) of the EIS.*

Comment: Is the water intake for Frenchtown and Monroe considered in the environmental review? (**0083-30** [Kaufman, Hedwig])

Response: *The effects of Fermi 3 operations on water quality and availability at the water intake structures for Frenchtown and Monroe will be discussed in Chapter 5 of the EIS.*

Comment: The drainage area for the unnamed tributary to Lake Erie at the site is less than two square miles, and does not fall under the state's Floodplain Regulatory Authority, found in Part 31 of the NREPA. A state floodplain permit will not be required from the LWMD at this site.

While Part 31 does not regulate the floodplains of the Great Lakes, it should be noted that the floodplain for Lake Erie affects the project site. The floodplain limits are shown on the Monroe County Flood Insurance Rate Map (FIRM) panel 26115C0259 D, dated April 20, 2000. The 1 percent annual chance (100-year) flood elevation and the 0.2 percent annual chance (500-year) flood elevation for Lake Erie have been computed to be 578.8 feet, National Geodetic Vertical Datum of 1929 (NGVD 29) and 579.7 feet, NGVD 29, respectively. The State building code requires that a critical facility (such as a power plant) constructed in the floodplain, be elevated or flood-proofed one foot above the 0.2 percent annual chance flood elevation.

Frenchtown Township is also designated as a Flood Risk Area (FRA) under Part 323, of the NREPA. Construction standards in the FRA program are similar to those found in the State building code and the National Flood Insurance Program (NFIP). Frenchtown Township has

local permitting authority under the FRA Program and the building inspector should be closely involved in review throughout this project. (**0079-2** [Browne, Elizabeth M.])

Response: *The environmental impacts of construction and operation of Fermi 3 on the floodplains for Lake Erie and for Swan Creek will be evaluated in Chapters 4 and 5 of the EIS. Safety issues related to potential floods are outside the scope of the environmental review, but will be evaluated by the NRC staff in its Safety Evaluation Report.*

D.1.7 Comments Concerning Hydrology – Groundwater

Comment: They [nuclear reactors] also can leak elements such as tritium into the groundwater. (**0059-17** [Barnes, Kathryn])

Comment: They also can leak elements such as tritium into the groundwater. Radioactive elements cause cancer. (**0083-32** [Barnes, Kathryn])

Response: *Groundwater monitoring systems will be installed to detect releases to the subsurface if they occur. The movement of groundwater under the Fermi site, as well as the monitoring systems, will be evaluated in Chapters 4 and 5 of the EIS. The NRC staff will also review the consequences of an accidental release of radionuclides into groundwater in its Safety Evaluation Report.*

D.1.8 Comments Concerning Ecology – Terrestrial

Comment: The COL includes more recent data on the terrestrial/wetland resources near the project which highlights the very high diversity of plants and organisms in the coastal wetlands of Lake Erie. The COL describes the significant loss of these wetland complexes in the Michigan waters of Lake Erie. Given the diversity of habitats, and the high level of loss of these habitats, the Department opposes any net loss of wetlands for this project. The COL indicates the 126-acres of fill is small based on the U.S. Nuclear Regulatory Commission (NRC) criteria and should not require mitigation. The Department strongly disagrees. All wetland fill must be mitigated, especially in areas of high value habitat that is already incredibly rare in this basin. This is required pursuant to State law and cannot be waived. A complete description of the wetland mitigation project to offset impacts at the site must be included. The following information should be of use to you in developing appropriate wetland mitigation sites and design.

The diverse coastal wetlands in association with the secluded uplands on the property proposed for development provide good habitat for a variety of wildlife species. Lake Erie is a traditional migration route for waterfowl, marsh birds, wading birds, neotropicals and raptors. Birds such as Great Blue Herons and Great Egrets rest in the trees. They feed in the shallow waters near the shorelines and in the wetlands of the wildlife refuge. Ospreys and Bald Eagles have been

observed feeding within the shallow waters of the Fermi 2 Nuclear Power Plant (Department staff personal observations).

Historically the coastal marshes of the western Lake Erie area are important spring, fall and winter, staging, feeding and resting areas for waterfowl. The insects, invertebrates, crustaceans and mollusks that are supported within these wetland communities are also an important source of food for various fish and wildlife species. The emergent and shoreline habitats also provide opportunities for nesting and brood cover for both game birds and non-game birds. No net loss of undisturbed coastal wetland in the Western Lake Erie area is very crucial to this area. (**0029-8** [Freiburger, Chris])

Response: *The NRC staff will address potential impacts to terrestrial and wetland species and habitats, including wetlands in coastal and inland areas, in Chapters 4 and 5 of the EIS. The EIS will document how Detroit Edison has avoided or minimized impacts on wetlands and other waters of the United States. Potential mitigation measures will also be addressed in Chapters 4 and 5 of the EIS.*

Comment: The environmental section indicates a diverse population of amphibians and reptiles utilizing the variety of habitats located at the FERMI 3 site. Many of these species are dependent on the land/water interface for various life stages, foraging, reproduction, and hibernation. These special needs require minimal disturbance of the wetland areas and also emphasize the need for mitigation for any proposed wetland losses in the vicinity of the project. The environmental analysis must address specific impacts to these organisms as a result of proposed actions. (**0029-9** [Freiburger, Chris])

Response: *The NRC staff will address potential impacts to amphibians and reptiles as well as potential mitigation measures for these animals in Chapters 4 and 5 of the EIS.*

Comment: The western Lake Erie basin has historically been an important area for duck hunting. Duck hunting parties have continued using marshes and shorelines of this area. Because the area falls within important bird migration corridors it is critical to minimize any habitat loss or impart any activity that would unnecessarily disturb wildlife.

For current project operation, buoyed areas limit fishing and boating access in the vicinity of the plant. The Department acknowledges the importance of protecting the facilities and believes that current standards seem appropriate. Please address any proposed changes in current practices. (**0029-11** [Freiburger, Chris])

Comment: One of Wildlife Habitat Council's core activities is our certification of those corporate locations that maintain wildlife management programs. About 500 corporate habitat programs in 17 countries are now certified by Wildlife Habitat Council, including the one at DTE Energy's

Fermi 2 Power Plant. That is how I am acquainted with the history of land stewardship at Fermi 2.

Certification of a program by Wildlife Habitat Council requires substantial documentation of valid habitat enhancement activities, which DTE Energy's Fermi 2 plant has provided regularly since the year 2000. Plant employees help maintain about 650 acres of wildlife habitat. They have built nesting platforms for raptors and planted native plant meadows. The Fermi 2 wildlife team helps conserve 48 acres of vital coastal wetlands by battling invasive plants like purple loosestrife and phragmites; in so doing they preserve rare wetland plants as well as important stopover and over-wintering habitats for migrating waterfowl and raptors.

Fermi 2's location makes these actions all the more important. The plant is located along major migratory flyways for songbirds and raptors, which pass through by the millions each spring and fall. Migratory bird populations are threatened by habitat loss not only on each end of their journey, but also along the way as they seek necessary stop-over sites to rest and re-fuel.

At the same time, the Fermi 2 plant property includes coastal marsh wetlands, which have nearly disappeared from the southern Great Lakes. Wetlands are the most productive and diverse temperate zone ecosystems, and their loss means the loss of many species. So Fermi 2's stewardship has regionwide impact. (**0082-1** [Gruelle, Martha])

Response: *The NRC staff will address potential impacts to wetlands (including coastal marshes) and to shorelines with respect to their use as waterfowl and other migratory bird habitat in Chapters 4 and 5 of the EIS.*

Comment: A response to a threatened/endangered species review of the Fermi 3 proposed project in Wayne County, Michigan was sent from this office to the Black & Veatch Corporation November 28, 2007. In that response four endangered or threatened animal species were listed as being present in the area as were three species of threatened plants. Upon review of this report I noticed some discrepancies and causes for concern in regard to threatened species protection.

One animal species that is of primary concern in the area is the Eastern fox snake (*Pantherophis gloydi*). On page 2-333 of the Environmental Report it states that "nine occurrences were reported in Monroe County... the snake was sighted two times on the Fermi property in June 2008." There is a discrepancy to this statement on page 4-45 where it states "The eastern fox snake (a Michigan threatened species) has not been observed on the Fermi property, but the potential for its occurrence on the property does exist."

According to our records there is a viable population of Eastern fox snake at the site of the proposed project. We believe that going forward with the construction would not only kill snakes but destroy the habitat in which they live and possibly exterminate the species from the area. We would like to see a plan for protection of this rare species with regard to this new reactor project. (**0037-1** [Sargent, Lori])

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Response: *The presence of the eastern fox snake on the site will be acknowledged in Chapter 2 of the EIS. The NRC staff will address potential impacts to the eastern fox snake and its habitat and describe potential mitigation in Chapters 4 and 5 of the EIS.*

Comment: EPA encourages selection of alternatives with the least impact to wetlands. Therefore, we recommend a complete evaluation of the wetlands impacted by each feasible alternative site. We also encourage facility footprints within the plant site that will avoid or minimize wetlands impacts. If there are wetlands impacts, we recommend characterization and mitigation information be included in the EIS and not deferred to the permit stage. (**0040-2** [Miller, Anna])

Comment: EPA encourages selection of alternatives with the least impact to wetlands. Therefore, we recommend a complete evaluation of the wetlands impacted by each feasible alternative site. We also encourage facility footprints within the plant site that will avoid or minimize wetlands impacts. If there are wetlands impacts, we recommend characterization and

mitigation information be included in the EIS and not deferred to the permit stage. (**0080-2** [Westlake, Kenneth A.])

Response: *In Chapter 9 of the EIS, the NRC staff will describe the potential environmental impacts (including potential impacts to wetlands) of siting the project at alternative sites. Chapter 4 of the EIS will describe how ground-disturbing activities at the proposed site were planned to minimize wetland impacts, characterize unavoidable wetland impacts, and discuss possible wetland mitigation measures.*

Comment: We are committed, Detroit Edison, DTE Energy is committed to environmental stewardship. We've done that at Fermi site specifically in the form of the Wildlife Habitat Council certification, Clean Corporate Citizen designations, and the Michigan Department of Environmental Quality. We've set aside more than 600 acres of that site for inclusion in the Detroit River International Wildlife Refuge. We feel that the environment is not only crucial to this particular site, but it's a motto that we have throughout our company in terms of respect that's a core value, and to respect our community and our environment is really important to us. (**0058-10** [May, Ron])

Comment: It should also be noted during the development of the EIS that DTE and the US Fish and Wildlife Service have entered into a cooperative management agreement for 656 acres at the Fermi Power plant for the Detroit River International Wildlife Refuge. Refuge staff work closely with DTE on wildlife management activities. The Refuge has also acquired 65 acres (i.e., Fix Unit) at the mouth of Swan Creek immediately adjacent to the Fermi site. Refuge staff will continue to be actively involved in wildlife management throughout the planning process. (**0087-1** [Czarnecki, Craig A.])

Response: *The NRC staff will review and evaluate habitat loss and associated impacts, including areas currently within the Detroit River International Wildlife Refuge, in Chapters 2, 4, and 5 of the EIS.*

Comment: The wetlands on the property have been identified by DEC consultants and reviewed by MDEQ staff under MDEQ Wetland Identification Program (WIP) File 08-58-0003-WA. The WIP report dated November 7, 2008, identified the location and regulatory status of each wetland area under the authority of Part 303 of the NREPA. Based on the WIP report, a significant portion of the DEC property contains regulated wetlands, with most of the wetlands on the site being Great Lakes coastal wetlands. With historic losses of greater than 95 percent of the coastal wetlands of western Lake Erie, the wetlands on site represent a very important and rare natural resource for the State of Michigan. The Environmental Report describes the wetland impacts as moderate. In fact, it appears that the project as proposed would be one of the largest impacts to coastal wetlands in the history of Michigan's wetland statute.

Under Part 303, permits are required for any wetland dredging, filling, draining, and/or maintaining a use or development in a wetland. The location, type, function, and value of the wetlands on site should be considered during design and any impacts avoided and minimized to the greatest extent possible. Any proposed impact areas should be identified (including impacts from temporary and permanent parking, construction activities, and transmission lines) and reviewed through an environmental assessment of the site that evaluates plant and animal species and habitat diversity, water quality functions, fish and wildlife habitat, the location of rare or imperiled communities, threatened and endangered species, and any other important features of the wetland areas. All feasible and prudent alternatives to temporary and permanent impacts should be considered (including alternative configurations, acquiring adjacent properties, etc.). If the project will be phased, an overall site plan will be needed and reviewed as part of the alternatives analysis for the first permit application. Wetland impacts will require wetland mitigation and a combination of wetland restoration and preservation of on-site or off-site rare wetland communities (e.g., Lake Erie coastal wetlands, lake plain prairies, etc.) should be considered. (**0079-3** [Browne, Elizabeth M.])

Response: *The NRC staff will address potential impacts to wetlands in Chapters 4 and 5 of the EIS. The EIS will also include a cumulative analysis of wetland losses on the western shore of Lake Erie resulting from the Fermi 3 project combined with past and reasonably foreseeable future activities.*

Comment: Part 325, of the NREPA, regulates construction activities such as fills, docks, seawalls, dredging, outfall/intake pipes etc. and occupations of Great Lakes public trust bottomlands and waters. Part 325 requires the DEQ to protect the natural resources, public trust, and riparian rights of property owners when issuing a permit for construction activities in the Great Lakes.

An application for a permit will be required pursuant to Part 325 for any construction activity in Lake Erie below the natural ordinary high water mark at the site, including the wetlands connected to Lake Erie north and south of the power plant complex. (**0079-5** [Browne, Elizabeth M.])

Comment: Stream crossings and wetlands will be affected by the construction of Fermi 3 and the associated transmission lines. The Michigan Department of Environmental Quality (MDEQ) should be contacted to determine if permits are required for this activity in wetlands and stream crossings. Pursuant to the Natural Resources and Environmental Protection Act, the State of Michigan regulates certain activities in wetlands and inland lakes and streams. Development that would impact wetlands may require a permit for which this office may have review authority under the FWCA. In the review of these permit applications, we may concur with or without conditions or object to permit issuance depending on whether the proposed work may impact the Service's trust fish and wildlife resources. We recommend you contact the MDEQ, Land

and Water Management Division, Southeast Michigan District Office in Warren at 586/753-3700 for information concerning the need for permits under State law.

Wetland impacts should be avoided or minimized to the maximum extent possible. Any wetlands unavoidably destroyed during power plant and transmission line construction should be compensated by enhancing existing low quality wetlands or creating wetlands equivalent to those destroyed adjacent and/or contiguous with those wetlands impacted. This approach is consistent with the Service's mitigation policy. (**0087-3** [Czarnecki, Craig A.])

Response: *The NRC staff will address impacts to wetlands, waterways, and other natural resources, including possible mitigation measures, in Chapters 4 and 5 of the EIS. The EIS will note each Federal and State environmental permit required for the project, but Detroit Edison will apply for the permits independently of the EIS.*

Comment: Paragraph 2.4 Ecology (Page 2-321) and Table 2.4-2 (Page 2-888). 216 Plant Species are listed as found on the property. This is an impressive list, but does not include plants that should be present but are not. Industrial activity has disturbed this wetland ecosystem (the estuary of Swan Creek). Some plant species such as wild rice (*Zizania*) and Native Reed Grass or Cane (*Phragmites Communis*) have been extirpated (re: Michigan Waterfowl Management, Miles Pirnie, 1935). (**0082-28** [Micka, Richard])

Response: *The comment presents information about the site prior to development that will be included in the affected environment discussion in Chapter 2 of the EIS. The cumulative loss of rare plants and their habitat along the western shore of Lake Erie will be considered in Chapter 7 of the EIS.*

Comment: There are no specific locations for the proposed action. Therefore, the following list provides federally listed or candidate species information at the county level.

St. Clair: Indiana bat, rayed bean, Eastern prairie fringed orchid

Washtenaw: Indiana bat, Eastern massasauga, Mitchell's satyr butterfly, Eastern fringed prairie orchid

Wayne: Indiana bat, Eastern massasauga, Northern riffleshell, rayed bean, Eastern prairie fringed orchid

Lenawee: Indiana bat, Eastern massasauga, rayed bean

Monroe: Indiana bat, Kamer blue butterfly, Northern riffleshell, rayed bean, Eastern prairie fringed orchid.

