UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
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CHICAGO, IL 60604-3590

MAY 26 2006

REPLY TO THE ATTENTION OF
B-19J

2/23/06
71 FR 9383
(14)

Chief, Rules Review and Directives Branch
U.S. Nuclear Regulatory Commission
Mail Stop T6-D59
Washington, D.C. 20555-0001

RECEIVED
2006 MAY -5 PM 9:48
RULES AND DIRECTIVES BRANCH

Re: Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 27: Palisades Nuclear Plant, Van Buren County, Michigan, Draft Report, NUREG-1437, EIS No. 20060052

Dear Sir or Madam:

In accordance with Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), the U.S. Environmental Protection Agency (EPA) has reviewed the Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 27 (SEIS): Palisades Nuclear Plant, which is a draft report. According to the SEIS, the operating license for Palisades Nuclear Plant will expire on March 24, 2011. The proposed Federal action would renew the current operating license for an additional 20 years.

The Nuclear Regulatory Commission (NRC) developed the Generic Environmental Impact Statement (GEIS) to streamline the license renewal process on the premise that environmental impacts of most nuclear power plant license renewals are similar, in most cases. NRC develops facility-specific SEISs for individual plants as the facilities apply for license renewal. EPA provided comments on the GEIS during its development process--for the draft version in 1992, and for the final version in 1996.

Palisades Nuclear Plant is located in Covert Township, Van Buren County, Michigan, on the southeastern shoreline of Lake Michigan. The plant has a single pressurized light-water reactor. The maximum authorized power level of its reactor is 2,565 megawatts thermal. The plant's current net summer capacity is 786 megawatts electric. The plant is refueled on an 18-month cycle. Palisades Nuclear Plant uses a closed-loop cooling system.

Based on our review of the Palisades Nuclear Plant draft SEIS, we have given the project an EC-2 rating. The "EC" means that we have environmental concerns with the proposed action, and the "2" means that additional information needs to be provided in the final SEIS. Our concerns relate to:

1. Adequacy and clarity of the information provided,

E-RIDS = ADM-03
Add = Bo Pham (BMP)
C. Guerrero (CXG3)

SUNSI Review Complete
Template = ADM-013

2. Risk estimates,
3. Entrainment of fish and shellfish in early life stages, and
4. Threatened and endangered species.

We have enclosed our comments and the U.S. EPA rating system summary.

If you have any questions or wish to discuss any aspect of the comments, please contact Newton Ellens (for NEPA-related issues) at (312) 353-5562, or Michael Murphy (for radiation-related issues) at (312) 353-6686.

Sincerely,

Kenneth A. Westlake, Chief
NEPA Implementation Section
Office of Science, Ecosystems, and Communities

Enclosures

U.S. Environmental Protection Agency Comments on
The U.S. Nuclear Regulatory Commission's Generic Environmental Impact Statement for License Renewal of Nuclear Plants, Supplement 27: Palisades Nuclear Plant, Draft Report, NUREG-1437

General Comments:

The supplement to the Generic Environmental Impact Statement (GEIS) for Renewal of Nuclear Power Plant Licenses should be a Site Specific Environmental Impact Statement instead. This would follow after forty years of operation, with a forty year data collection history, and where site specific conditions could be utilized to provide a specific response to the Environmental Impact requirements instead of a generalized one.

Specific Comments:

1. Section 2.1.4.2, *Gaseous Waste Processing Systems and Effluent Controls*, Page 2-12, second paragraph. Citations of dose values should include the dose value, in addition to the citation, to make the values clearer.

2. Section 2.2.7, *Radiological Impacts*, pages 2-49, 2-50. The references to the environmental standards need to be more complete citations, including title of the rule or regulation along with the basic standard for comparison provided consistently. All of the environmental standards that could be used for comparison should be used, including 40 CFR 61 Radionuclide National Emission Standards for Hazardous Air Pollutants values. This will reduce the time needed to look up these citations and verify values that are cited in the text.

