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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604-3590

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OFFICE OF STRATEGIC ENVIRONMENTAL ANALYSIS FAX COVER SHEET
MAIL CODE: 8-19J
FAX NUMBER: (312) 353-5374

TO: Bill Dam
U.S. Nuclear Regulatory Commission

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FROM: Newton Ellens

PHONE: 312-353-5562 FAX: _____

DATE: 12-8-04 NO. OF PAGES: 7

COMMENTS: Comments on GEIS for Nuclear
Plant License Renewal - Supplement
20 - D.C. Cook, Berrien County, MI

SISP Review Complete

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R. SCH99f (RES)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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77 WEST JACKSON BOULEVARD
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DEC 08 2004

REPLY TO THE ATTENTION OF:

B-19J

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

Re: Generic Environmental Impact Statement for License Renewal of Nuclear Plant, Supplement 20: Donald C. Cook Nuclear Plant, Units No. 1 and 2, Indiana and Michigan Power Company (I&M), Draft Report, NUREG-1437, EIS No. 040452

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 Plant, Supplement 20 (SEIS): Donald C. Cook Nuclear Plant (Cook Nuclear Plant), Units No. 1 and 2 (Cook Units 1 and 2), which is a draft report. According to the SEIS, the current operating licenses for Cook Units 1 and 2 will expire on October 25, 2014 and December 23, 2017, respectively. The proposed Federal action would renew the current operating licenses 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.

The Cook Nuclear Plant is located in Lake Charter Township, Berrien County, Michigan, on the southeastern shoreline of Lake Michigan. Cook Units 1 and 2 are pressurized light-water reactors. Cook Unit 1 produces a reactor core power of 3304 megawatts-thermal, and has a design net electrical capacity of 1044 megawatts. Cook Unit 2 produces a core power of 3468 megawatts-thermal, and has a design net electrical capacity of 1117 megawatts. Each unit is refueled on a 18-month cycle; this is done by refueling an alternate unit each year. The condenser cooling system for Cook Nuclear Plant is a once-through circulating water system that draws and discharges to Lake Michigan.

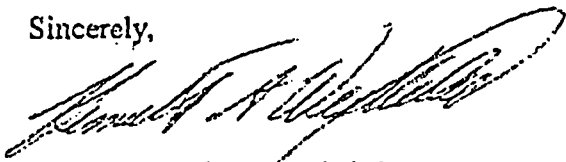
Based on our review of the Cook Nuclear Plant draft SEIS, we have given the project an EC-2 rating. The "EC" means that we have environmental concerns with the proposed action, and the "2" means that additional information needs to be provided in the final SEIS. Our concerns relate to:

1. Information provided on radiological impacts,
2. Adequacy and clarity of the information provided,
3. Risk estimates, and
4. Entrainment of fish and shellfish in early life stages.

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 of my staff at (312) 353-5562.

Sincerely,



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

Enclosures

**U.S. Environmental Protection Agency Comments on
Generic Environmental Impact Statement for License Renewal of Nuclear Plant,
Supplement 20: Donald C. Cook Nuclear Plant, Units No. 1 and 2, Draft Report,
NUREG-1437**

1. Section 2.1.3, *Cooling and Auxiliary Water Systems*, page 2-7. Last paragraph equates 104m³/s to 2369 million gpd. This calculation would appear to be inaccurate. The actual value would be closer to 2373 million gpd. An explanation for this amount of variation needs to be provided.
2. Section 2.2.7, *Radiological Impacts*, pages 2-54, 2-55, last paragraph. 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. All of the environmental standards that could be used for a comparison should be used, including 40 C.F.R. 61 Radionuclide National Emission Standards for Hazardous Air Pollutants values. This will allow the reader to understand which citations are being referenced and to verify values that are cited in the text.
3. Section 3.0 *Environmental Impacts of Refurbishment*, page 3-2, Table 3-1. Under the section on Human Health, specific information supporting any assertions that this area "needs no further evaluation" needs to be presented or more completely cited and described.
4. Section 4.2.2, *Electromagnetic Fields - Chronic Effects*, page 4-25, should provide the reference to the National Institute of Environmental Health Sciences website for further information on this topic.
5. Section 4.3, *Radiological Impacts of Normal Operations*, page 4-26, 4-27, Table 4-7, and paragraph 3. The specific values for exposure need to be provided in addition to the complete citation of the source of this information. This will help to provide the reader with a clearer understanding of the information, rather than relying on a citation only, which then must be reviewed to verify the standard being cited.
6. Section 4.8.3, *Cumulative Radiological Impacts*, page 4-48, Paragraph 1. Information or procedures used to generate values to support the assertions and conclusions in this section need to be provided more clearly to reduce the possibility of misunderstandings.
7. Section 5.2.2, *Estimate of Risk*, page 5-6. The Supplemental Environmental Impact Statement (SEIS) states, "The baseline core damage frequency (CDF) for D. C. Cook Nuclear Power Plant (Cook Nuclear Plant) is approximately 5.0×10^{-5} per year, based on internally-initiated events. I&M did not include the contribution to CDF from external events in these estimates even though the risk from external events is significantly higher for Cook Nuclear Plant, than risk from internal events." In order to produce an accurate

risk calculation for this case, we believe that the final SEIS should include risk estimates from external events. If the final SEIS does not include these risk estimates, then it should explain why they were omitted from the risk calculations.

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 where this evaluation is included should be provided here as well as other sections. If this evaluation has not been adequately done, the issue needs to be considered, and an 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 addition 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.
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 another twenty years would have an impact that needs to be quantified and reported. This information should be included specifically in the 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 help the reader understand the actual value(s) being specified.
12. Section 8.2.1.1, *Closed-Cycle Cooling System*, page 8-19, under the bullet Uranium and thorium. A better comparison or quantification of the relative concentrations of the uranium and thorium to the background levels needs to be provided. As is, this presentation can lead to misunderstanding and confusion.
13. Section 8.2.1.1, *Closed-Cycle Cooling System*, page 8-20, 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.

14. Section 8.2.3.1, *Closed -Cycle Cooling System*, page 8-44, 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 8-44, 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. We are concerned about the entrainment of fish and shellfish in early life stages. Under a U.S. Environmental Protection Agency rule, codified in 40 C.F.R. § 125 (U.S. EPA rule), Cook Nuclear Plant is required to reduce its entrainment of fish and shellfish in early life stages. According to the SEIS, certain measures already in place ("e.g., an offshore intake located where there are no bays or points to act as fish nurseries or other attraction features...and no substantial unique spawning grounds that occur in the plant area") are expected to provide mitigation for impacts related to entrainment. Under the U.S. EPA rule, Cook Nuclear Plant is required to choose one of five compliance alternatives to reduce entrainment, and the compliance alternative must meet a regulatory performance standard. However, the SEIS is not clear about how the proposed mitigation measures function as a compliance alternative, nor does the SEIS indicate a targeted performance standard. The final SEIS should provide this information.

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 date, 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 alternative 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 Policy and Procedures for the Review of the Federal Actions Impacting the Environment