For future endangered and threatened species list requests and consultations with the Service, refer to our endangered species and technical assistance website at http://www.fws.gov/midwest!endangered/section7/s7process/index.htm.

Further, please contact the Michigan Department of Natural Resources Endangered Species Assessment website, www.mcgi.state.mi.us/esa and contact Lori Sargent at sargentl2@michigan.gov or 517/373-1263 for information regarding the protection of threatened and endangered species under state law. State law requires a permit in advance if any work that could potentially damage, destroy or displace State listed species. (**0087-2** [Czarnecki, Craig A.])

Response: *The NRC staff will address potential impacts to Federal and State rare, threatened, and endangered species and habitats in Chapters 4 and 5 of the EIS. NRC will also comply with Section 7 of the Endangered Species Act by preparing a biological assessment of potential impacts to Federally listed species and completing any necessary formal consultation with the U.S. Fish and Wildlife Service and National Marine Fisheries Service. Any permits needed to comply with laws that protect State-listed threatened and endangered species would be listed in the EIS, but, as noted above, Detroit Edison will apply for the permits independently of the EIS.*

Comment: We recommend that the proposed transmission line corridors follow established right-of-ways to the maximum extent possible and to avoid large, contiguous tracts of forests. Utilizing existing footprints will diminish forest fragmentation and unnecessary habitat destruction. Studies indicate forest fragmentation has resulted in declining populations of several species of neotropical passerines. If NRC presently knows or when they know the total acreage of impacts to forested and wetland habitats, we request this information be sent to us. (**0087-4** [Czarnecki, Craig A.])

Response: *In Chapter 4 of the EIS, the NRC staff will address impacts to forest habitats, including forest fragmentation impacts and impacts to neotropical passerines and other forest-interior species, resulting from transmission line construction.*

Comment: The following references in the Environmental Report Highlight Lotus Ecology: Appendix 2A, Flora, page 2-877. Appendix 2-B, Life Histories of Threatened and Endangered Species, pages 2-888. Table 2.4-2, page 2-373, page 2-321, paragraph 2.4. Ecology, page 2.333, paragraph 2.4.1.2.2.2 really, American Lotus. Page 2-395, Table 2.4-6, Wildlife Habitat Council for July 2000, page 2-432, figure 2.4-17, important species transmission corridor.

These references to Michigan symbol for clean water of the American Lotus, are clearly indicative that the applicant has conducted due diligence in the COLA process. We appreciate that.

The Lotus Garden Club conducts tours of the Lotus beds in mid summer. Through the generosity of local utilities, the public is able to see their floral heritage on our waterfront. These tours take place after coordination with the utilities and in keeping with the requirements of Homeland Security.

Fermi unit 3 is situated in Laguna Beach, which is noted for extensive beds of American Lotus, *Nelumbo lutea*. This circumstance provides a much needed sanctuary for this threatened species. The Nuclear Regulatory Commission needs to know that the utilities have expended themselves well beyond the call of duty to host Lotus tours in those areas that are not off limits. This allows citizens of Monroe and areas to enjoy their rich heritage without compromising the integrity of any sensitive areas. But more importantly it has brought all of the utilities together in a cooperative spirit to promote biodiversity on their private holdings. The community benefits from this cooperation.

At one point in time the American Lotus was nearly extinct on the western shores of Lake Erie. Thanks to the likes of DTE Energy and other industrial concerns, the Lotus have come back. This provides an excellent model for restoration of other species that have been displaced by development over the recent years. We encourage you to make a list of those missing plants to see if they can be restored.

And I'd like to add to that. This brochure that was out front says it all. Every time you look at a brochure from Detroit Edison, or Fermi, or the International Wildlife Refuge, or the City or County of Monroe, you see the American Lotus. And the utilities were very influential with the Chamber of Commerce and the community as a whole to appear before the State of Michigan, and it took a three year process, to have the American Lotus listed as American's symbol for clean water. And we thank you for your assistance and success in this.

And the Lotus is rather like the canary in the marsh. Lotus clean the wetlands and they are a symbol of rebirth and life. They show that the water and the air is reasonably clean, and it gives habitat to flora and fauna of all types. The sturgeon are coming back, there's a lot of good signs. Look how well our eagles are doing. And each year when we have our Lotus tour, we give away a bag, or some similar gift like this, to all of our esteemed visitors. (**0058-123** [Micka, Jeanne])

Comment: These references to Michigan's Symbol for Clean Water (American Lotus) are clearly indicative that the Applicant has conducted due diligence in the COLA Process. We appreciate that.

The Lotus Garden Club conducts tours of the Lotus Beds in mid-summer. Through the generosity of local Utilities, the Public are able to see their Floral Heritage on the waterfront.

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At one point in time, the American Lotus were nearly extinct on the West Shore of Lake Erie. Thanks to the likes of DTE Energy and other industrial concerns, the Lotus have come back. This provides an excellent model for restoration of other species that have been displaced by development over the years. We encourage you to make a list of those missing plants to see if they can be restored. (**0082-26** [Micka, Jeanne])

Response: *The NRC staff will address impacts to American lotus and other rare, threatened, and endangered species in Chapters 4 and 5 of the EIS. The EIS will also consider the cumulative loss of rare plants and their habitat along the western shore of Lake Erie.*

D.1.9 Comments Concerning Ecology – Aquatic

Comment: Billions of fish and larvae are sucked into the station's cooling condensers and killed upon discharge with the heated water, hotter than the intake temperature. These discharges include major reductions of fish species and habitat. (**0019-5** [Schemanksi, Sally])

Comment: My concern is thermal pollution of our Great Lakes, specifically, Lake Erie.

Already several energy plants on shores of Lake Erie are polluting the waters in the western basin (which is about 24 feet deep). Trenton Channel coal plant, Monroe coal fire Plant (part of the Detroit Edison complex); Whiting coal plant at Luna Pier; Davis Besse nuclear plant at Oak Harbor and Bay Shore coal plant at Maumee Bay all send hot water into the Lake to the detriment and even destruction of fish and algae blooms and are creating a dead zone in the Lake.

My request is for cooling towers to mitigate the thermal load. The plans for Fermi 3 include only one cooling tower. More are needed. New environmental study is needed to assess real needs. NRC inspection needs to be increased in this regard. (**0024-1** [Hungerman, Marie Gabriel])

Comment: Of primary concern are issues related to fish entrainment and impingement, water quality, and wetlands. The application includes lengthy discussions of species of concern which

do require special attention, but the EIS must include monitoring for all species within the area of impact. Many wildlife species that utilize the refuge and fish species in the vicinity of the project are important game and non-game animals and fish. This includes species that perform a vital role in the ecosystem as forage. (**0029-1** [Freiburger, Chris])

Comment: The environmental report utilized phytoplankton and icthyoplankton results from studies conducted for the FERMI 2 project. While the vicinity is most likely acceptable for use, the most recent of this data is from the early 1990s. This data is probably not current enough to evaluate the potential effect of the FERMI 3 project when it goes on line. The report describes the significant improvements in water quality in Lake Erie, and it continues to improve. This may have changed the composition and abundance of these organisms. Therefore:

Are the seasonal phytoplankton populations by number and species known sufficiently well to detect possible changes in the receiving waterbody?

Are the seasonal phytoplankton populations by number and species known sufficiently well to detect possible changes in the discharge area and adjacent waters?

Relative to phytoplankton of the discharge area adjacent waters and the receiving waterbody, is it known or predicted what proportions of the populations are exposed to stresses caused by plant operation?

Are the effects of such exposures on phytoplankton populations (e.g., impairment or stimulation of productivity, time-temperature tolerances, population shifts both local and waterbody-wide, etc.) known or predicted?

Are the seasonal populations of benthic and attached algae in the discharge area and adjacent waters known sufficiently well to detect possible changes?

Are the effects of the plan operation on populations of benthic and attached algae considered, known or predicted? (**0029-3** [Freiburger, Chris])

Comment: The COL has a fairly comprehensive review of the aquatic invertebrate populations in the vicinity of the proposed project. However, given the current changes in water quality and the effects of invasive macro invertebrates such as dreissenid mussels (zebra and quagga), this composition can change significantly between the current review and the start up of the proposed project. Therefore:

Are the macro invertebrate populations in the discharge area and adjacent waters know sufficiently well to detect possible changes?

Are effects of plant operation on the macroinvertebrate populations considered, known or predicted?

Are the aquatic macrophyte populations in the discharge area and adjacent waters known sufficiently well to detect possible changes?
Are effects of plant operations on aquatic macrophyte populations considered, known or predicted? (**0029-4** [Freiburger, Chris])

Comment: The report includes data from joint MDNR and U.S. Fish and Wildlife Service (USFWS) fish surveys from 2004. This information is the most current public information on these fish populations. The COL reviewed substantial improvements to fish populations in the Lake Erie basin and the significance of those populations to the economy of the vicinity. Both commercial and recreational fisheries in the western basin of Lake Erie are sources of revenue for the local economies. This data will be 15-years old however by the time the proposed project goes on line. Therefore:

Is the seasonal abundance of fish eggs and larvae by species known sufficiently well to detect possible changes in the discharge area and adjacent waters?

Is it known or predicted what portion of the populations of fish eggs and larvae are exposed to stresses caused by plant operation?

Are the effects of such exposures on fish eggs and larvae considered known or predicted?

Is it known or predicted what impact such effects will have on fish populations in the discharge area, adjacent waters and the receiving waterbody?

Are the seasonal abundance and habits of adult fish by species known sufficiently well to detect possible changes in the discharge area and adjacent waters?

Is it considered, known or predicted what effect operation of the facility will have on these fish and their activities? (**0029-5** [Freiburger, Chris])

Comment: Use of Lake Erie, our warmest Great Lake, to assist with cooling water from the proposed new plant will have a detrimental effect on the wildlife of Lake Erie, a source of fresh water that is still recovering from significant pollution from the mid-20th century. (**0039-6** [Mitchell, Rita])

Comment: The environmental impact on Lake Erie with thermal and radiation to the Lake water, fish, and wildlife in the region is extremely objectionable. (**0041-4** [Englund, Lance])

Comment: Detroit Edison's Environmental Report holds that there are currently no problems with phosphorus contamination or algae in Lake Erie, which is false. NRC should address these issues, and the cumulative impacts that can be expected from adding yet another reactor at the Fermi power plant site. (**0050-17** [Kamps, Kevin])

Comment: Fermi 3 would harm Lake Erie's remarkably productive fisheries. Fermi 3's water usage would worsen the impingement and entrainment of Lake Erie biota already occurring at the numerous large-scale thermo-electric power plants sited on its shores. Negative impacts, including fish kills, must be prevented, to protect sports fisheries as well as Native American fishing rights recognized by legally-binding treaties signed by the U.S. federal government. Harm to all life stages of Lake Erie biota must be analyzed by NRC, and mitigated by DTE at Fermi 3. (**0050-21** [Kamps, Kevin])

Comment: If you've got too hot of water going out, you also have to shut your reactors because it ruins habitat for fish, for other macro-invertebrates. And this happened recently in Europe and also in the United States, when they had heat waves, that they had to shut down reactors because either the water coming in was too hot or going out was too hot.

Up at the Bruce, there normally is ice that covers Lake Huron up by there. But since the Bruce has been online, ice doesn't form around the Bruce. That ice further -- it serves to reflect the sun's radiation. If you've got too hot of water everywhere, you're not going to have that ice reflecting the sun's rays. (**0058-27** [Cumbow, Kay])

Comment: When Davis Besse was built, the permit was granted in 1989 -- or 1979, excuse me -- the Ohio Sea Grant people made the following statement: No new plants, and they were referring to power plants, should be constructed anywhere in the western basin of Lake Erie. If these suggestions are followed, new plants can be constructed on Lake Erie, and they meant the central and the eastern basin, without harming the valuable and growing fishery.

This statement was made by Drs. Reutter and Herrndoff from Ohio State University's Sea Grant program. Since the statement clearly says that no new power plant should be constructed here in the western basin, and the only place that they should be constructed, if in Lake Erie, is the central and eastern basin.

Fermi 3 is planned to be located in the shallowest, fishiest, most vulnerable waters of the Great Lakes, and they would combine with five other power plants that currently draw over 3 billion gallons of water in this area a day. These are the shallowest 24-foot of water in the Great Lakes. (**0058-45** [Bihn, Sandy])

Comment: And I wish that the Environmental Impact Statement would include the following considerations, which when I reviewed it [Environmental Report], it did not.

Also, there would be additional heated discharge waters from this plant, 49 million gallons of water in addition to the 3 billion. I think there should be an assessment of all the five plants and the cumulative impacts they're currently having. And then the additional impact on all these factors with the new plant. (**0058-48** [Bihn, Sandy])

Comment: the impingement and entrainment estimates need to be updated. (**0058-54** [Bihn, Sandy])

Comment: Nuclear reactors cause thermal pollution and kill fish. (**0059-16** [Barnes, Kathryn])

Comment: The application uses phosphorous data from 1997 -2003 and says phosphorous (algal blooms) is not a problem. Not true. Research clearly shows that since 1995 dissolved phosphorous and algal blooms including microcystis, in the Maumee River and Western Lake Erie are increasing. Ohio EPA has a Phosphorous Task Force trying to find ways to reduce the increasing green waters. The Lake Erie Protection Fund and the USEPA Great Lake's office are currently seeking grant proposals to find ways to reduce phosphorous and algal blooms in Western Lake Erie. The environmental assessment needs to include impacts on phosphorous and nutrient growth and algal blooms from the thermal use of up to 49 million gallons a day. (**0082-20** [Bihn, Sandy])

Comment: The fish impingement/entrainment discussion needs to be updated from Fermi 2 estimates. The assessment needs to look at the cumulative impact of adding one more fish killing source.. and the decreasing yellow perch populations and the increased controls on commercial fishermen in Ohio. The environmental assessment should include these factors. (**0082-23** [Bihn, Sandy])

Comment: Nuclear reactors cause thermal pollution, and kill fish. (**0083-31** [Barnes, Kathryn])

Response: *The EIS analysis will use the most recently available information to characterize the existing ecological conditions in the vicinity of the Fermi site and to analyze potential impacts from the project on aquatic ecosystems. The NRC staff will evaluate the impacts related to construction and operation, including impingement, entrainment, chronic and acute thermal impacts, and water quality (including phosphorus levels). The NRC staff will also address cumulative impacts to the aquatic environment in the vicinity of the Fermi site. The NRC staff recognizes the dynamic nature of Lake Erie and the Great Lakes, and will consider the possibility of continued change in the ecosystem in its assessment. Existing conditions will be described in Chapter 2 of the EIS. The impacts of construction and operation on aquatic ecosystems and water quality will be discussed in Chapters 4 and 5 of the EIS. The cumulative impacts of construction and operation will be presented in Chapter 7 of the EIS.*

Comment: Western Lake Erie and its shallow waters provide among the best habitat for walleye fishing in the world. The thermal load of a new reactor sited at Fermi (as well as

existing facilities at Fermi and Davis-Besse east of Toledo, Ohio) would have a detrimental effect on this habitat. This can be mitigated by the construction of new cooling tower at the Fermi facility. However, the current plans for Fermi do not envision this construction, and would perhaps make the construction of this new facility cost-prohibitive. (**0038-2** [D'Amour, James Carl])

Response: *The proposed design for the Fermi 3 nuclear plant identifies the construction of a new cooling tower on the Fermi site. The NRC staff will assess potential impacts to aquatic biota in Lake Erie, including the walleye and other fish species, from thermal discharge of the proposed Fermi 3 nuclear plant in Chapter 5 of the EIS. The cumulative impacts of construction and operation will be presented in Chapter 7 of the EIS.*

Comment: And I wish that the Environmental Impact Statement would include the following considerations, which when I reviewed it [Environmental Report], it did not.