3. Section 2.2.7, *Radiological Impacts*, page 2-49. We are concerned about the level of information provided in the draft supplemental environmental impact statement (SEIS) on direct and cumulative radiological impacts. According to the draft SEIS, Nuclear Management Company, LLC (NMC), the applicant for the operating license, has conducted a radiological environmental monitoring program (REMP) around the Palisades site since 1971. Through this program, NMC has monitored and documented radiological impacts to workers, the public, and the environment. The draft SEIS states:

> The REMP includes monitoring of the waterborne environment (ground water, surface water, and sediments), ingestion pathways (milk, fish and vegetation), direct radiation (gamma dose at thermoluminescent dosimeter [TLD] locations), and atmospheric environment (airborne radioiodine, particulates, gross beta, and gamma). [Page 2-49]

The draft SEIS cites two annual reports which summarizes information from the REMP, but the draft SEIS does not contain this summary information itself. Summarized

quantitative information about radiation and exposure pathways in the environment is relevant in determining radiological impacts from the continued operation of Palisades. We are unable to make such a determination from the draft SEIS as it is written. In addition, the draft SEIS lacks a comprehensive assessment of cumulative radiological impacts, since it does not include quantitative information about the D.C. Cook Nuclear Plant, located about 28 miles south-southwest of Palisades on Lake Michigan's shores. Therefore, we suggest that the final SEIS include (1) current annual summary information from the REMP, and (2) a quantitative cumulative impact assessment of radiological impacts which accounts for impacts from the D.C. Cook Nuclear Plant.

4. Section 2.2.7, *Radiological Impacts*, pages 2-49, 2-50. Providing the estimated total effective dose equivalents (TEDE's) for comparisons helps in providing the public with additional assurances that doses are monitored and do meet the As Low As Reasonably Achievable (ALARA) principals of the U.S. Nuclear Regulatory Commission (NRC).

5. Section 4.2.2, *Electromagnetic Fields - Chronic Effects*, page 4-17. We commend NRC for providing the reference to the National Institute of Environmental Health Sciences results and recommendations on chronic exposures to electromagnetic fields. This will provide the public with valuable information on these types of exposures.

6. Section 4.8.3, *Cumulative Radiological Impacts*, page 4-38, 4-39. Information or procedures used to generate values to support the assertions in this section need to be provided in a clearer manner to reduce the possibility of misunderstandings and the reasoning on procedures to reach these conclusions.

7. Section 5.2.2, *Estimate of Risk*, page 5-6. It is stated that "The baseline core damage frequency (CDF) for the purpose of the SAMA [Severe Accident Mitigation Alternatives] evaluation is approximately 4.05×10^{-5} per year. This CDF is based on the risk assessment for internally-initiated events. NMC did not include the contribution to risk from external events within the Palisades risk estimates; however it did account for the potential risk reduction benefits associated with external events by increasing the estimated benefits for internal events by a factor of two."

   The estimates for risks from both types of events should be evaluated and presented, along with a rationale for not basing risk decisions on the external events or including them in the considerations as necessary to get an accurate portrayal of the risk of the licensing renewal.

8. Section 6.1, *The Uranium Fuel Cycle*, page 6-3. Under the bullet point for Off-site radiological impacts (individual effects from other than disposal of spent fuel and high level waste disposal), no consideration appears to be given to the potential long-term storage of the spent fuel and high-level waste materials on site until such time as a

permanent facility is finally licensed and begins to accept these materials for disposal. A reference to other sections that this evaluation may have been included in should be provided here as well as in other sections, or if this evaluation has not been adequately conducted, the issue needs to be considered and an appropriate evaluation conducted.

9. Section 6.1, *The Uranium Fuel Cycle*, page 6-8, under the bullet point for On-Site Spent Fuel. A more thorough evaluation for the volume of spent fuel expected to be generated during the additional licensed time needs to be provided, along with more specific information as to site specific circumstances that may impair or improve the risk values for potential exposures to this spent fuel storage.

