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**Halting 20 Extended Years of Risky, Reactor Operations and  
Radioactive Waste Generation and Storage  
On Lake Michigan at Palisades Nuclear Power Plant**

Comments on NUREG - 1437, Supplement 27 to the Generic Environmental Impact  
Statement for License Renewal of the Palisades Nuclear Power Plant

Submitted by the coalition of organizations listed above, representing well over 200,000 residents of Michigan alone, to the U.S. Nuclear Regulatory Commission (NRC)

May 18, 2006

**Executive Summary**

(to view the full 45 pages of comments, please go to  
<http://www.nirs.org/reactorwatch/licensing/cntsnureg1437supplement27.pdf> )

Consumers Energy, owner, and Nuclear Management Company (NMC), LLC, operator, of the Palisades Nuclear Power Plant situated on Lake Michigan in Covert Township, Michigan, have applied to extend the plant's operating license 20 years beyond its original 40-year operation tenure, which began in 1971. The Nuclear Regulatory Commission (NRC), a federal agency responsible for regulating nuclear power plants, is required by the National Environmental Protection Act (NEPA) to seek input from members of the public and interested groups, regarding the environmental impacts of this action, as well as alternatives to the proposed action.

There is much at stake with the prospect of 20 additional years of nuclear power and radioactive waste generation and the associated risks and serious consequences associated with the Palisades plant, which is already unfortunately sited right in the heart of an exceedingly environmentally valuable and sensitive dune and shoreland on Lake Michigan.

A coalition of organizations and individuals providing comments on the Environmental Impact Statement prepared as part of the extension application unanimously oppose the 20-year extension of a license for the Palisades nuclear power plant.

The NRC's framework for this application process unfairly and arbitrarily eliminates a huge array of issues from consideration, discussion and comment by the public. Native American tribes were **not** included in the consultation process for the development of the draft Environmental Impact Statement (EIS). The NRC also stifled debate on two of the most significant impacts of a 20-year license extension – the continued and cumulative effects of radioactive discharges to the environment and humans from the Palisades plant, and the buildup of close to 300 more tons of high-level radioactive waste on the Lake Michigan shoreline.

The coalition opposes the extension for the following reasons:

1. There is strong evidence that suggests security measures at Palisades are not adequate. Recent reports, including one in March of 2006 by the Government Accountability Office, call into question the ability and motivation of the NRC and nuclear power industry to take the necessary steps to ensure that the nation's nuclear power plants have instituted the most stringent security measures to protect against terrorist attacks.
2. Palisades' license extension will increase the amount of high-level waste on the Lake Michigan shoreline and the number of dangerous barge shipments of high-level radioactive waste on Lake Michigan. Palisades will generate approximately 290 more tons of high-level radioactive wastes in 20 additional years with no national repository likely to be established to receive the wastes. The U.S. Department of Energy's plan for transporting high-level radioactive wastes generated by the plant's operation, involves barging up to 125 or more giant rail-sized containers of the wastes from Palisades to the Port of Muskegon, up along the Lake Michigan shoreline. The slightest leakage of even a small amount of this waste could not only threaten Lake Michigan as a source of drinking water for ten million people, but also cause a host of other irrevocable impacts on the lake's fish, wildlife, people, and economy.
3. Palisades' high-level radioactive waste storage facility is defective and risky, situated on the Lake Michigan shoreline. There are numerous incidents dating from the installation of the waste storage facility to the present that demonstrate the risks associated with the dry cask storage containers, as well as their problematic placement on a high risk erosion stretch of the shoreline, on pads not adequately designed to be stable during events such as earthquakes.
4. The Palisades plant harms the environment and the health of its workers and surrounding residents from its discharges of radioactive and toxic substances to Lake Michigan, the air, and land. Routine radioactive discharges by nuclear power plants are incorrectly deemed legal and judged to be "safe" by the NRC and the

nuclear power industry, contrary to a recent National Academy of Sciences report that confirms that there is no safe level of exposure to radiation. Further, other toxic chemical discharges to Lake Michigan, such as Betz Clam-Trol, discharged via a National Pollutant Discharge Elimination System (NPDES) permit, require stricter controls and enforcement of violations, as part of any license extension application.