Also, the Maumee Bay estuary was not delineated in the Environmental Impact Statement. The impact statement used Fermi 2 data, which are very outdated, for accumulative fish impingement and entrainment impacts from the plant. (**0058-47** [Bihn, Sandy])

Comment: When the permit for Davis Bess was granted, the Ohio Sea Grant people made the following statement: No new plants (power) should be constructed anywhere in the Western Basin of the Lake (Erie). If these suggestions are followed, new plants can be constructed on Lake Erie Without harming the valuable and growing fishery. J.M. Reutter and C.E. Herdendorf, Environmental Impact Appraisal of the Davis Besse Nuclear Power Plant 1979

Since the statement clearly says that no new power plants should be constructed in Western Lake Erie, then the only place that new power plants should be considered would be in the Central and Eastern Basins of Lake Erie. The Fermi 3 nuclear power plant is planned to be located in the shallowest, fishiest waters of Lake Erie and the Great Lakes. Lake Erie has more consumable fish than all the other Great Lakes combined and a majority of Lake Erie's fish are in the Western Basin of Lake Erie(which includes Maumee Bay and the Maumee River). The average depth of Lake Erie in the area of the plant is but 24' and the average depth of the Maumee Bay estuary is only 5'. The proposed Fermi 3 nuclear power plant would draw up to 49 million gallons of water a day from Lake Erie and Maumee Bay and kill millions more fish. Fermi 3 would be the 6th power plant killing more fish and heating more water causing Western Lake Erie Waterkeeper Western Lake Erie Association westernlakeerie.org added ecological impacts on already stressed green waters. When I was driving down traveling on Bayshore Rd. last night, I could visibly see the Consumer's Whiting Plant, the DTE Monroe Plant, Fermi 2, First Energy Bayshore and the smoke from Davis Besse. Obviously, the plants are within a 20 mile radius and the use of the water, fish kills and thermal plumes from the power plants impact the shallow waters of Lake Erie and Maumee Bay. (**0082-10** [Bihn, Sandy])

Comment: The application says there are no estuaries near the plant. This is not true. The shallow fishy average 5' depth Maumee Bay estuary exists west of the plant and needs to be assessed as part of the environmental impact study. (**0082-12** [Bihn, Sandy])

Response: *The EIS analysis will use the most recently available information about aquatic biota and water quality to characterize the existing conditions in the vicinity of the Fermi site and to analyze potential impacts from the project on the aquatic ecosystem. The staff will also review historical data, including past recommendations related to power development in the western basin of Lake Erie, in its review. Existing conditions will be described in Chapter 2 of the EIS. The impacts of construction and operation (including impacts associated with impingement, entrainment, and thermal discharge) will be discussed in Chapters 4 and 5, respectively. The cumulative impacts of construction and operation will be presented in Chapter 7 of the EIS. Information about the conditions in Maumee Bay and potential impacts to Maumee Bay from the proposed project will be evaluated, as appropriate, in the EIS.*

Comment: One statement in the Environmental Impact Statement [sic - Environmental Report] that really stood out to me was that there is no phosphorus problem in Western Lake Erie, and we have no algae problem. Let me tell you folks, go out there in the summer. Last year researchers tell me that the microcystis in the algae was the worst that they've ever seen. We're going back to the `70s in terms of warm water, decreasing water caused by decreasing water level and increased nutrients in the water, the impact of lower water levels and increased nutrients. And what would happen from this plant doing more warming of the water to those factors needs to be considered.

There is a new algae out there called *Lyngbya wollei* that seems to be harbored here in the Monroe area. And we need to look at what the impact of that is and why it came, and then how this new plant might contribute more to those type of algae. (**0058-52** [Bihn, Sandy])

Comment: A new form of algae - *Lyngbya wollei* - is in Maumee Bay and Western Lake Erie. This benthic algae is spreading in Maumee Bay and Western Lake Erie. It appears that the *Lyngbya* thrives in what is known at Warm Water Bay at DTE's Monroe coal fired 1.9 billion gallons per day warm water discharge. The warm water combined with the sewage from the River Raisin appear to provide the ideal environment for *Lyngbya* to thrive. What will the impact of Fermi 3 be on the spread of *Lyngbya*? Should DTE be required to do mitigation at the Monroe coal fired plant because of the *Lyngbya* problem? (**0082-21** [Bihn, Sandy])

Response: *The NRC staff will consider potential effects of the proposed facility on water quality in Lake Erie and the potential influences of construction and operation of the proposed facility on the spread of Lyngbya wollei. These topics will be discussed in Chapters 4 and 5 of the EIS.*

Comment: The environmental assessment must address the effects on the Lake and ecosystem of the water cooling needs of the reactor. The current report does not address the projected scientific reality of dramatically lower water levels in Lake Erie. (**0059-49** [Wolfe, Joan])

Comment: The environmental assessment must address the effects on the lake and ecosystem of the water cooling needs of the reactor. The current report does not address the projected scientific reality of dramatically lower water levels in Lake Erie. (**0083-3** [Wolfe, Joan])

Response: *The NRC staff will consider water use (including consumptive water use) relative to the inflow and volume of water for Lake Erie and the western basin. The effects of water levels in Lake Erie will also be considered in the analysis. Existing conditions will be described in Chapter 2 of the EIS. The impacts of construction and operation will be discussed in Chapters 4 and 5, respectively. The cumulative impacts of construction and operation will be presented in Chapter 7 of the EIS.*

Comment: Endangered Species Act: No species listed by NMFS as threatened or endangered, or species proposed for listing occur in Lake Erie. Additionally, there is no critical habitat designated by NMFS in the area and no proposed critical habitat in the area. There are also no candidate species under NMFS jurisdiction that occur in the project area. As such, no further coordination with NMFS on the effects of the action on listed species or their critical habitat is necessary and NMFS does not anticipate the need for consultation pursuant to Section 7 of the Endangered Species Act of 1973, as amended, for the subject Federal action. (**0085-1** [Colligan, Mary A.])

Comment: As noted above, as no species listed as threatened or endangered by NMFS occur in the action area, no consultation pursuant to Section 7 of the ESA is necessary for the NRC's proposed action. Based on the information provided herein, NMFS does not anticipate participating in the public meeting or site audit. Additionally, we do not anticipate providing further scoping comments or comments on any draft or final EIS related to this action. NMFS appreciates the opportunity to provide the NRC with information on our trust resources and we look forward to continuing to work cooperatively with you on minimizing impacts of NRC actions to NMFS trust resources. (**0085-3** [Colligan, Mary A.])

Response: *The NRC staff will evaluate the potential impacts on threatened and endangered species from construction and operation of the proposed Fermi 3 nuclear plant in Chapters 4 and 5 of the EIS. As stated in the comment, no species listed as threatened or endangered by the National Marine Fisheries Service (NMFS) occur in the action area, and no consultation with the NMFS pursuant to Section 7 of the Endangered Species Act (ESA) will be necessary for the proposed action.*

Comment: Essential Fish Habitat and Fish and Wildlife Coordination Act: The Magnuson-Stevens Fishery Conservation and Management Act (MSA) and the Fish and Wildlife

Coordination Act require Federal agencies to consult with one another on activities that may adversely impact fisheries resources and their habitats. Since Essential Fish Habitat has not been designated, pursuant to the MSA, for species in Lake Erie or other Great Lakes there is no requirement to consult under that authority. Although anadromous fish resources and their habitats may be impacted by the activity, NMFS does not have sufficient staff resources to engage in the review or consultation on this activity pursuant to the Fish and Wildlife Coordination Act. (**0085-2** [Colligan, Mary A.])

Response: *As stated in the comment, Essential Fish Habitat has not been designated, pursuant to the Magnuson-Stevens Fishery Conservation and Management Act, for species in Lake Erie or other Great Lakes. Therefore, no consultation on Essential Fish Habitat will be conducted for the Fermi 3 project.*

Comment: Toxic discharges from Fermi 3 would threaten Lake Erie's fragile ecosystem. Biocides, such as chemicals used to control zebra mussels, would be used in significant quantities and then released into Lake Erie. Cleaning solvents, heavy metals, and even fossil fuels integral to Fermi 3's operations would also be released into Lake Erie. Over a decade ago, the U.S.-Canadian International Joint Commission called for the virtual elimination of toxic chemicals into the Great Lakes, a goal Fermi 3 would not meet. Lake Erie, already suffering from phosphorus contamination and risking a return of algal blooms and consequent dead zones, is too fragile for yet another large-scale source of significant toxic contamination. (**0050-15** [Kamps, Kevin])

Comment: Also in the chemical area, the Zebra Mussel control and how's that accomplished. I presume there's chemicals involved in that. Zebra Mussels have shut down nuclear plants. I'm thinking of one article I read about in New York. (**0058-109** [McArdle, Ed])

Response: *Potential effects of chemical releases on aquatic resources, including biocides used to control organisms such as zebra mussels that can foul cooling water systems, will be evaluated in Chapter 5 of the EIS.*

D.1.10 Comments Concerning Socioeconomics

Comment: In addition to being a good corporate citizen, DTE Energy is a very substantial piece in the Michigan economic puzzle. As noted earlier in this text, I am the Chair of the SEMCA Workforce Board. SEMCA is officially designated by the State of Michigan to serve as the Michigan Works Agency for Monroe and Wayne Counties, excluding the city of Detroit, under the Federal Workforce Investment Act (WIA). As a Michigan Works Agency, our primary responsibility is to assist the residents of our region with obtaining employment. To help them achieve employment in high demand occupations and/or growing industries, we utilize State and Federal resources to provide them with the funding for relevant training. In the current changing economy, our workforce has experienced a substantial loss of jobs and we find that

their current skills may not match those needed in the jobs that are currently available. Consequently, the unemployment rate in our region is at a 20 year high, with Monroe Co. at 9.6%. Wayne Co. incl. Detroit at 10.6% and Lucas Co. Ohio, incl. Toledo at 9.2%. It is in this context that I provide the following to you today. I am strongly urging the NRC to include in the scope of the Environmental Impact Statement for the Fermi 3 Nuclear Power Plant a full analysis of the economic benefits of constructing and operating such a plant in our region. (**0010-2** [Mahoney, Charlie])

Comment: The jobs created by Fermi 3 would be a significant boost to this region and state during the construction phase, the Nuclear Energy Institute estimates that 2,400 construction jobs would be created. And they say a plant of this size would require DTE to add 700 permanent employees. And we know how real these jobs are: DTE currently has about 2,000 employees in Monroe Co. alone. None of these figures speak to the tremendous # of spin-off jobs created by the businesses that would serve the plant and its employees. Before I close, let me reassure you that this region knows the importance of providing our workforce with the skills necessary to obtain employment in the energy industry. Many of our laid-off workers have work experience or skills that make them ideal candidates for retraining in energy industry occupations. As I am sure you will hear in the testimony of others, Monroe Community College and other institutions are involved in energy occupation training and continue to work with DTE and others to assure their programs are responsive to the specific current and future needs of the energy industry. To this end DTE Energy and Monroe Community College have joined to create a program for a Nuclear Engineering Technology Associates Degree which began this month. And we at SEMCA place a high priority on encouraging careers in the energy field and providing training funding for appropriate candidates. (**0010-4** [Mahoney, Charlie])

Comment: Now that there's a proposal for a Fermi 3 to be built, this will open many job opportunities for our community. (**0058-112** [Ellison, Jacob])

Comment: If the plant comes to fruition it will add jobs and further economic enhancement in all areas of distress in the County. (**0058-113** [Smolinski, Myron])

Comment: The construction of another unit at Fermi would benefit the whole community, with hundreds of good paying jobs. These jobs contribute millions of dollars to the local economy. And a badly needed revenue source for our local and state governments, so that they may continue to provide the services that we have come to expect. This will affect all business, from the grocery store, restaurant, the gas station, the car dealer, and the landlords with housing to rent. Building another unit at Fermi would be a win for everyone in the community. (**0058-146** [Sweat, Ron])

Comment: A new nuclear plant would benefit the economy with an influx of good paying jobs for skilled workers and well educated professionals. The five-year construction phase would

alone create as many as 2,400 jobs. Then when the plant begins operation, 400 to 700 permanent high-tech jobs would be produced, many of which require professional degrees.

In addition, a new nuclear plant would create another 400 to 700 jobs and businesses that supply goods and services to support the plant. Many of these businesses would be the high-tech that we would need, and they're going to attract the bright, young professionals who are at the core of the most vibrant economics in the County today. (**0058-15** [Mentel, Floreine])

Comment: Finally, Detroit Edison's significant investment in a new nuclear plant would stabilize the local tax base, which has been battered by falling home prices and industrial losses. The average nuclear plant generates total state and local tax revenue of almost $20 million each year. (**0058-16** [Mentel, Floreine])

Comment: The other thing, certainly we all support here in this community, regardless of our views about the types of energy production we would like to see in this country, are the long term, sustainable jobs, and the continued community participation that the development of this additional facility would bring to this community. (**0058-2** [Brown, George])

Comment: The economic values of such a project will benefit the entire State of Michigan that is enduring the worst economic conditions in the nation. This project, as did the Fermi 2 project, will inject a much needed infusion into our economy that will provide construction and operating employment; off premise support business; and employment opportunities. A much needed new industrial tax base that will provide for public services -- all important ingredients to better quality of life in Michigan and Monroe County. (**0059-1** [Zorn, Dale])

Comment: In the current transitioning economy our workforce has experienced a substantial loss of jobs, and finding that their current skills may not match those needed. Consequently the unemployment rate in our region is at 20-year highs with Monroe County at 9.6 percent, Wayne County, including Detroit, at 10.6 percent, and Lucas County, Ohio, including Toledo, at 9.2 percent. It is in this context that I appear before you today. I'm strongly urging the NRC to include in the scope of the Environmental Impact Statement for Fermi 3 nuclear power plant, a full analysis of the economic benefits of constructing such a plant in our region. From an energy perspective the proposed new plant would help assure that the energy needs of our region will be met for decades to come, and economic growth clearly cannot be sustained unless an adequate, reasonably priced energy supply is available.

Equally important, the jobs created by Fermi 3 would be a significant boost to this region and state. During the construction phase the Nuclear Energy Institute estimates that 2400 construction jobs would be created. And they say a plant of this size would require DTE to add 700 permanent employees. And we know how real these jobs are. DTE is a highly respected employer who currently has about 2,000 employees in Monroe County alone. None of these

figures speak to the tremendous number of spinoff jobs created by the businesses that would serve the plant and its employees.

Before I close, let me reassure you that this region knows the importance of providing our workforce with the skills necessary to obtain employment in the energy industry. Many of our laid off workers have work experience or skills that make them ideal candidates for retraining in energy industry occupations. As I am sure you will hear in testimony of others, Monroe Community College and other institutions, are already heavily committed to energy industry occupation training, and continue to work with DTE and others to assure their programs are responsive to the specific current and future needs of the energy industry. And we at SEMCA place a very high priority on encouraging careers in the energy field and providing training funding for appropriate candidates. In conclusion, as the NRC proceeds with the environmental impact analysis for this proposed plant, I implore you to include a comprehensive analysis of the potential economic benefits it will generate for Michigan and our region. This is clearly an essential component to assure balance in your final conclusions on the costs and benefits of the proposed plant. (**0059-23** [Pitoniak, Gregory])

Comment: Construction of another unit would provide hundreds of good paying jobs. These jobs contribute millions of dollars to the local economy, and provide a badly needed revenue source for our local and state governments, which in turn helps these government entities provide the services that we have come to rely on. Construction of another unit would affect all businesses in the community, from the grocery store to the restaurant to the gas station to the car dealers to the landlords that have vacancies to rent. (**0059-32** [Sweat, Ron])

Comment: A new nuclear power plant would benefit the economy with an influx of good paying jobs for skilled workers and well educated professionals. The five year construction phase would allow and create as many as 2400 jobs. Then when the plant begins operation, 400 to 700 permanent high tech jobs would be produced, many of which require professional degrees. And I know many people here have asked, my child can't find a job after they graduate from college. Here's the chance that they can stay in their hometown of Monroe, and find a job that pays well.

In addition, a new nuclear plant, with those 4 to 700 jobs and businesses that supply goods and services to support the plant. Many of these businesses would be the high tech ventures that are attractive to the bright, young professionals, who are at the core of the most vibrant economics in the County today.