10. Section 7.1, *Decommissioning*, page 7-2, under bullet point Radiation Doses. As the GEIS is based on a forty-year licensing period, an extension of this period would have an impact that needs to be quantified and reported. This information should have been included specifically in the draft SEIS as part of the risk that would be associated with the license extension. The specific methodology needs to be provided and explained.

11. Section 8.1, *No-Action Alternative*, page 8-5, under the bullet point Human Health. The actual value representing the cited percent value should be specifically provided in addition to the citation. This will reduce unnecessary additional research by readers, except for value verifications, and potential misunderstandings or confusion as to the actual value(s) being specified.

12. Section 8.2.1, *Coal-Fired Generation*, page 8-17, under bullet point Human Health. Any dose estimate that would have the potential to fall in the risk range of 10^{-6} to 10^{-4} or greater needs to be specifically evaluated for potential regulatory requirements or risk impacts to the public health. This should be estimated conservatively using the data that is currently available or that can be logically extrapolated from currently available information.

13. Section 8.2.3, *Nuclear Power Generation*, page 8-34. The changes in power production would provide a difference in potential risk to the public and needs to be specified, rather than merely referenced, to provide a clearer understanding of the risk determination in this section of the document.

14. Section 8.2.3.1, *Closed -Cycle Cooling System*, page 8-39, under bullet point Waste. Waste impacts need to be specified, rather than merely referenced, to provide a clearer understanding of the risk determination made in this section of the document.

15. Section 8.2.3.1, *Closed -Cycle Cooling System*, page 8-40, under bullet point Human Health. Human-health impacts need to be specified, rather than merely referenced, to provide a clearer understanding of the risk determination in this section of the document.

16. Section 2.1.4.1, *Liquid Waste Processing Systems and Effluent Controls*, Page 2-12. The draft SEIS does not provide quantitative details about the planned modification of the liquid radioactive waste processing system. The draft SEIS states that NMC is planning to replace the current system, which is based on evaporation, to a system using resins for ion exchange. The draft SEIS does not provide quantitative details about the estimated change in collection efficiency between the two systems. This information should be provided in the final SEIS.

17. Section 4.1, *Cooling System*, page 4-9. We are concerned about entrainment of fish and shellfish in early life stages. Under a U.S. EPA rule, codified in 40 C.F.R. § 125 (U.S. EPA Rule), Palisades Nuclear Plant is required to reduce its entrainment of fish and shellfish in early life stages. Under the U.S. EPA Rule, Palisades Nuclear Plant is required to choose one of five compliance alternatives to reduce entrainment, and the compliance alternative must meet a regulatory performance standard. We understand that Palisades will comply with the U.S. EPA rule through conditions in a NPDES permit issued by the Michigan Department of Environmental Quality. However, we believe that the project proponents should have a proposed compliance alternative and regulatory performance standard for Palisades, because the project proponents must assess the feasibility of complying with the rule. Listing this information would provide a comprehensive public disclosure of plans to reduce entrainment. Therefore, we request the project proponents to determine and disclose the proposed compliance alternative and performance standard that would most likely be proposed in the NPDES permit application for Palisades in the final SEIS.

18. Section 4.6, *Threatened and Endangered Species*, pages 4-32 to 4-35. We are concerned because the draft SEIS does not evaluate impacts on state-listed threatened and endangered species. The draft SEIS includes an evaluation of federal and state-listed threatened and endangered species in the study area. However, the draft SEIS only evaluates impacts to federal-listed threatened and endangered species. We believe that the final SEIS should include a more comprehensive evaluation of threatened and endangered species, by including an evaluation of impacts to state-listed species.

SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION*

Environmental Impact of the Action

LO-Lack of Objections
The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns
The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections
The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory
The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS sate, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1-Adequate
The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alterative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information
The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate
EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640 Poiicy and Procedures for the Review of the Federal Actions Impacting the Environment