5. Aging and extended operation increase the risk of accidents at Palisades. The longer Palisades operates, the more embrittled its reactor pressure vessel becomes, increasing the risk for Pressurized Thermal Shock, a condition caused by any number of system malfunctions which can result in a severe, sudden overcooling of the reactor pressure vessel. This can lead to a loss-of-coolant accident, meltdown, and catastrophic release of radiation to the entire Great Lakes basin.
6. The analysis of alternatives to extending the license for Palisades was flawed and biased. Renewable energy sources such as wind power and solar power, as well as alternatives such as energy efficiency and conservation, are not given credible consideration in the EIS. NMC/Consumers and the NRC reveal a bias in favor of fossil fuel and nuclear power by presenting only those two sources favorably and by downplaying the potential for energy efficiency, energy conservation, and renewable sources of electricity.
7. The draft EIS prepared by the NRC unaccountably discounts the effects of global warming. There is considerable evidence that more extreme winds, as well more frequent and intense tornadoes — all of which global warming could cause — could make operation of Palisades more and more risky over time.
8. Financial benefits to Covert Township, host to Palisades nuclear power plant, are not evident and not expected with a license extension. The township consistently rates substantially below comparable county, state and national economic indicators in median household and per capita incomes and the draft EIS notes no improvements are expected by the license extension.
9. A 20-year extension for Palisades will be costly. Ratepayers and (by default) taxpayers are to pay for maintenance of the waste generated by the utilities. The fifty year old Price-Anderson Act requires taxpayers to pay for any major accident or terrorist incident at nuclear power plants over a cap of merely \$11 billion paid for by the nuclear utilities and their insurance companies for accidents or terrorist incidents at the plant, a liability that could run into many hundreds of billions of dollars. This liability protection is a unique subsidy provided to the nuclear power industry, at taxpayer expense.
10. A license extension at Palisades increases the fragile status of numerous already threatened, endangered, or candidate species, from daily “routine” radiation releases and/or potential large-scale radiation releases. Species exposed to cumulative exposures from the radioactive discharges of a nuclear power plant may

over time develop subtle genetic alterations that are not observable in the short term, but that could have large, subtle impacts within a population, not immediately apparent. This has significant implications for the threatened and endangered species of southwest Michigan.

A decision to sanction approval of the 20-year license extension appears to have been predetermined and the invitation to members of the public and citizens of this region to participate in this decision making process has been merely perfunctory.

This coalition of organizations protests the severe limitations of the process and advocates for a decision-making framework that allows for an unbiased, deliberative, participatory discussion as to whether or not to allow 20 more years of operation by the Palisades nuclear power plant.

With a **fair and just** Environmental Impact Statement – the conclusion reached in the EIS would not have been the continued operation of a potentially catastrophic accident risk and terrorist target on our beloved Lake Michigan shoreline. These risks are exacerbated by the already regrettable high-level radioactive waste storage -- or de facto high-level nuclear dump -- in the heart of the Great Lakes.

There are too many explicit threats to the region's environment and people that have been ignored in order to promote the use of an energy that is far too costly, exceedingly hazardous, increasingly risky and highly irresponsible, as the question of a solution to the waste problem is passed down as a regrettable legacy to future generations.

## **Recommendations**

**Security issues at Palisades must be addressed immediately.** If a mock attack or force on force demonstration has not been conducted at Palisades, it should be conducted as soon as possible. Classified results of the demonstration should then be directly communicated to the region's U.S. Congressional representatives and senators, as well as the Governor and Attorney General of the State of Michigan, for their thorough review and approval and reporting back to the public. To truly secure the Palisades nuclear power plant and dry cask storage, the following security safeguards, if not instituted already, would need to be in place.

- Sufficient cameras and patrols;
- Delay measures, such as fences outside buildings and entrances that would delay potential attackers;
- Bullet resistant structures in the protected areas of the plant site;
- Adequate and specific training for security officers;
- Several levels of intrusion detection systems (Needed especially by Palisades to protect against intrusion from potential attackers that may enter from Van Buren State Park, adjacent to the plant site.);
- Vehicle barrier systems to prevent vehicles with bombs from entering the site;
- Anti-aircraft capability, and;

- Shore patrol equipped with stationary weaponry capable of preventing an offshore assault.

NRC and Palisades must also ensure that the plant's irradiated nuclear fuel storage pools are safeguarded from terrorist activities as well as address civil liberties ramifications of increased security to the host and surrounding communities of Palisades.

**Native American interests must be addressed.** All Native American tribes and bands that could be expected to have an interest in the application by Palisades to operate an additional 20 years deserve both notification of this process, as well as the opportunity to share government-to-government decision making regarding the application, as allowed for under NEPA and other federal laws. A comprehensive site wide survey should be performed on the entire Palisades property – as recommended by Palisades' own cultural resource assessment subcontractor as described in the draft EIS – carried out in close consultation with all affected tribes.

**Effects on the health of populations surrounding Palisades and subject to downstream or downwind discharges must be studied and quantified.** The implications of the National Academy of Science's recent findings require a thorough analysis by the NRC in its EIS of the human health impacts of the radioactive substances released by Palisades. NMC/Consumers are obligated to provide the communities in the vicinity of the Palisades plant, with a monitoring program to provide them with independent information regarding radioactive discharges and releases. There is also a need to establish a baseline assessment of cancer and other disease rates, as well as a program of regular monitoring, prior to consideration of the proposal for a 20-year license extension. This should also include an evaluation of the potential for the synergistic effects of chronic or catastrophic radiation releases combined with the toxic pesticides to which migrant field workers in the region have been exposed.