Finally, Detroit Edison, with their investments in a new nuclear plant, would stabilize the local tax base, which has been battered by failing home prices and industrial losses. The average nuclear plant generates total state and local tax revenue of almost 20 million each year. (**0059-7** [Mentel, Floreine])

Comment: As the events of recent months have shown us all too clearly, the economy of southeast Michigan is suffering. Unemployment is nearing double digits, home foreclosures are at historic levels, property values declined by twenty (20) percent in 2008 and the Detroit auto companies, along with their suppliers, are struggling to survive.

The impacts are being deeply felt in the Monroe County area, which is reeling from announced job cuts at several of area industries and businesses, both large and small. Automotive Components Holdings is closing its Monroe operation, resulting in the elimination of 480 jobs. La-Z-Boy Incorporated has cut 60 jobs at its world headquarters. Holcim has announced the closing of its cement-making plant by mid-2009, eliminating 163 jobs, and most recently announced additional job reductions at the regional headquarters in the Village of Dundee. Another 140 people will be left jobless with the closing of International Paper operations in Monroe and Brownstown Township. Several smaller manufacturing companies have had to reduce their workforce due to cutbacks in the automobile industry and the local economic conditions.

Due to conditions such as these, many of our young people have to leave home to start out their careers in other areas of the country that are enjoying more robust economies. Our brightest and most earnest workers may well become Monroe County's largest export!

A new nuclear power plant would benefit our local economy with an influx of good paying jobs for skilled workers and well educated professionals. These new employment opportunities would assist us to keep our young people right here in Monroe County and strengthen our family units. The five (5) year construction phase would alone create as many as 2,400 jobs and when the plant is in operation 400-700 permanent high-tech jobs would be created, many of which require professional degrees.

In addition, a new nuclear plant would generate another 400-700 jobs in businesses that supply goods and services to support the plant. Many of these businesses would be the high-tech, entrepreneurial ventures that are attractive to the bright, young professionals who are at the core of the most vibrant economies in the country today.

Monroe County must change and adapt to these economic realities by developing new industry and business opportunities that grow out of innovation and new technology. Bringing to fruition the potential plans by Detroit Edison to pursue the construction of a new nuclear power plant on the site of Fermi 2 may well be a bridge to that future.

Finally, the possibility of Detroit Edison making a significant investment in a new nuclear plant would help stabilize the local tax base, which has been battered by falling home prices and losses of local industries and businesses. A new nuclear power plant would help our municipalities sustain, and in some cases restore, the level of services expected by their constituents. Providing these new employment opportunities may well serve to help preserve our family unity. (**0082-36** [Morris, William P.])

Comment: Should the licensing process lead to a decision of building another nuclear plant, our local and state economy will benefit by some $430 million annually through the increased sales of goods and services from the plant's operation as it filters through our local economy. It will also add an additional $40 million annually in total labor income that will be spent in our communities. The EDC recognizes that this is a rare and unique opportunity that other communities could only dream about. We therefore fully support DTE's license application and stand ready with anticipation to assist the process in any way possible. (**0082-42** [Oberleiter, Tracy])

Comment: In the current changing economy, our workforce has experienced a substantial loss of jobs and find that their current skills may not match those needed in the jobs that are currently available. Consequently, the unemployment rate in our region is at 20 year highs, with Monroe Co. at 9.6%. Wayne Co. incl. Detroit at 10.6% and Lucas Co. Ohio, incl. Toledo at 9.2%. It is in this context that I provide the following to you today. I am strongly urging the NRC to include in the scope of the Environmental Impact Statement for the Fermi 3 Nuclear Power Plant a full analysis of the economic benefits of constructing and operating such a plant in our region. (**0083-18** [Pitoniak, Gregory])

Comment: The jobs created by Fermi 3 would be a significant boost to this region and state during the construction phase, the Nuclear Energy Institute estimates that 2,400 construction jobs would be created. And they say a plant of this size would require DTE to add 700 permanent employees. And we know how real these jobs are: DTE currently has about 2,000 employees in Monroe Co. alone. None of these figures speak to the tremendous # of spin-off jobs created by the businesses that would serve the plant and its employees.

Before I close, let me reassure you that this region knows the importance of providing our workforce with the skills necessary to obtain employment in the energy industry. Many of our laid-off workers have work experience or skills that make them ideal candidates for retraining in energy industry occupations. As I am sure you will hear in the testimony of others, Monroe Community College and other institutions are already heavily into energy occupation training and continue to work with DTE and others to assure their programs are responsive to the specific current and future needs of the energy industry. And we at SEMCA place a high priority on encouraging careers in the energy field and providing training funding for appropriate candidates. (**0083-20** [Pitoniak, Gregory])

Response: *The EIS will evaluate the expected economic impacts of construction and operation activities including any local purchasing of construction and production inputs, local and in-migrating labor, local spending of earnings, and tax revenues generated by local purchasing activities or from real property assessments. This information will be presented in Chapters 4 and 5 of the EIS.*

Comment: It was recently reported that a new Wind Turbine manufacturing plant will be locating to the Monroe County area adding new jobs. Many new Solar panel plants are moving to Michigan for alternate energy production, which could also locate in the Monroe area. Also, the job requirements for running a nuclear power plant are for very highly skilled workers with special training from outside the area which would do nothing to the advantage of the unemployed and displaced auto workers. (**0041-6** [Englund, Lance])

Response: *The comment refers to other energy-related activities that are proposed for Michigan and Monroe County and that could contribute to cumulative socioeconomic impacts. Potential cumulative impacts will be discussed in Chapter 7 of the EIS. In addition, the EIS will evaluate the economic impacts of construction and operation of the proposed Fermi 3 plant, including local and in-migrating labor, in Chapters 4 and 5 of the EIS.*

Comment: And also the fact sheet from GE Hitachi. Notice that GE is headquartered in Schenectady, New York. The Hitachi is in Japan, and so how many local jobs does that mean? I don't know.

Also, keep in mind that there's only one manufacturer in the world that makes a reactor vessel, and that is Japan Steel. They can only make, according to Blumberg News, four per year, and they have a multi-year backlog, and a company has to plunk down $100 million to get in the line. So even if this is approved, it could be a long time coming, and in the meantime we could all be out of a job, so. (**0058-104** [McArdle, Ed])

Comment: In terms of jobs, where would those jobs actually be associated with Fermi 3? GE Hitachi, the originator of the ESBWR design, is a Japanese corporation. Fermi 3's reactor pressure vessel, and other large components, would likely be manufactured at Japan Steelworks, which is one of the only facilities on the planet that can make such large nuclear components. (**0059-75** [Kamps, Kevin])

Response: *The EIS will evaluate the expected economic impacts of construction and operation activities including local and in-migrating labor and any local purchasing of construction and production inputs. This information will be presented in Chapters 4 and 5 of the EIS. Some purchases of construction and production inputs will be outside the local area, and these inputs will be identified in Chapter 4.*

Comment: I love to hike and spend most of my free time in the outdoors, and I guess I'd ask the NRC to consider the needs of outdoor recreationalists in the environmental impact review. One of the aspects that I don't think has been mentioned tonight is the aesthetic issue with nuclear power plants. These things, however clean they may be, they look pretty jarring when you see them. If you grew up in Monroe you know what it's like to navigate by power plant stacks and cooling towers, and I'm just wondering if there's a way to make the nuke plant, Fermi 3, look better and more in line with the green aspects of the shoreline. (**0059-79** [Ingels, Mike])

Comment: One other aspect is social justice. Monroe County provides a lot of the power for Southeast Michigan. It's a working class town. We do a lot of things here. We work hard and we provide power to places like Ann Arbor and Bloomfield Hills and all these great places that don't have power plants. And I'd ask that something be given to Monroe to really soften the impact of that, because, you know, again, our shoreline I really think is our future, and I think every power plant we put there is a little bit of an obstacle to presenting our County as a green place and I think maybe some people don't live here and don't site their businesses here because they see the brown streak across the sky. (**0059-81** [Ingels, Mike])

Response: *The EIS will evaluate the physical impacts of the construction and operation of the proposed plant on the visual aesthetics of the area in Chapters 4 and 5 of the EIS. Measures to mitigate the physical impacts will also be discussed in those chapters.*

Comment: I live directly across Swan Creek from DTE Energy Fermi II Nuclear Power Plant and have a full view of one cooling tower staring me in the face every day. If DTE Energy builds another cooling tower where proposed, I will have two cooling towers staring me in the face. This additional cooling tower will have a negative impact on my residential property value. Also, if DTE Energy adds a third nuclear reactor, that means they have increased the size of the plant by 33%, adding a 33% increase for potential accident, further having a negative impact on residential property value. I feel DTE Energy should be required to conduct a near-plant property value impact study in an attempt to determine property value declines as a result of the plant expansion. (**0074-1** [Scobie, Randall])

Response: *The NRC staff will evaluate the effects of the construction and operation of the proposed Fermi 3 plant on local property values in Chapters 4 and 5 of the EIS, based on an analysis of existing studies.*

D.1.11 Comments Concerning Historic and Cultural Resources

Comment: On January 8, 2009, the Advisory Council on Historic Preservation (ACHP) received from the Nuclear Regulatory Commission (NRC) a notification pursuant to Section 800.8(c) of the ACHP 's regulations, Protection of Historic Properties (36 CFR 800), regarding the referenced project. We appreciate receiving your notification. which establishes that NRC

will use the process and documentation required for the preparation of an EA/FONSI or an EIS/ROD to comply with Section 106 of the National Historic Preservation Act in lieu of the procedures set forth in 36 CFR 800.3 through 800.6.

In addition to notification to the ACHP, NRC must also notify the Michigan State Historic Preservation Officer and meet the standards in Section 800.8(c)(I)(i)through (v) for the following:

identifying consulting parties;

involving the public;

identifying historic properties and assessing the undertaking's effects on historic properties: and consulting regarding the effects of the undertaking on historic properties with the SHPO/THPO, Indian tribes and Native Hawaiian organizations that might attach religious and cultural significance to affected historic properties, other consulting parties, and the ACHP, where appropriate during NEPA scoping, environmental analysis, and the preparation of NEPA documents.

To meet the requirement to consult with the ACHP as appropriate, the NRC should notify the ACHP in the event NRC determines, in consultation with the SHPO/THPO and other consulting parties, that the proposed undertaking(s) may adversely affect properties listed, or eligible for listing, on the National Register of Historic Places (historic properties). In addition, Section 800.8(c)(2)(i) requires that you submit to the ACHP any DEIS or EIS you prepare. Inclusion of your adverse effect determination in both the DEIS/EIS and in your cover letter transmitting the DEIS/EIS to the ACHP will help ensure a timely response from the ACHP regarding its decision to participate in consultation. Please indicate in your cover letter the schedule for Section 106 consultation and a date by which you require a response by the ACHP.

The regulations do not specifically require that an agency submit an EA to the ACHP. However, keep in mind that, in the case of an objection from the ACHP or another consulting party, Sections 800.8(c)(2)(ii) and (c)(3) provide for ACHP review of an EA (in addition to a DEIS or EIS) to determine whether preparation of the EA, DEIS or EIS has met the standards set forth in Section800.8(c)(I)and/or to evaluate whether the substantive resolution of the effects on historic properties proposed in an EA, DEIS or EIS is adequate.

If NRC's determination of adverse effect will be documented in an EA, we request that you notify us of the adverse effect and provide adequate documentation for its review. The ACHP's decision to review an EA, DEIS or EIS will be based on the applicability of the criteria in Appendix A of the ACHP's regulations. Thank you for your notification pursuant to Section 800.8(c). (**0044-1** [Vaughn, Charlene Dwin])

Response: *Consultation in compliance with the Advisory Council on Historic Preservation's (ACHP's) regulations, Protection of Historic Properties (36 CFR Part 800), will be discussed in Chapter 2 of the EIS. Historic and cultural resources, including historic properties as defined in 36 CFR 800.16(1), will be discussed in Chapter 2 of the EIS. Impacts to and mitigation measures for historic and cultural resources, including historic properties as defined in 36 CFR 800.16(1), will be discussed in Chapters 4 and 5 of the EIS.*

Comment: Figure 2.1-2 illustrates a 7.5 mile Radius around the Fermi Unit 3 vicinity. This radius encompasses a number of Heritage Resource Sites in the Coastal Zone of Monroe County, MI.

CULTURAL. Monroe Harbor is classified as a Working Waterfront (US Army Corps of Engineers).

HISTORICAL. River Raisin Battlefield (National Park Service). (**0082-29** [Micka, Richard])

Comment: Within the 7.5 miles Radius of Fermi Unit 3, the US Fish & Wildlife Service has established an International Wildlife Refuge, the NPS operates the Motor Cities National Heritage Area (Map attached) and is exploring the establishment of a National Battlefield that would be connected to the North Country National Scenic Trail near Fort Meigs in Perrysburg, Ohio. The US Army Corps of Engineers, Detroit District, operates a Confined Disposal Facility on the St. Lawrence Seaway at Pie-Movillee. This is exciting news. The COLA (ER) should be updated to reflect these initiatives and the Applicant should join in the effort to create a Center for Regional Excellence built on the Energy Industry in the Lake Erie West Region! (**0082-32** [Micka, Richard])

Response: *Historic and cultural resources, including historic properties as defined in 36 CFR 800.16(1), will be discussed in Chapter 2 of the EIS. Impacts to and mitigation measures for historic and cultural resources, including historic properties as defined in 36 CFR 800.16(1), will be discussed in Chapters 4 and 5 of the EIS.*

D.1.12 Comments Concerning Health – Non-Radiological

Comment: In regards to health issues: ...cooling tower reservoirs and thermal discharges can act to harbor or accelerate some etiologic agents that ultimately affect human health once released into the environment. These etiological agents include, but are not limited to, the enteric pathogens Salmonella spp., Vibrio spp. and Shigella spp., and Plesiomonas shigelloides, as well as Pseudomonas spp., toxin-producing algae such as Karenia brevis, noroviruses, and thermophilic fungi. Etiological agents also include the bacteria Legionella spp., which causes Legionnaires' disease, and free-living amoebae of the genera Naegleria, Acanthamoeba, and Cryptosporidium. Exposure to these microorganisms, or in some cases the

endotoxins or exotoxins produced by the organisms, can cause illness or death. Thermo-stable viruses are also considered etiological agents and are subject to review for this impact analysis.

These etiological agents could prove very costly to human health if there were an inversion and there was a mix of smog and fog. This needs to be examined. (**0051-5** [Cumbow, Kay])

Response: *The health impacts of etiological agents as related to Fermi 3 operations will be addressed in Chapter 5 of the EIS.*

D.1.13 Comments Concerning Health – Radiological

Comment: In this regard, you may wish to take note of a number of reports issued by the IJC that touch on these matters. For your convenience, these are identified below:

Reports in 1977, 1983 and 1987 reviewed radioactivity in the Great Lakes Basin.

In 1994, the Seventh Biennial Report on Great Lakes Water Quality recommended that radionuclides which meet the definition of persistent toxic substance be included in the governments' strategy for virtual elimination.

In 1996, the Eighth Biennial Report on Great Lakes Water Quality devoted a section to radioactive substances and recommended that the use and storage of radioactive materials and nuclear wastes be addressed under the Great Lakes Water Quality Agreement.

In 1997, the Nuclear Task Force established by the DC in 1995 to review and assess the status of radioactivity in the Great Lakes issued a report on the sources of various radioactive isotopes as well as the movement and distribution of radionuclides.

Also in 1997, a report entitled The IJC and the 21st Century devoted a section to nuclear issues.

In 1998, the Ninth Biennial Report on Great Lakes Water Quality included three recommendations with respect to radioactivity.

In 2002, the Eleventh Biennial Report had a full chapter entitled Nuclear Issues.

The foregoing reports and others may be accessed on the IJC's website at www.ijc.org. If assistance is required, your staff is invited to contact Frank Bevacqua, IJC Public Information Officer, who may be reached at: bevacquaf@washington.ijc.org or 202-736-9024. (**0015-2** [Lawson, Charles, Ph.D.])

