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Rules and Directives
 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

11/13/03

68 FR 64372

12

Re: Generic Environmental Impact Statement for License Renewal of Nuclear Plant, Supplement 16: Quad Cities Nuclear Power Station, Units 1 and 2, Draft Report, NUREG-1437 (CEQ # 030513)

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 16: Quad Cities Nuclear Power Station, Units 1 and 2, which is a draft report. 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 supplemental environmental impact statements (SEIS) for individual plants as the facilities apply for license renewal. EPA provided comments on the GEIS during its development process, in 1992 (draft) and again in 1996 (final).

The Exelon Generation Company, LLC has submitted a permit application to the NRC to extend the operating license for the Quad Cities Units 1 and 2 for an additional 20 years. The Quad Cities plant is located on the bank of the Mississippi River in Rock Island County, Illinois and has operated since 1973. The plant is a two-unit nuclear-powered steam electric plant with a once-through cooling system using water from the Mississippi River to remove heat from the main condensers and other auxiliary equipment. The reactors are refueled on a 24-month schedule. Spent fuel is stored in the spent fuel pool. Exelon plans to build dry storage casks for spent fuel storage and begin using them in 2005. The plant produces as much as 2,957 megawatts (thermal) and supplies electricity to 350,000 industrial, commercial, and residential users.

Based on our review of the Quad Cities 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 include impacts from power uprates, on-site waste storage, transportation to off-site repositories, sediments, and estimates of risk. We recommend the NRC's final SEIS address these issues

FRIDS = ADM-03

Recuplter = ADM-013

Call = J. Wheeler (DXW)

because they involve changes in plant operation and changes to actual, potential, or cumulative environmental impacts. 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 Anna Miller of my staff at (312) 886-7060.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth A. Westlake". The signature is fluid and cursive, with a large loop at the end.

Kenneth A. Westlake, Chief
Environmental Planning and Evaluation Branch
Office of Strategic Environmental Analysis

Enclosures

**U.S. EPA Comments on
Generic Environmental Impact Statement for License Renewal of Nuclear Plant,
Supplement 16: Quad Cities Nuclear Power Station, Units 1 and 2, Draft Report,
NUREG-1437**

1. Although the license applicant's environmental report (ER) to the Nuclear Regulatory Commission (NRC) need not discuss aspects of storage of spent fuel, as noted on page 1-5, citing 10 CFR 51.23 (b), we suggest the NRC's final supplemental environmental impact statement (SEIS) discuss impacts from dry storage casks, because it would be a change in operation for the new license period. The draft SEIS states that Exelon plans to build an independent spent fuel storage installation for storing spent fuel in dry storage casks for use in 2005 (section 2.1.4, page 2-9). The change in storage option is not addressed elsewhere in the document. We suggest the NRC's final SEIS address spent fuel storage in dry storage casks, at least as far as it may be addressed in the License Renewal Generic EIS, and include discussion about potential environmental impacts. In particular, the final SEIS should describe any differences in environmental impacts associated with this change to storage.
2. Although the applicant's ER need not discuss the demand for power, as noted on page 1-5, citing 10 CFR 51.53(c)(2), we note it is a reasonably foreseeable action and therefore should be discussed in the NRC's final SEIS. We note that Exelon requested and received NRC approval for a license amendment to carry out an 18% power uprate, which took place in May 2002 (section 2.1.4, page 2-9). The reports documenting the uprate's impact will not be delivered until May 2004, though the NRC estimates that the uprate could increase radiological effluent releases by a corresponding 18%. The draft SEIS states that the 18% radiological effluent increase will be within NRC limits. The draft SEIS does not, however, assess the potential for future uprates and the possible effects of future uprates. We recommend the final SEIS (1) include a discussion of environmental impacts from past power uprates, (2) assess the potential for future power uprates during the extended license period, and (3) discuss potential and cumulative environmental impacts from uprates.
3. Under *Section 4.1 Environmental Impacts of Operation, Cooling System*, page 4-6: The generic no-impact language referenced in this section about sediments states that sediment contamination is not a problem at most plants. and no new or significant information has been identified for the Quad Cities site. Accumulation of contaminants in sediments is a cumulative impact. The absence of an impact over the past years of operation does not demonstrate that accumulations will not reach a level of concern over an additional 20 years of operation. Furthermore, copper discharge was an issue at one power plant and was satisfactorily mitigated, according to the GEIS. We recommend the final SEIS for the Quad Cities site describe the potential for accumulation of contaminants in sediments in light of 20 additional operating years and consider whether mitigation may be advisable.

4. *Section 5.2.2, Estimate of Risk:* Page 5-5 states “The baseline core damage frequency (CDF) for Quad Cities is approximately 2.2×10^{-6} per year, based on internally-initiated events. Exelon did not include the contribution to CDF from external events in these estimates even though the risk from external events is significantly higher for Quad Cities than risk from internal events.”

We recommend evaluating and presenting risk estimates from both internal and external events. In addition, given the draft SEIS statements referenced above, effects of external events should be included in the risk decision considerations, as necessary, to get an accurate portrayal of the risk of the licensing renewal. If the final SEIS does not incorporate external events into risk calculations or risk decisions, it should provide a rationale for using internally-initiated events only.

5. *Section 6.1, The Uranium Fuel Cycle,* page 6-6. Under the bullet point for Off-site radiological impacts (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 or documents where this evaluation may have been included should be provided here; otherwise, the issue needs to be considered and evaluated.
6. *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.
7. *Section 6.1, The Uranium Fuel Cycle,* page 6-8. The draft SEIS should be clearer about environmental impacts of transporting spent fuel to a repository site. We realize it may be premature to assess this fully on a power plant-specific basis; however, transportation to the nuclear waste repository appears to be reasonably foreseeable. The SEIS refers to the License Renewal GEIS (where transportation was discussed in a supplement: NUREG-14137, Vol.1, Addendum 1, 1999). The GEIS supplement, in turn, refers to the Draft Environmental Impact Statement (DEIS) for the Yucca Mountain Repository, which had not been finished at the time. These generic documents appear to assess impacts only within the State of Nevada. We recommend the final SEIS include more specific information about transport from this site, or else include a reference to route-specific impacts, as they may be covered in the Yucca Mountain Repository DEIS. In addition, we suggest the final SEIS be clear about whether transportation includes the process of removing spent fuel from casks and pools and loading it into vehicles. We suggest these processes be part of the transportation section, if not handled elsewhere, and we suggest the final SEIS discuss their impacts.

8. *Section 7.1, Decommissioning, page 7-2, 7-3:* 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 site-specific impact with respect to radiation doses that needs to be quantified and reported. This information should be included specifically in the final SEIS as part of the risk that would be associated with the license extension.
9. *Coal Fired Generation Alternative, Section 8.2.1.1, Closed-Cycle Cooling System, page 8-21, Under the Human Health bullet point:* Any dose estimate that would have the potential to fall within 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.
10. *Nuclear Power Generation Alternative, Section 8.2.3.1, Closed -Cycle Cooling System, page 8-44:* Both waste impacts and human health impacts need to be specified rather than referenced to provide a clearer understanding of the risk determination made in this section of the document.

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 state, 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