**The NRC must provide a detailed explanation to the public as to the ultimate disposition of the wastes stored currently on the Palisades plant site, as well as the 290 additional tons expected as part of 20 additional years of operation.**

The proposed national repository for high-level wastes from nuclear power plants, Yucca Mountain, Nevada, is not expected to open until at least 2020, and is likely to be delayed beyond that date. Further, by law, the repository can only store 70,000 metric tons, which will not include the additional wastes generated at Palisades during a license extension. NRC in its EIS, must also explain how Palisades will deal with its "low" level radioactive wastes when its current repository site in Barnwell, South Carolina closes in 2008.

**Barging of high-level radioactive wastes in Lake Michigan must be removed as a transportation option.** The barging of 125 or more shipments of high-level radioactive waste on Lake Michigan is simply too risky. Any submersion of the casks containing the wastes in water, could stimulate the fissile uranium-235 and plutonium, both present in the high-level waste, to cause a nuclear chain reaction. The slightest leakage of even a small amount of this waste could not only threaten Lake Michigan as a source of

drinking water for ten million people, but also cause a host of other irrevocable impacts on the lake's fish, wildlife, people, and economy.

**NRC must require Palisades to develop and implement a specific plan for addressing embrittlement and aging issues.** Plans for addressing embrittlement at Palisades are not provided in by NMC or in the EIS. Any discussion of 20 additional years of operation at Palisades necessitates such a plan to address the aging of plant structures and components. We request the EIS provide assessment of the consequences of a "Beyond Maximum Credible Accident" as Palisades' embrittlement status increases the likelihood of such an accident.

**NMC/Consumers must demonstrate how the communities that surround its facility are equipped for a catastrophic radiation release.** The plant's current Radiological Emergency Response Plan is inadequate and must be revised to project 20 years forward and incorporate population trends and development, highway construction projects, transitory populations of migrant workers, and provisions for bi-lingual notifications and dissemination of information. This requires Spanish language emergency evacuation instructions and notifications prepared to serve the Spanish speaking Latino population.

**A comprehensive analysis of socio-economic conditions in Covert Township and Van Buren County must be conducted to encompass income disparities.** NRC must account for the lack of positive benefit by Covert Township residents as a result of the presence of Palisades' nuclear power plant and potential license extension. NRC must also direct NMC/Consumers to address the potential for disproportionate harm to the Latino migrant labor workforce from harm to the agricultural base from a radiation release.

**The safety of the concrete pads and the storage casks of high-level wastes must be resolved to the satisfaction of citizens of the region.** The potential for earthquake activity to damage Palisades' outdoor dry cask storage pads, upon which the casks have been placed, warrants rigorous consideration, which unfortunately, is not in evidence in the EIS. In fact, NRC has ignored Palisades' dry cask storage pads' violations of NRC earthquake safety regulations, despite NRC inspectors and concerned citizen groups calling attention to the issue for over a decade. Liquefaction of the beach near the dry cask storage due to an earthquake could result in casks being buried in sand or immersed underwater, leading to waste overheating, or even a nuclear chain reaction in the fissile materials still present in the waste. Amplification of earthquakes through dozens of feet of loose sand could also damage dry casks, potentially releasing deadly radiation if containers are breached. Further, blowouts, areas of blowing and unstable sands, in dunes in the vicinity of Palisades' dry cask storage system could threaten the integrity of the dry cask storage waste system, by clogging vents in the casks, and causing the wastes to overheat, which could lead to irradiated nuclear fuel deterioration and radiation leakage. Palisades must be required to monitor the dunes for potential blowouts and ensure that the dunes are consistently vegetated and stable.

**NRC must revise its analysis of energy alternatives.** Full and objective consideration must be afforded the options of renewable energy and efficiency. NRC must also provide a thorough cost accounting of the uranium fuel chain's negative impacts on health and the environment.

**The EIS should be revised to include how the NRC meets its obligations as described in the International Joint Commission's (IJC) "Ninth Biennial Report on Great Lakes Water Quality."** In it, the IJC urged that "governments monitor toxic chemicals used in large quantities at nuclear power plants, identify radioactive forms of the toxic chemicals and analyze their impact on the Great Lakes ecosystem."

**NRC must assess and consider as part of the EIS, the information currently available regarding the impacts of global warming to the region.** This must also include an analysis of the increased potential for an electrical station loss of power that could lead to loss of cooling in the reactor core and waste storage pool, with the potential for core meltdown and waste pool fires, with consequent catastrophic large-scale radiation releases to the environment. The warming of the cooling water supply from Lake Michigan must also be considered in regards to the efficiency and safety of Palisades continued operation till 2031.

**NMC/Consumers must be required to establish a baseline for the status of the endangered species and conduct appropriate monitoring to ensure that Palisades is not further endangering their health and viability.** Approving a license extension of 20 more years of reactor operations at Palisades increases the fragile status of these already threatened, endangered, or candidate species, from daily "routine" radiation releases and/or potential large-scale radiation releases.