Comment: The IJC, the International Joint Commission for the Great Lakes for the U.S. and Canada said in 1978, that there are some substances that are so toxic that they should not be

produced in the Great Lakes basin. In the early 1990's, the IJC acknowledged that there are radionuclides that meet the definition of persistent toxins, and that they recommended to the governments of the U.S. and Canada that they phase out all of those radionuclides that met that definition. And the definition is, any toxin that bioaccumulates and has at least a half life of eight weeks in water. That would shut down every single nuclear power plant in the Great Lakes basin. (**0058-19** [Cumbow, Kay])

Comment: In this regard, you may wish to take note of a number of reports issued by the IJC that touch on these matters. For your convenience, these are identified below:

-Reports in 1977, 1983 and 1987 reviewed radioactivity in the Great Lakes Basin.

-In 1994, the Seventh Biennial Report on Great Lakes Water Quality recommended that radionuclides which meet the definition of persistent toxic substance be included in the governments' strategy for virtual elimination.

-In 1996, the Eighth Biennial Report on Great Lakes Water Quality devoted a section to radioactive substances and recommended that the use and storage of radioactive materials and nuclear wastes be addressed under the Great Lakes Water Quality Agreement.

-In 1997, the Nuclear Task Force established by the IJC in 1995 to review' and assess the status of radioactivity in the Great Lakes issued a report on the sources of various radioactive isotopes as well as the movement and distribution of radionuclides.

-Also in 1997, a report entitled The IJC and the 21st Century, devoted a section to nuclear issues.

In 1998, the Ninth Biennial Report on Great Lakes Water Quality included three recommendations with respect to radioactivity. In 2002, the Eleventh Biennial Report had a full chapter entitled Nuclear Issues." (**0071-2** [Lawson, Ph.D., Charles])

Response: *The comments refer to a number of reports issued by the IJC on the water quality of the Great Lakes Basin. These reports will be considered when evaluating the health impacts of Fermi 3 operations in Chapter 5 of the EIS.*

Comment: Nuclear reactors routinely release millions of curies of radioactive isotopes into the air and water each year unreported and unmonitored. The Nuclear industry does not regulate these radioactive elements because they consider them biologically inconsequential. These radioactive releases include the noble gases Krypton, Xenon and Argon. They emit gamma radiation, which can mutate the genes in the eggs and sperm and cause genetic mutations. (**0019-3** [Schemanksi, Sally])

Comment: In the areas around nuclear power plants are the people monitored through doctors for health effects of the nuclear releases? Nuclear power never was too cheap to meter was always so very dangerous to life and will outlive all generations of humanity. (**0031-5** [Rysztak, Robert])

Comment: Even the regular releases of nuclear power plants, radio-active isotopes, have ill effects on the fish, the animals and the people. High cancer rates run nationwide. (**0032-3** [Rysztak, Robert])

Comment: Who studies the effects of radiation in the Great Lakes region? Who studies the health of the people in the cities of the nuclear power plants? Are they monitored in comparison to people in non-nuclear power plant areas? (**0032-5** [Rysztak, Robert])

Comment: The pollution resulting from a nuclear power plant is unacceptable and is dangerous to the health of too many citizens. (**0034-2** [Nett, Ann C.])

Comment: The geographic region is the state's most-populated, and the proposed Fermi III project would be placing residents of two states and Canada in jeopardy, in the immediate region, from the potential of uncontrolled nuclear reactions, as well as proximity to storage of spent radioactive waste. (**0039-2** [Mitchell, Rita])

Comment: Routine radioactivity releases from Fermi 3 would harm human health. Even new reactors like Fermi 3 will release significant amounts of radioactivity directly into the environment. These would include so-called planned and permitted releases from the reactor's routine operations, as well as unplanned releases from leaks and accidents. Atomic reactors are designed to release radioactive liquids and gases into the air, water, and soil, which can then bio-concentrate in the ecosystem and human bodies. Liquid releases, which at Fermi are discharged into Lake Erie, include tritium, which can incorporate into the human biological system, even down to the DNA level. Once organically bound, tritium can persist in the human body for long periods, emitting damaging radioactive doses. Tritium can cross the placenta from mother to fetus. Current radiation health standards are not protective of women, children, nor fetuses. The Institute for Energy and Environmental Research has launched a campaign called Healthy from the Start, which urges NRC, EPA, and other agencies to protect the more vulnerable Reference Pregnant Woman from such radioactive hazards as tritium, rather than Reference Man as is currently done. The State of Colorado has instituted a tritium regulation 40 times stronger than the federal standard; California has a 50-fold stronger standard. Michiganders deserve equally strong protection. (**0050-6** [Kamps, Kevin])

Comment: Many radionuclides released routinely by nuclear plants bioaccumulate and bioconcentrate in the food chain, and these should all be accounted for. (**0051-7** [Cumbow, Kay])

Comment: Tritium is a very important isotope that is routinely emitted in large quantities into the air and waste water from nuclear power plants. Tritium, which is radioactive for 248 years is released continuously from reactors into the air and into lakes, rivers, or seas - depending upon reactor location. There is vast literature on the biological effects of tritium demonstrating that it causes chromosomal breaks and aberrations. (Helen Caldicott, Nuclear Power Is Not the Answer). What studies are being done on the long term effects of tritium which cannot be filtered out and is released in the form of radioactive water vapor or water. What are the levels of tritium in the air and the drinking water of Monroe County? (**0055-2** [Guthrie, Patricia])

Comment: All nuclear power plants release radionuclides into the air and into the water. Some are planned releases; some are not planned by either leaks or accidents. Radioactive emissions are quite insidious because normally, under normal circumstances, people cannot sense them with their senses. They can't smell them, they can't taste them, they can't -- you need expensive equipment to detect them, and nuclear power plants do not have to have to keep -- they don't do monitoring on a 24/7 basis. They don't monitor through all their vents. There's a lot of ways that radioactive waste can get out. (**0058-24** [Cumbow, Kay])

Comment: Atomic reactors are designed to release radioactive liquids and gases into the air, water, and soil. Gaseous releases include Xenon 135, a noble gas which quickly decays into Cesium 135, which then falls out onto the soil and surface waters. Cesium is readily taken up by the human body, where it lodges in muscle tissue such as the heart. (**0058-34** [Yascolt, Stas])

Comment: I have taught radiation science in college, and I'm on the National Radiation Committee for the Sierra Club. But that's not really the reason that I am here today, because I think everybody knows that radiation exposure is bad for us. I have all the --even though I was very careful when I was working, I have all the medical problems that are associated with excess radiation. (**0058-40** [Simpson, Robert])

Comment: I know the horrible nightmare of a cancer diagnosis. Living under the shadow of that debilitating, painful, and life threatening disease, it is becoming an epidemic. To expose a population to the threat of that disease is a crime. Dr. Sternblast, who is doing a large project to analyze radioactive elements stored in baby teeth, is convinced that more than any other factor, radiation is the cause of the cancer epidemic. Main radiation factors include fallout and nuclear reactor emissions. Nuclear reactors create radiation. The worst scenario is a large explosion such as Chernobyl. However, nuclear reactors routinely omit radiation into the atmosphere by way of releases that is gaseous and thermal. Since, like pesticides, radiation is bio accumulative, and enviro accumulative, there is no safe measure for repeated emissions and exposures. Like pesticides, radiation is carcinogenic and mutagenic. It is also teratogenic, and it is a feticide. (**0059-12** [Barnes, Kathryn])

Comment: Radioactive elements cause cancer. (**0059-18** [Barnes, Kathryn])

Comment: The environmental assessment must address the well known health effects of both low level and catastrophic radioactive emissions from nuclear power plant operation. (**0059-48** [Wolfe, Joan])

Comment: we would not have the environmental problems that we have today with -- wait, I thought everybody said the deer were nice on that park. Well, deer don't know that they are dying and getting cancer. They do. There are environmental costs that are largely unseen, they are very quiet. But because there are deer walking around in a park doesn't mean that it's benign. We know from study after study. The very first ones which were done were really done in Hiroshima and Nagasaki. The results of radiation are dramatic, life-ending, and terrible. (**0059-58** [Wolfe, Robert])

Comment: I have become aware of the dangers of radioactive gases (Iodine 131) that are regularly flushed into the atmosphere by the Nuclear Power Plant yet permitted by NRC, and dismissed as noble gases and therefore chemically inert. However, scientists have indicated that they actively decay to daughter isotopes. Does living near a nuclear power plant increase the exposure to Iodine-131? Would this risk increase with an added nuclear plant? Are the annual Fermi II Iodine-131 releases still among the highest among US reactors? Are there any recent studies in this regard available? (**0065-1** [Diederichs, Dorothy])

Comment: I am concerned about the radioactive gases which are actively flushed into the atmosphere. Planned Purges are officially permitted by the NRC so that utility operators can decrease the intensely radioactive environment into which maintenance workers must enter. Older reactors are allowed twenty-two purges per year during cold shutdown.

What studies have been done on the impact of these planned purges on pregnant women and children and the elderly, many of whom have a weakened immune system? Will construction of Fermi III increase the risk of exposure to harmful radioactive substances? (**0068-1** [Walby, Charlotte])

Comment: Dr. Helen Caldicott lists numerous dangerous, carcinogenic elements produced by nuclear power plants:
-Iodine 131, which bio-concentrates in leafy vegetables and milk and can induce thyroid cancer
-Strontium 90, which bio-concentrates in milk and bone, and can induce breast cancer, bone cancer and leukemia
-Cesium 137, which bio-concentrates in meat, and can induce a malignant muscle cancer called a sarcoma
-Plutonium 239, which can cause liver cancer, bone cancer, lung cancer, testicular cancer and birth defects. (**0081-1** [Ryan, Janet])

Comment: What are the health impacts of adding another nuclear power plant to our community? (**0081-4** [Ryan, Janet])

Comment: The environmental assessment must address the well-known health effects of both low-level and catastrophic radioactive emissions from nuclear power plant operation. (**0083-2** [Wolfe, Joan])

Comment: I know the horrible nightmare of a cancer diagnosis. Living under the shadow of that debilitating, painful, and life threatening disease is becoming an epidemic. To expose a population to the threat of that disease is a crime. Dr. Sternglass, who is doing a large project to analyze radioactive elements stored in baby teeth, is convinced that more than any other factor, radiation is the cause of the cancer epidemic. Main radiation factors include fallout and nuclear reactor emissions. Nuclear reactors create radiation. The worst scenario is a large explosion such as Chernobyl. However, nuclear reactors routinely emit radiation into the atmosphere by way of releases -- i.e. gaseous and thermal. Since, like pesticides, radiation is bio accumulative, and enviro accumulative, there is no safe measure for repeated emissions and exposures. Like pesticides, radiation is carcinogenic and mutagenic. It is also tetrogenic and is a feticide. (**0083-22** [Barnes, Kathryn])

Response: *The comments refer to human health effects of radiological releases from nuclear power plants. In Chapter 5 of the EIS, the NRC staff will evaluate human health impacts of effluent releases from the operation of the proposed Fermi 3 plant.*

Comment: The 1993 accident at Fermi 2 and subsequent release of radio-active water into Lake Erie in 1994 was not a good thing. How many similar releases of radiation can our waterways stand before they become radio-active? (**0032-4** [Rysztak, Robert])

Comment: Large-scale accidental tritium leaks into groundwater in Illinois, that had been covered up for a decade by the nuclear utility and state environmental agency, were uncovered in early 2006 by a concerned mother whose daughter had contracted brain cancer at age 7. A cluster of rare childhood brain cancers were then documented in the community of Morris, Illinois, home to three atomic reactors and a high-level radioactive waste storage facility. The scandal led to the revelation of widespread accidental tritium releases nationwide at almost all atomic reactors. (**0050-7** [Kamps, Kevin])

Comment: Incredibly, Fermi 1 experienced an accidental release of thousands of gallons of tritium-contaminated water in 2007, 35 years after the reactor had been permanently shut down! The nearby Davis-Besse reactor also recently admitted tritium leaks into the environment. (**0050-9** [Kamps, Kevin])

Comment: Liquid releases, which at Fermi are discharged into Lake Erie, include tritium, which is radioactive hydrogen. Tritium flows wherever water flows. It is prohibitively expensive to filter out. So, NRC allows it to be released into the environment. Tritium can incorporate into the human biological system even down to the DNA level. Once organically bound, tritium can

persist in the human body for long periods, emitting dangerous, damaging, radioactive doses. Tritium can cross the placenta from mother to fetus. (**0058-35** [Yascolt, Stas])

Comment: Large scale accidental tritium leaks into groundwater in Illinois have been covered up for a decade by the nuclear utility and state environmental agency. They were uncovered in early 2006 by a concerned mother, whose daughter had contracted brain cancer at age 7. A cluster of rare childhood brain cancers were then documented in the community of Morris, Illinois, home to three nuclear reactors and a high level radioactive waste storage facility. The scandal led to a revelation of widespread accidental tritium releases nationwide at almost all atomic reactors. These are the documented ones. We don't know about the undocumented ones. (**0058-36** [Yascolt, Stas])

Comment: Accidents at atomic reactors can lead to a large scale release of harmful radioactivity into the environment. For instance, right here at the poster child for anti-nuke, right here at Fermi, we had the Fermi 2 turbine disintegrated in 2007. Now, it seems incredible that it could happen, but actually this brought about a release of radioactive water.

I can't believe that it happens, as many safeguards that are built in, but these things do happen. It seems impossible, but it did happen, right here. On top of that, this also happens to be the place, the site that we have the example of Fermi 1, the sodium reactor. And there actually was a release, believe it or not, in 2007, of water on the decommissioning of Fermi 1. I believed for years and years that it was a problem that was long solved. It continues on, the legacy. We are to leave this to our children, our grandchildren, our great-grandchildren, for generations, for thousands of years. (**0058-37** [Yascolt, Stas])

Response: *The comments refer to potential accidental radiological releases. In Chapter 5 of the EIS, the NRC staff will evaluate human health impacts from radiation exposure during operation of the proposed Fermi 3 unit, including unanticipated operational occurrences. Chapter 5 also will evaluate the risks associated with postulated reactor accidents.*

Comment: They will be dangerous virtually forever. In June 2005, the National Research Council found that scientific evidence shows that exposure to radiation at even barely detectable doses can cause DNA damage that leads to cancer. There is no safe dose of exposure to radiation, no matter how small. In Monroe County, the cancer death rate has jumped from 2% above the U.S. in the early 1980s [when no reactors operated] to 10% above the U.S. in this decade. Cancer mortality in children who are most susceptible to radiation soared from 39% below the U.S. to 58% above the U.S.

Dr. John Gofman, one of the world's foremost radiation researcher has spent over fifty years on the study of low-level radiation. A physician and doctor of nuclear/physical chemistry, Dr. Gofman co-discovered uranium-233 and isolated the world's first workable plutonium for the Manhattan Project. . He concludes: There is no safe dose or dose-rate of ionizing radiation with

respect to the induction of human cancer. It would be impossible for low total doses of ionizing radiation, received slowly from routine occupational environmental sources, to be less carcinogenic than the same total doses received acutely. There is very strong support in the direct human evidence for recognizing that the cancer risk is probably more severe per dose unit at low doses than at moderate and high doses.

The nuclear industry does not have the technical ability to keep exposure to zero. They allow workers to be irradiated at so called allowable levels and the public to be poisoned at allowable levels. They continue to spread the myth that there is a safe dosage. Past estimates of safe levels have been continuously underestimated. In 1910, safe allowable exposure was thought to be 100 rems per year for workers; today it is 5 rems per year. The British National Radiological Board has lowered its permissible levels to 2 rems. A study published in 1991, in the Journal of the American Medical Association reveals the occurrence of leukemia is 63% higher among white male atomic workers at Oak Ridge National Laboratory than among all U.S. white males. Most of the workers in the study received total radiation doses of less than 1 rem total exposure throughout their entire employment. (**0019-8** [Schemanksi, Sally])

Comment: I am concerned about the potential long-term health risks (specifically for children) posed by living close to two nuclear power plants. When the nuclear industry calculates "acceptable" radiation exposure for the public, it uses a model of a standard, healthy 150 pound man. But the population is far from homogeneous. Old people, immuno-depressed patients, normal children and some with specific, inherited diseases are many times more susceptible to the deleterious effects of radiation than normal adults. (Helen Caldicott, Nuclear Power Is Not the Answer)

In the only attempt federal officials have made to examine cancer rates near U.S. nuclear plants, a study published in the European Journal of Cancer Care found that Leukemia death rates in U.S. children near nuclear reactors rose sharply (vs. the national trend) in the past two decades. The greatest mortality increases occurred near the oldest nuclear plants, while declines were observed near plants that closed permanently in the 1980s and 1990s. (European Journal of Cancer Care. 17(4):416-418, July 2008. MANGANO, JOSEPH; SHERMAN, JANETTE D.)

Given these factors, how can we be assured that increasing nuclear power generation in Monroe County does not put our children at risk? Does the Nuclear Regulatory Commission have any processes in place to assess this risk?
(**0036-1** [Nash, Sarah])

Comment: As confirmed for the seventh time by the U.S. National Academy of Sciences in 2006 in its Biological Effects of Ionizing Radiation report (BEIR VII), every exposure to radiation increases the risk to human health. Radioactivity can damage tissues, cells, DNA and other

vital molecules, potentially causing programmed cell death (apoptosis), genetic mutations, cancers, leukemias, birth defects, and reproductive, immune, cardiovascular and endocrine system disorders. (**0050-11** [Kamps, Kevin])

Comment: the first thing that comes to mind is a baseline for radiation and other pollution exposure to air, land, water, sediment, fish, wildlife, and incorporating not just the Great Lakes, but the Detroit River, Raisin River, Swan Creek, where there is potential for plant uptake or food chain bioaccumulation of radiation or other pollutants that has already occurred from Fermi 1, Fermi 2. And before you can make an estimate of a modeling of how much would occur from a potential Fermi 3. (**0058-106** [McArdle, Ed])

Comment: BEIR 7, which was published in 2005 by the National Academy of Sciences, they reconfirmed that there is no safe threshold for human health for exposure to radiation. In the fall of this year, the Committee to Bridge the Gap, they discovered that EPA was in the process of gutting, secretly, radiological protections standards for the U.S. (**0058-22** [Cumbow, Kay])

Comment: As confirmed for the seventh time by the U.S. National Academy of Sciences in 2006, every exposure to radiation increases the risk to human health. Radioactivity can damage tissues, cells, DNA, and other vital molecules, potentially causing program cell death, apoptosis, genetic mutations, cancers, leukemias, birth defects, and reproductive immune cardiovascular and endocrine system disorders.

Among the many environmental concerns surrounding nuclear power plants, there is one that provokes public anxiety like no other, the fear that children living near nuclear facilities face an increased risk of cancer. The carcinogenic effects of radioactive exposure are most severe among infants and children. Leukemia is the type of childhood cancer most closely associated with exposures to toxic agents, such as radiation, and has been most frequently studied by scientists.

In the U.S., childhood leukemia incidents has risen 28.7 percent from 1975 to 2004. According to CDC data, suggesting that more detailed studies on causes are warranted. I would like to bring several of the recent studies as short as possible. The first one I am referring to is the one done by epidemiologist Joseph Mangano, Director of the Radiation and Public Health Project, and toxicologist Jeannette Sherman, who is a Medical Doctor of the Environmental Institute at Western Michigan University. They analyzed leukemia deaths in children under 19 years of age. In the 67 counties located near 51 nuclear power plants, starting from 1957 until 1981, so from `57 to `81 it's referring when the nuclear power plants were started.

The same counties have been also studied in a NCI study. About 25 million people live in these 67 counties, and the 51 plants represent nearly half of the U.S. total. Using mortality statistics from the U.S. Centers for Disease Control and Prevention, Mangano and Sherman found that in

1985 to 2004, the change in local child leukemia mortality versus the U.S. average, compared to the earliest years of reactor operations were as follows: An increase of 13.9 percent near nuclear plants started in the year `57 until 1970, so-called oldest plants, so an increase of almost 14 percent near oldest nuclear plants. I'm talking about children leukemia death rates. An increase of 9.4 percent near nuclear plants started in `71 until `81, an increase of 9.4 percent in children living near newer nuclear power plants. And a decrease of 5.5 percent near nuclear plants started in `57 until `81 and later shut down. So we have a decrease in children leukemia deaths, 5.5 percent of decrease if the children were living nearby to a shutdown nuclear plant.

The conclusion that the author made is the13.9 percent rise near the older plant suggests a potential of great effect of greater radioactive contamination near aging reactors, while the 5.5 percent decline near closed reactors suggest a link between less contamination and lower leukemia rates. The large number of child leukemia deaths in the study, like there were 1,292 children who died of leukemia during the study, makes many of the results of the study statistically significant. (**0058-28** [Pfeiffer, Jelica B.])

Comment: So there are valuable studies that can support our study that I just presented, and reaction of German government and British government, how seriously they are taking those U.S. studies now. And based on it I'm calling for a moratorium of not issuing more permits for new nuclear reactors because there's still too many questions to be answered and more studies to be done.

Another point, reason for moratorium, is the fact that EPA has no regulations in place limiting the presence of radioactive elements in our air, water, and soil. So we want to give a bit of time to EPA to come to those standards.

Third point: Considering the high vulnerability to radiation in our children and pregnant women, the reference, man, should be changed to reference, pregnant woman. (**0058-29** [Pfeiffer, Jelica B.])

Comment: I am concerned about the impact that another nuclear power plant would have on those with compromised immune systems. What studies have been done on the cumulative low levels of radiation on pregnant women, children and the elderly? Can you assure us that the construction of Fermi III will not effect the health of those with compromised immune system? (**0060-1** [Petrak, IHM, Genevieve])

Comment: I am particularly concerned about the health risks of nuclear power. How can you assure us that building of Fermi III is safe for us and especially for our pregnant mothers and their unborn children? Scientific research tells us that there are no safe levels of exposure to radioactive substances. Can you assure us that the building of a new nuclear power plant will not impact in a negative way the health of our citizens. (**0063-1** [Bell, Mary Faith])

Comment: The thing about radiation is you can't see it or smell it so it is difficult to provide evidence of its presence as a pollutant. But it does accumulate in body tissue and may cause damage to the structure of DNA.

The National Academy of Science's National Research Council in its report on the health effects of radiation exposure, states that the preponderance of scientific evidence shows that exposure to radiation, at even barely detectable doses, can cause DNA damage that leads to cancers, especially in fetuses and children. There is no threshold of exposure below which low levels of ionizing radiation can be demonstrated to be harmless or beneficial. The health risks, particularly the development of solid cancers in organs, rise proportionately with exposure?[2]

What is not fully appreciated is that these chemicals do not do their worst damage by exposing people to radiation in the environment. Rather the real damage is done through ingesting them through breathing, drinking and through the food chain, especially through fresh milk and other dairy products, concentrating in key organs like the lung, thyroid, bone marrow and the female breast. These internal radiation doses are especially harmful to infants in the womb, children and older people with weaker immune systems.

[2] BEIRVII: Health Risks from Exposure to Low Levels of Ionizing Radiation , National Academies Press, 500 Fifth Street, NW, Washington, DC 20001; (**0083-13** [Mumaw, Joan])

Response: *The comments refer to the health effects of exposure to low levels of radiation, the BEIR VII report (Health Risks from Exposure to Low Levels of Ionizing Radiation), and the cancer statistics in the areas surrounding nuclear power plants. The NRC staff will evaluate human health impacts of radiation exposure from the operation of the proposed Fermi 3 nuclear plant in Chapter 5 of the EIS. The NRC staff will also discuss the dose standards used in the assessment.*

Comment: Given Fermi 3's inevitable radiological and toxic releases, drinking water intakes from Lake Erie must be required to constantly monitor contaminants in order to adequately protect public health. NRC should address the synergistically harmful health impacts due to human exposures to radioactivity and toxic chemicals. (**0050-16** [Kamps, Kevin])

Response: *This comment relates to the possible synergistic effect of chemicals and radiation and the cumulative impacts of the proposed Fermi 3 plant. The NRC staff will evaluate cumulative impacts from the operation of the proposed Fermi 3 plant in Chapter 7 of the EIS.*

Comment: **T**he rising cancer death rate in Monroe County is 45% above the U.S. average. Apparently there is a link to the fact that all reactors routinely emit over 100 radioactive chemicals into air and water that are known carcinogens. (**0047-5** [Bettega, Gayle])

Comment: Fermi 2's operations are correlated with local increases in cancer rates and other diseases, a radioactive health risk that Fermi 3 would make even worse. Janette Sherman, MD of the Environmental Institute at Western Michigan University published Childhood Leukaemia Near Nuclear Installations in a recent edition of the European Journal of Cancer Care. Using mortality statistics from the U.S. Centers for Disease Control and Prevention, Sherman examined data from 1985-2004 and determined that when measured against background levels in the rest of the U.S., leukemia rates have increased for children that live near nuclear reactors. She found an increase of 13.9% near nuclear plants started up between 1957-1970 (oldest plants); an increase of 9.4% near nuclear plants started up between 1971-1981 (newer plants); and a decrease of 5.5% near nuclear plants started up between 1957-1981 and later shut down.

Joe Mangano of the Radiation and Public Health Project has documented that in the early 1980s, before Fermi 2 began operating in 1988, the Monroe County cancer death rate was 36th highest of 83 Michigan counties. But by the early 2000s, it had moved up to 13th highest. From 1979-1988, the cancer death rate among Monroe County residents under age 25 was 21.2% below the U.S. rate. But from 1989-2005, when Fermi 2 was fully operational, the local rate was 45.5% above the U.S. rate. The energy efficiency and renewable alternatives to Fermi 3 do not involve such radioactive health risks. (**0050-13** [Kamps, Kevin])

Comment: Fermi 1 was a fast breeder reactor, which was supposed to produce more fuel in the form of Plutoniuum-239 (Pu-239) than it used of Uranium-235. Glenn Seaborg, co-discoverer of Pu-239, described it as "fiendishly toxic".

The nuclear industry promotes reprocessing (they like to call it "recycling") high level radioactive "spent" fuel to extract Pu-239 for more fuel. Pu-239 has a radioactive half-life of 24,000 years and a hazardous-to-health life of 240,000 years.

Many years ago experiments were done on young adult beagles. They were injected with small doses of Pu-239. They died from bone cancer. If they inhaled Pu-239 the dogs died of lung cancer (Science, February 22, 1974). Extrapolating to humans, a millionth of an ounce would have the same effect.

The British Ministry of Health has reported finding Pu-239 in children's deciduous (baby) teeth. The concentration increased the closer they lived to the Sellafield reprocessing plant indicating that the plant was the source of Pu-239.

In France Pu-239 has been found on the Normandy beach. A reprocessing plant is located on the English Channel upstream at LaHague. An increase in childhood cancer has been reported in children who visited the beach frequently (British Medical Journal, January 11, 1997).

The German Federal Radiation Protection Agency, the government's advisor on nuclear health, concluded that children under the age of 5 years were more likely to develop leukemia if they lived near a nuclear power plant. Germany plans to close all 16 nuclear power plants by 2020. (**0054-3** [Drake, Gerald A.])

Comment: I am concerned about the impact that Fermi III will have on the health of residents of Monroe County and environs, especially those whose immune system would make them susceptible to a variety of damaging effects.

The elderly, immuno-depressed patients, normal children, and some with specific, inherited diseases are many times more susceptible to the deleterious effects of radiation than normal adults. Overall, about forty-two people out of a hundred are expected to develop cancer in their lifetimes from all causes. (Helen Caldicott, Nuclear Power Is Not the Answer) (**0055-1** [Guthrie, Patricia])

Comment: We have radioactive releases from nuclear power plants in the Great Lakes Basin handout that anyone who lives in this area should see. Do you really want your kids to have brain tumors, birth defects, cancers, leukemia, and reproductive immune, cardiovascular and endocrine system disorders? I hope not. (**0058-86** [Anderson, Alan])

Comment: My concerns regarding the impact of the building of a new nuclear power plant on the site at Fermi 2 focus on the environment and the health of the community of Monroe. While DTE intends to minimize environmental impacts, routine releases will occur in both liquid and air emissions. Current radiation health standards, as used by the EPA and the NRC are referenced to healthy men. The reference man is a statistical model. He dates to 1974, but he's perpetually aged between 20 and 30 years old. He weighs 170 pounds, stands 5 feet 7 inches, and hails from Western Europe or North America. And, he represents everyone in the US when it comes to setting regulations for acceptable standards of exposure to ionizing radiation.

What about pregnant women, children, and the frail elderly? What studies have been done on the effect of sustained low level radiation in fetuses, children, and the elderly, who have weakened immune systems? This is of special concern to us because we have 180 elderly residents at the IHM Sisters Mother House which is within the Fermi environmental zone, the 10 miles.

Routine radioactive discharges by nuclear power plants are deemed legal and judged to be safe by the NRC and the industry. Some of this is so radioactive it is stored onsite. Any loss of cooling water from mechanical failure or terrorist attack would cause a catastrophe. Routine releases of lower level radioactive chemicals into the water are done in order to relieve pressure in the containment area and to limit the presence of radioactive and corrosive chemicals that damage reactor parts. The discharge for Fermi is very close to the water supply for the City, and for Frenchtown Township. Not all radioactive isotopes can be filtered from the water prior to its release.

Fermi 2, after an accident on Christmas Day in 1993, released over a million gallons of radioactively contaminated water into Lake Erie. Other chemical releases are made into the air. By breathing in radiation from the air or drinking water that is contaminated, we ingest these chemicals. They in turn release fast moving subatomic particles into our bodies that smash into and break molecules causing cancer, birth defects and genetic mutations. Radioactive iodine aims for the thyroid. Strontium goes for the bones, and tritium behaves like water, dispersing throughout the body and entering cells where it can disrupt the DNA. Tritium cannot be filtered out. What studies have been done on the long term effect of tritium, which is released into the air and water by nuclear power plants? (**0059-41** [Mumaw, Joan])

Comment: The thing about radiation is you don't see it or smell it, so it's difficult to provide evidence of its presence as a pollutant. But it does accumulate in body tissue and may cause damage to the structure of DNA. The National Academy of Sciences National Research Council, on its report on health effects of radiation exposure, states that the preponderance of scientific evidence shows that exposure to radiation at even barely detectible doses over long periods of time, can cause DNA damage that leads to cancer, especially in fetuses and children.

What is not fully appreciated is that chemicals do not do their worst damage by exposing people to radiation in the environment. Rather, the real damage is done through ingesting them through breathing, drinking, and through the food chain, especially through fresh milk and other dairy products, concentrating in organs like the lung, thyroid, bone marrow, and the female breast. These internal radiation doses are especially harmful to infants in the womb, children, and older people with weaker immune systems.

In Monroe County the cancer death rate is 10 percent above the national average. Cancer mortality in children, who are most susceptible to radiation, soared from 21 percent, the average in the 1980's, to 45 percent above the national average in 2005. What studies have been done in Monroe County on the incidences of cancer, especially in children, and its possible causes? This is of concern to us as Sisters, many of whom have spent several years in Monroe studying and teaching in local schools. And several of our women are currently undergoing treatment for cancer.

Health and the environmental policies have long observed the precautionary principle. The principle developed at the Wingspread conference in 1998 asserts that before using a new technology or starting a new activity, there is a duty to take anticipatory action to prevent harm. It also declares that responsibility for the proof of harmlessness rests with the proponent rather than the public. Can you, DTE, and the NRC, assure us that Fermi 3 will be safe? Can you assure us that the health of the community is not being and will not be compromised by the inevitable release of radioactive contaminants into air and water?

Please do not rush to build an expensive and quite possibly harmful nuclear reactor until all the heath issues are studied by independent researchers and the public is informed of any risk. (**0059-43** [Mumaw, Joan])

Comment: I've been in contact with an eminent epidemiologist, Joseph Mangano. He works with the Radiation and Public Health project. His work is reviewed by several MDs, several PhDs, biostatisticians.

The following is a statement by Joseph J. Mangano. Joseph Mangano, Masters Public Health, Masters of Business Administration, is Director, Secretary, and Executive Director of the Radiation and Public Health Project. Mr. Mangano is a public health administrator and researcher and has studied the connection between low dose radiation exposure and subsequent risk of disease, such as cancer, and damage to newborns. He has published numerous articles and letters in medical journals in addition to books, including low level radiation and immune systems disorders, and atomic air legacy. Here he examines the connection between radiation exposure and current widespread health problems. He cites the rising local cancer rates, suggests a link between the Fermi 2 reactor and cancers. January 14th, 2009, the cancer death rate in Monroe County has been rising since the late 1980's when the Fermi 2 nuclear reactor began operating according to this new analysis. The rising cancer has been sharpest among children and adolescents who are most susceptible to the harmful effects of radiation exposure. The analysis uses official data from the US Centers for Disease Control and Prevention. The increasing cancer rate death among Monroe County residents, especially young people, suggest a link with radioactive chemicals emitted from the Fermi reactor, says Joseph J. Mangano, MPH, MPA, Executive Director of the Radiation Public Health Project.

Because Monroe County has a low risk population that is well educated, high income, and has few language barriers, rising cancers are unexpected and all potential causes should be investigated by health officials.

Fermi 2 reactor began operating June 21st, 1985, and went commercial January 1988. However, it ran very little after the initial low power startup. The 1998 startup was the full commercial operation. In the early 1980's the Monroe County cancer death rate was 36th

highest of 83 Michigan counties. By early 2000 it had moved up to 13th highest. From 1979 to 1988, pre-Fermi, the cancer death rate for Monroe County residents under 25 years of age was 21 percent below the US rate. But from 1989 to 2005, when Fermi 2 was fully operational, the local rate was 45.5 percent above the US national average.

All nuclear reactors produce electricity by splitting uranium atoms which creates high energy needed to heat water. This process all creates over 100 radioactive chemicals not found in nature, including strontium 90, cesium 137 and iodine 131. While most of these chemicals are retained in reactors and stored as waste, a portion is routinely released in the local air and water. They enter human bodies through breathing and the food chain, and raise cancer risk by killing and injuring cells in various parts of the body. They are especially harmful to children.

The findings come at a time when a new reactor has been proposed at the Fermi plant. The original Fermi 1 reactor, which was a site of a partial core meltdown accident in 1966, shut down permanently in 1972, and I might add, was taken apart by the pipefitters of Local 671. Of a work force of 39, 35 died within a few years of taking it apart, from cancers of the organ. Please check your data and go back to your records. Data on cancer risk from Fermi radioactive emissions. The Fermi 2 reactor is located in Monroe County and started in 1985, now commercial in '88. Monroe County has no obvious cancer risk. It has high income, low poverty, well-educated population with few language barriers and access to excellent healthcare in nearby major cities. Thus, an increase in cancer is unexpected. This change should be investigated and one potential cause should be ruled out from radioactive emissions fr (**0059-64** [Keegan, Michael])

Comment: I'm just amazed that after listening to Michael Keegan talk about the higher cancer rates since Fermi's been running -- I mean we're talking cancer, we're talking people dying. I heard people talk about babies dying and pregnant women losing their babies. And then other people talk about they are supporting Fermi 3 because Detroit Edison helps with the Science Fair. And I don't mean to be rude, but we're talking cancer. We're talking waste that is deadly for two millenniums plus. And they don't know what to do with it. They're talking cancer. And then other people have come up shown that there's more jobs if we chose alternative energy. So I don't understand any of the reasoning to support Fermi 3, causes cancer and not as many jobs. So I guess -- you know, I've come to a million anti-Fermi meetings and I rarely talk. But it's like, come on, think about it. We're talking cancer, high rates of cancer in Monroe County. You know? Yeah, we're a company town. They've done a good job of selling their plant and supporting the Red Cross and the United Way and the schools. We're talking cancer. (**0059-88** [Meyers, Marcie])

Comment: I am concerned about the impact of radiation exposure on the elderly, immunosupressed persons, children, and the population in general in Monroe County. It seems quite peculiar that Monroe's mortality rate is above that of Michigan for the years 2000-2005, all

cancers combined (ICD-10 codes COO-D48.9). Will the NRC be asking the Health Department to investigate this discrepancy? And how can we be assured that increasing nuclear power generation does not put our citizens, especially children and young adults at risk? Thank you for giving serious consideration to these issues before moving forward with plans to build Fermi 3. (**0067-1** [Duggan, Marion])

Comment: The people of Monroe do not need more risks to healthy living. (**0070-3** [Karas, Josephine])

Comment: I. Recent Essential Facts on Health Hazards of Nuclear Generating Reactors

1. Thus U.S. National Academy of Sciences has confirmed in 2006, for the seventh time, conclusive evidence that every exposure to radiation increases the risk to human health. Radioactivity can damage tissues, cells, DNA and other vital molecules, potentially causing programmed cell death (apoptosis), genetic mutations, cancers, leukemias, birth defects and reproductive, immune, cardiovascular and endocrine system disorders.

2. Among the many environmental concerns surrounding nuclear power plants, there is one that provokes public anxiety like no other: the fear that children living hear nuclear facilities face an increased risk of cancer. In fact, the carcinogenic effects of radiation exposure are most severe among infants and children. Leukemia is most closely associated with exposures to toxic agents such as radiation, and has been most conclusively studied by scientists. In the U.S., childhood leukemia incidence has risen 28.7% from 1975 to 2004, according to CDC data, suggesting that more detailed studies on causes are warranted.

3. The November, 2008 issue of the European Journal of Cancer Care published a US study of children living near nuclear plants. The authors are epidemiologist Joseph Mangano, MPH MBA, Director of the Radiation and Public Health Project and Janette Sherman, MD, of the Environmental Institute at Western Michigan University. They analyzed leukemia deaths in children ages 0-19 in the 67 counties near 51 nuclear plants from 1957-1981. Nearly 25 million people live in these counties, and the 51 plants represent nearly half of the U.S. total. Using mortality statistics from the U.S. Centers for Disease Control and Prevention, Mangano and Sherman found that in 1985-2004, the change in local child leukemia mortality (v. the US) compared to the earliest years of reactor operations were:

-An increase of 13.9% near nuclear plants started 1957-1970 (the oldest plants, still operational).

-An increase of 9.4% near nuclear plants started 1971-1981 (newer plants).
-A decrease of 5.5% near nuclear plants started 1957-1981 and later decommissioned.

The 13.9% rise in mortality rates near the older plants suggests a potential effect of greater radioactive contamination near aging reactors, while the 5.5% decline near closed reactors suggests a link between less contamination and lower leukemia rates. The large number of child leukemia deaths in the study (1292) make the results statistically significant.

4. Before Mangano and Sherman's study, a 2007 meta-analysis was published in the European Journal of Cancer Care by researchers from the Medical University of South Carolina. That report reviewed 17 medical journal articles on child leukemia rates near 136 reactors, and found that all 17 detected elevated rates. These were nuclear sites in the UK, Canada, France, Germany, Japan, Spain and the USA. The incidence of leukemia in children under 9 living close to the sites showed an increase of 14 to 21 per cent, while death rates from leukemia were raised by 5 to 24 percent, depending on their proximity to the nuclear facilities (European Journal of Cancer Care, vol 16,p 355). This study updates, with largely consistent findings, an analysis conducted in the late 1980s by the National Cancer Institute (NCI). That analysis, mandated by Senator Edward M. Kennedy (D-MA), is the only attempt that US federal officials have made to examine cancer rates near US nuclear plants.

5. In addition are two new KiKK studies conducted by German researchers of the University of Mainz (KiKK is a German acronym for Childhood Cancer in the Vicinity of Nuclear Power Plants), whose results were published in 2008 in the International Journal of Cancer (vol 122, p 721) and the European Journal of Cancer (vol 44, p 275). These found higher incidences of cancers and a stronger association with nuclear installations than all previous reports. The main findings reported a 60 percent increase in solid cancers and a 117 percent increase in leukemia among young children living near all 16 large German nuclear facilities between 1980 and 2003. The most striking finding was that those who developed cancer lived closer to nuclear power plants than randomly selected controls. Children living within 5 kilometers of the plants were more than twice as likely to contract cancer as those living farther away. This finding has been accepted by the German government as definitive. This indicates twice as many cases of leukemia among children living near nuclear power plants.

The German federal agency for irradiation protection has called the study a significant argument against nuclear power. “Given the particularly high risk of nuclear radiation for children, and the inadequacy of data on the emissions of nuclear power plants, we must take the correlation between distance of residence and high risk of leukemia very seriously,” Wolfram Koenig, director of the agency, stated at a press conference.

The Mainz findings are consistent with others in France and Britain. In France, one such study in 1997, and another in 2001, showed a higher incidence of leukemia among children living near nuclear power plants.

6. The 1997 French study, led by Jean Francois Viel, Professor of public health at the France Comte University, 300 km east of Paris, found that children frequenting the beaches at Cotentin on the Atlantic coast near the nuclear power plant of La Hague, or living within a radius of 35 km of the plant, suffered leukemia well above the national average.

Another French study from 2001 by Alfred Spira, of the National Institute of Health and medical Research, confirmed Viel's results. Spira, who had first rejected the results of Viel's study, later changed his opinion when he found a disproportionately high number of cases of leukemia among people below 25 years old and living within 35 km of La Hague. When the sample studied was narrowed to children ranging from 5 to 9 years old, living within 10 km of the nuclear facility, the cases of leukemia were 6.38 times the national average.

7. A British study from 2002 confirmed an older one from 1990 showing that the incidence of leukemia among children of workers at the Sellafield nuclear power 400 km north of London was twice the national average. Investigation by Heather Dickinson and Louise Parker from the Children's Cancer Research Unit at the University of Newcastle confirmed the earlier results. Using data from 1957 to 1991, the researchers found that children of workers at Sellafield were more likely to suffer leukemia and non-Hodgkins lymphoma (NHL, a group of cancers affecting the white blood cells) that the national average. In their study, Dickinson and Parker conclude that the Sellafield workers' children born in Seascale (the village near the Sellafield nuclear reprocessing plant) ran on average 15 times higher risk of developing leukemia and NHL, and that the Sellafield workers' children outside Seascale ran twice the risk.

II. Discussion of Further Considerations

The findings reported in the 1980s and 1990s regarding leukemia clusters are again being repeated. A Report in 2004 by the Committee Examining Radiation Risks of Internal Emitters - 79 - set up by the UK government points out that the models used to estimate radiation doses from sources emitted from nuclear facilities are riddled with uncertainty. For example, assumptions about how radioactive material is transported through the environment or taken up and retained by local residents may be faulty.

If radiation is indeed the cause of the cancers detected, how might local residents have been exposed? Most of the reactors in the KiKK study were pressurized water designs notable for their high emissions of tritium, the radioactive isotope of hydrogen. Last year, the UK government published a report on tritium that concluded that its hazard risk should be doubled. Tritium is most commonly found incorporated into water molecules, a factor not fully taken into account in the report. So this could make it even more hazardous.

As we begin to pin down the likely causes of elevated cancer rates, the new evidence of an association between increased cancers and proximity to nuclear facilities support the following:

Pregnant women and young children should be advised to move away from them. Local residents should be advised not to eat vegetables from their gardens. (**0078-1** [Pfeiffer, Jelica B.])

Comment: In Monroe County, the cancer death rate is 10% above the national average. Cancer mortality in children, who are most susceptible to radiation, soared from 21% below the US average in the 1980s to 45% above the national average in 2005!3 What studies have been done in Monroe County on the incidence of cancer, especially in children, and possible causes? This is of concern to IHM Sisters, many of whom spent several years in Monroe studying and teaching in local schools. Several of these women are undergoing treatment for cancer.

3 US Centers for Disease Control and Prevention, http://cdc.wonder.gov, underlying cause of death (**0083-14** [Mumaw, Joan])

Comment: My concerns regarding the impact of the building of a new nuclear power plant on the site of Fermi II focus on the environment and the health of the community of Monroe. While DTE intends to minimize environmental impacts, routine releases will occur in both liquid and air emissions.

Current radiation health standards as used by the EPA and NRC are referenced to healthy men. The reference man is a statistical model. He dates to 1974, but he's perpetually aged between 20 and 30 years old. He weighs 170 pounds, stands 5 feet 7 inches and hails from Western Europe or North America. And he represents everyone in the United States when it comes to setting regulations for acceptable standards of exposure to ionizing radiation.1

What about pregnant women, children and the frail elderly? What studies have been done on the effect of sustained low-level radiation in fetuses, children and the elderly who have weakened immune systems? This is of special concern to us as there are 180 elderly residents at the IHM Sisters Motherhouse which is within the Fermi EPZ.

Routine radioactive discharges by nuclear power plants are deemed legal and judged to be safe by the NRC and the industry. These releases can include more than 100 different chemicals, including cesium-137, iodine-l31, strontium-90 and tritium. Some of this is so radioactive it is stored on site. Any loss of cooling water from mechanical failure or terrorist attack would cause a catastrophe. Routine releases of lower level radioactive chemicals into the water are done in order to relieve pressure in the containment area and to limit the presence of radioactive and corrosive chemicals that damage reactor parts. The discharge for Fermi is very close to the water supply for the county. Not all radioactive isotopes can be filtered from the water prior to its release.

Fermi II, after an accident at the reactor on Christmas Day, 1993, released over a million gallons of radioactively contaminated water into Lake Erie. Other chemical releases are made into the

air. By breathing in radiation from the air, or drinking water that is contaminated, we ingest these chemicals. They in turn release fast moving sub-atomic particles into our bodies that smash into and break molecules causing cancer, birth defects, and genetic mutations. Radioactive iodine aims for the thyroid, strontium goes for the bones and tritium behaves like water dispersing throughout the body and entering cells where it can disrupt DNA. Tritium cannot be filtered. What studies have been done on the long term effect of tritium which is released into the air and water by nuclear power plants?

1 Enszer, Julie R., 'Reference Man' May Lose Radioactivity Modeling Job, Women's E News, November 13, 2007. (**0083-8** [Mumaw, Joan])

Comment: The cancer death rate in Monroe County has been rising since the late 1980s, when the Fermi 2 nuclear reactor began operating, according to a new analysis. The rise in cancer has been sharpest among children and adolescents, who are most susceptible to the harmful effects of radiation exposure. The analysis uses official data from the U.S. Centers for Disease Control and Prevention.

The increasing cancer death rate among Monroe County residents, especially young people, suggests a link with the radioactive chemicals emitted from the Fermi reactor, says Joseph J. Mangano MPH MBA, Executive Director of the Radiation and Public Health Project research group. Because Monroe County has a low risk population that is well educated, high income, and has few language barriers, rising cancer rates are unexpected, and all potential causes should be investigated by health officials.

Fermi 2 reactor began operating June 21, 1985. However, it ran very little after the initial low-power start-up until a warranty run in January of 1988, marking the commercial start-up of the reactor. In the early 1980s, the Monroe County cancer death rate was 36th highest of 83 Michigan counties, but by the early 20005, it had moved up to 13th highest. From 1979-1988, the cancer death rate among Monroe County residents Sources:

Fermi 2 incurred near miss accidents on March 28, 2001 (emergency diesel generator was inoperable for over 7 days) and August 14, 2003 (loss of offsite power due to northeast blackout). Source: Greenpeace USA. An American Chernobyl: Nuclear Near Misses at U.S. Reactors Since 1986. www.greenpeace.org, April 26, 2006.

U.S. Centers for Disease Control and Prevention, http://cdc.wonder.gov, underlying cause of death. Death rates are adjusted to 2000 U.S. standard population. Includes ICD9 codes 140.0-239.9 (1979-1983) and ICD-IO codes COO-D48.9 (2000-2005). Whites account for over 95% of Monroe residents.

Cancer Death Rates, Monroe County vs. U.S. 1979-1988 and 1989-2005, age 0-24

	Monroe County		Deaths/100,000 Pop.		
Period	**Cancer Deaths**	**Avg. Pop.**	**Monroe**	**U.S.**	**%vs. US**
1979-1988	22	56,234	3.91	4.96	**-21.2%**
1989-2005	42	51,407	4.86	3.79	**+45.5%**

(**0084-1** [Mangano, Joseph])

Response: *The comments refer to the cancer statistics in the area surrounding the Fermi site and the health effects of radiation exposure. The NRC staff will evaluate human health impacts from radiation exposure from the operation of the proposed Fermi 3 plant in Chapter 5 of the EIS. Chapter 5 will also discuss the dose standards used in the assessment.*

D.1.14 Comments Concerning Accidents – Design Basis

Comment: The things that cannot be predicted are the only things that seemed to have happened that cause of grief. The turbine generator set at Fermi, when that happened and spilled a lot of water. I attended the St. Mary's meeting there with the water purification engineer for the plant, and it was very difficult to get across that this water, when it was to be discharged to the Lake, would be purer than the water of the Lake itself. I have been at Prairie Island, Donald C. Cook, Fermi 2, Prairie plant, over on the far end of the Lake, Marble Hill, the Clinton project. I was INPO Representative for Indiana Public Service. I've been at Three Mile Island two times after the accident writing procedures for those people, including radiological control and administrative procedures that had to do with control of chemicals and estimating. (**0058-125** [Meyer, Richard])

Comment: How many radioactive spills and shutdowns have taken place in U.S. nuclear power plants over the past 30 years? How likely or unlikely would new nuclear plants be to have such an accident? What would be the result? (**0081-2** [Ryan, Janet])

Response: *The comments refer to nuclear accidents and their consequences. The environmental impacts of postulated accidents will be evaluated, and the results of this analysis will be presented in Chapter 5 of the EIS. The impacts of past operation of Fermi 1 and 2, including accidental releases of radiologically contaminated materials, will be considered in Chapter 7 of the EIS.*

D.1.15 Comments Concerning Accidents – Severe

Comment: How do we stay safe? I live in the 1 mile red zone of that plant, I would hate to become a statistic. I can see the Davis Bessie plant across the lake on a clear day - I believe

the people who live it that area have to take iodine tablets, because of problems that have been discovered at the plant. Now every isn't 100% safe, but when something goes wrong at a nuclear plant it can have a wide range of health problems, environmental problems that can last for years and decades beyond the occurrence - Chernobyl. (**0013-2** [Sanchez, Mira])

Response: *The environmental impacts of postulated accidents (i.e., design basis and severe accidents) will be evaluated, and the results of this analysis will be presented in Chapter 5 of the EIS.*

Comment: The inevitable safety risks of accidents associated with Fermi 3 favor efficiency and renewables as safer alternatives. A 1982 NRC report showed that a major accident at Fermi 2 releasing catastrophic amounts of radioactivity could cause 8,000 peak early fatalities, 340,000 peak early injuries, 13,000 peak cancer deaths, and $136 billion in property damage. Given population growth since, casualties would be even worse in the present day. And when adjusted for inflation, such damages would now top $288 billion. Similar or even worse casualties and damages could result from an accident at the larger Fermi 3 reactor. In fact, untested new reactors with undetected technical glitches are at significantly increased risk of suffering a major accident. Fermi 1, Three Mile Island and Chernobyl were new reactors when they suffered their infamous accidents. Old reactors are also at elevated accident risk due to age-related breakdown of safety significant systems, as occurred at Davis-Besse nuclear plant near Toledo in 2002. Thus, the geriatric Fermi 2 and the brand new Fermi 3, immediately adjacent to one another, would represent the worst of both worlds, the extremes of atomic reactor risks. An accident at one could even spread to the other. (**0050-3** [Kamps, Kevin])

Response: *The EIS will include an evaluation of the risks associated with potential severe accidents including accidents that involve reactor core melts. The potential consequences of postulated design basis and severe accidents will be discussed in Chapter 5 of the EIS. The evaluation in the EIS will include an estimate of the cumulative risk of severe accidents for all units at the Fermi site.*

Comment: Accidents at atomic reactors can lead to the large-scale release of harmful radioactivity into the environment. For example, the turbine explosion at Fermi 2 reactor on Christmas Day, 1993 led to DTE's release of two million gallons of radioactively contaminated water into Lake Erie. A new reactor at Fermi will effectively double such accident risks: break in phase accident risks at the new Fermi 3 reactor, and break down phase accident risks at the deteriorated, old Fermi 2 reactor. (**0050-8** [Kamps, Kevin])

Response: *This comment refers to nuclear accidents and their consequences. The environmental impacts of postulated accidents will be evaluated, and the results of this analysis will be presented in Chapter 5 of the EIS. In addition, the evaluation will include an estimate of the cumulative risk of severe accidents for all units at the Fermi site.*

Comment: Even Fermi 1's melted down fuel from its 1966-we-almost-lost-Detroit accident, still sits in so-called temporary storage in Idaho. I thought I'd mention the Fermi 1 meltdown because John McCain didn't seem to know about it when he visited Fermi last August, and the Nuclear Energy Institute's top lobbyist in Washington, DC, in an interview on NPR radio, seemed to not know about that meltdown either. (**0058-71** [Kamps, Kevin])

Comment: The children of Hiroshima and Chernobyl are a tragic testament of the destruction of DNA by radiation. Workers at nuclear power plants face increased risks of exposure to radiation, especially when there are accidents.

Recent accidents have been the collapse of a road in Covert. A car fell through the road, broke cables, then washed downstream in the flooded Brandywine Creek. Embattled Palisades was left without communications while Verizon workers tried to sift through the ice, mud, and water to fix the severed cables. At DC Cook a rotor blade spun off, spilling fuel and causing a fire. Firemen spent hours trying to stop the blaze. That facility is shutdown and over 300 engineers are reportedly working on the problem. In Vermont a cooling tower collapsed.

The list of nuclear reactor problems is endless. Internal sabotage may be another issue. Palisades has had repeated incidents over the decade. Safety levers are glued down, and recently workers were locked in the reactor until the next shift arrived. Workers were unable to phone out for help. This is before the flooding incident. Fermi 3, and any other new nuclear reactors, may face internal problems. Even with employee screenings things can happen.

In the 1990's, the day they almost lost Detroit, Fermi had a near meltdown, and the plant was flooded with water to cool it. The contaminated water was released into Lake Erie, despite efforts to stop it. We are always a heartbeat away from Chernobyl. To think that cannot happen here is ignorance and arrogance.

At an environmental conference I attended, Dr. Helen Caldicott gave a dramatic slide show of the results of Three Mile Island. Nature has mutated. In the area surrounding the nuclear power plant, dandelions have three heads, animals were born with extra appendages, women miscarried. Nothing will ever be the same there. (**0059-13** [Barnes, Kathryn])

Comment: The children of Hiroshima and Chernobyl are a tragic testament to the destruction of DNA by radiation. Workers at nuclear power plants face increased risks of exposures to radiation, especially when there are accidents." Recent accidents have been the collapse of a road in Covert. A car fell through the road, broke cables, then washed downstream in the flooded Brandy-wine Creek. Embrittled Palisades was left (**0083-23** [Barnes, Kathryn])

Response: *These comments refer to nuclear accidents and their consequences. The environmental impacts of postulated accidents will be evaluated, and the results of this analysis*

will be presented in Chapter 5 of the EIS. The reference to Hiroshima is beyond the scope of the analysis in this EIS, and it will not be addressed in the EIS.

Comment: The 50 mile plume, which is considered to be the area of greatest impact, is much shorter than what I perceive as the hazard zone for the reactor planned to be built, and this is true in several ways. First off, it's obvious that winds and waterways carrying fallout from a supposed meltdown or military strike explosion are going to keep carrying radioactive materials far beyond 50 miles.

In the case of Chernobyl, as for any reactor meltdown, people, animals, and agriculture, air, water and soil, beyond 300 miles were and are directly adversely affected. To arbitrarily set the limits at 50 miles must be slightly convenient for both the Nuclear Regulatory Commission and industry, in this case DTE. But it dramatically shorts the public commons. Actually wind currents from Chernobyl have spread all around the world, and much may have precipitated into the Great Lakes. Any meltdown or blast from any one of the Fermi's would likely take out the other two nearby facilities, causing even greater calamities. There is much more to be considered regarding physical distance. (**0058-81** [Newnan, Hal])

Response: *Chapter 5 of the EIS will include an evaluation of the risks associated with potential severe accidents including accidents that involve reactor core melts. The evaluation will include estimates of health and economic risks to a distance of 50 mi from exposure to the plume and from exposure to contaminated land and water. These risks will be compared with risks associated with the existing units. The NRC staff has determined that consequences beyond 50 mi are very small. In addition, the severe accident consequence analysis assumes a complete wash down of the contaminated plume between 40 and 50 mi of the accident.*

Comment: If a major waste leakage or a meltdown were to occur, a water source critical to millions would be in jeopardy. Pure water on planet Earth is a major concern now. Who knows how costly, pervasive and long-lasting that destruction would be? (**0072-2** [Timmer, Marilyn])

Response: *The potential consequences of postulated design basis and severe accidents will be discussed in Chapter 5 of the EIS.*

D.1.16 Comments Concerning the Uranium Fuel Cycle

Comment: Where do you present a thoroughly responsible management method for the full cycle of radioactive materials, front to back end, including its risks during transport, storage and management? (**0004-6** [Carey, Corinne])

Comment: Now Fermi has been there and running for quite some time and knock on wood will continue to do so safely. But my major concern to this what is going to happen to the waste produced at the plant? Yucca mountain was discussed and it still hasn't be approved for

depository purposes of nuclear waste. So what happens, where does this go? I would like to think that nuclear energy is one of our future sources of power, but where does the waste go? (**0013-1** [Sanchez, Mira])

Comment: Nuclear Waste: first and foremost, there is nothing environmentally responsible or sustainable in nuclear waste. High level radioactive waste will be with us for thousands of years. We do not have any depository for the waste even after decades of analysis and debate. Even if the proposed Yucca site were opened today it would be filled by the time the waste of Fermi 3 and other proposed nuclear plants are operating. Given this reality, there is no foundation for assuming that there will be a political or technological solution to this highly toxic material. Creating more nuclear waste when there is no place to put what we already have is akin to financial institutions creating investment vehicles when they had no understanding of the financial risk or financial assets unpinning the offerings. We are all realizing the folly of that attempt. Simply put, creating more nuclear waste is an additional fouling of our home, our nest, our earth. (**0016-2** [Rivera, Gloria])

Comment: The nuclear fuel chain is complex, impossible to monitor, usually effects poor and indigenous communities, produces substantial amounts of toxic and radioactive waste and has tragic consequences for human health and the environment. It is a cycle of destruction at every step.

Environmental concerns must start at the beginning of the cycle and not at the power plant. In terms of radiation doses and number of people affected, uranium mining is one of the very hazardous steps in the cycle. Mining is one of the most CO2 intensive industrial operations. Mining contaminates drinking water from aquifers, rivers, lakes and streams with arsenic, radium, thorium and other heavy metals. Tailings, which become hills of fine sand-like solids, retain 80-90 % of the radioactivity of the ore that is left in piles to blow in the wind. Thorium 230 in tailings decays into radium-226, which in turn decays into radon-222, which can cause lung cancer. The radioactive hazards of tailings will persist for over 100,000 years.

The conversion of yellowcake to Uranium Hexafluoride UF6 creates airborne and waterborne uranium and chemicals such as hydrofluoric acid, nitric acid and fluorine gas. Uranium is an alpha emitter and is extremely hazardous to ingest or inhale.

The enrichment process includes discharges of polychlorinated biphenyls [PCB'S], chlorine, ammonia, nitrates, zinc and arsenic. The two enrichment plants in Portsmouth, Ohio and Paducah, Kentucky released 818,000 pounds of Freon in 1999. There are over 700,000 tons of uranium hexafluoride in decaying metal canisters at Ohio, Kentucky and Tennessee sites. (**0019-2** [Schemanksi, Sally])

Comment: The fission process at a nuclear power plant creates over 240 dangerous fission products. Some of these radioactive wastes have hazardous lives of tens of thousands of

years. The NRC, in evaluating these hazardous radioactive compounds, stated they will remain well above unrestricted release levels for a period of time far exceeding the known lifetime of any manmade structure. (**0019-7** [Schemanksi, Sally])

Comment: Theoretical hypotheses that conclude that radioactive substances can be handled and stored safely, without incident, do not match up with reality. No substantial proof has ever been presented through past experiences or through extensive testing that it is even possible to build a safe, leak proof dump. Any construction worker will tell you control of the movement of water is impossible. We have no control over the movement of a substance through the surface and subsurface of the earth. We cannot predict a stable society for hundreds, less thousands of years, nor can we prevent earthquakes, tornadoes, wars, terrorism, human error or common traffic accidents involving transport of radioactive waste.

The nuclear industry has created an elaborate scheme to divert responsibility for this dangerous radioactive waste. If these wastes were so harmless and a safe technology existed to handle them, the generators would remain titleholders. The nuclear industry has billions of dollars and a slate of experts. Their conclusions are very clear: They do not want title to this waste. There is no safe technology. (**0019-9** [Schemanksi, Sally])

Comment: I am very concerned about the nuclear waste - both high and low levels of radioactive nuclear waste that's already existent. The possibility of adding more is frightening. There are currently 104 nuclear powerplants in the U.S. To add to that number, with no long-term plan in sight flies in the face of good judgment. The possibility of an additional plant in this area (Monroe Michigan) could be a threat to the common good. (**0021-1** [Hart, Donna])

Comment: For some time, I have been aware of a movement toward building a third Fermi Nuclear Power Plant. Having studied issues regarding nuclear power, I feel great concern over such a possibility.

This concern focuses especially on what I perceive as an inability of the industry and the DOE to safely store nuclear waste. The efforts at Yucca Mountain have proved unsuccessful. Some nuclear waste has a half life of thousands or millions of years. Producing it without a plan for its safe storage seems extremely irresponsible. The current practice of temporarily storing the waste at the nuclear power plant site is not a satisfactory solution.

We place a heavy burden on our generation and on the generations to come when we produce such a dangerous product which we do not know how to safely store. Decisions made about this issue bear heavy responsibility.

I am relying on you to carry out your duty as a government agency responsible for enforcing EPA regulations and for granting or denying a license to operate a nuclear power plant. Please

advise me how the NRC is going to deal with the issue of nuclear waste and what impact the reality of its dangers will have on the licensing decision. (**0022-1** [Rabaut, Martha])

Comment: I am concerned about the issue of the storage of radioactive waste, which should be a major consideration in the construction of the proposed nuclear power plant: Fermi III.

First, although nuclear power plants supply almost 20 percent of the electricity in the United States, the dangers of nuclear waste far outweigh the advantages. There is no safe place for storage in our country. Yucca Mountain is an unstable geologic location. (**0023-1** [Mechtenberg, Marilynn])

Comment: Finally, what about the waste sites? In a geologic repository, isn't seepage a possibility? If the waste got into the soil, vegetation growing from it, if eaten, could harm individuals. Also, radionuclides are carcinogenic. (**0023-3** [Mechtenberg, Marilynn])

Comment: My concern is that thus far U.S. has not yet successfully provided sites for the existing radioactive nuclear waste from its 104 nuclear plants. The effort of the Yucca Mountain, Nevada site is failing. There are millions of gallons of radioactive waste, thousands of tons of spent nuclear fuel and materials and huge quantities of contaminated soil and water at 108 sites throughout U.S. These wastes are endangering plant, animals and humans who inhale, ingest and absorb them. I am asking the U.S. Nuclear Regulatory Commission and the DOE to address this serious deficiency before any plans are proposed for any new construction of nuclear power plants. (**0025-1** [Van Ooteghem, Rose Bernadette])

Comment: My concern is the Storage of the Spent Rods since nothing has been determined as yet of where or how this problem will be solved. We now know that President Obama will withdraw the License Application for Yucca Mountain site.

Since I reside on the shores of Lake Erie, I have a real concern of storing the waste in cement casks for an unlimited number of years without any data on file for safety of leaching and seeping... I am requesting a reply from the NRC to inform me of how these problems will be addressed. (**0030-1** [Conner, Mary V.])

Comment: The nuclear waste issue is still unresolved. Yucca Mountain is above the water table while Canada plans to put mid-level waste under Lake Huron, so it all seems like a big guess as to which is the safest disposal method. The transportation routes to Yucca Mountain endanger every American home. With worst case scenarios to consider with every shipment, thousands planned, too risky. If on site storage becomes the future of the waste issue instead of Yucca Mountain, then how will that affect the water rights of the Great Lakes region? (**0031-3** [Rysztak, Robert])