Mendiola, Doris

Subject: FW: PIIC Comments on Proposed Rule to Revise GEIS
Attachments: GEIS Comment Letter.pdf

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From: Phil Mahowald [mailto:pmahowald@piic.org]
Sent: Tuesday, January 12, 2010 8:19 PM
To: Rulemaking Comments
Subject: PIIC Comments on Proposed Rule to Revise GEIS

10:20 AM

Greetings:

Attached please find the Prairie Island Indian Community's Comments on the regarding the Nuclear Regulatory Commission's (NRC) proposed rule to revise the Generic Environmental Impact Statement (GEIS) for License Renewal of Nuclear Plants, which was noticed in the Federal Register on July 31, 2009 (76 FR 38117). Please contact me if you have any questions.

Sincerely,

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PRAIRIE ISLAND INDIAN COMMUNITY
LEGAL DEPARTMENT

January 12, 2010

Secretary
United States Nuclear Regulatory Commission
Washington, DC 20555-001
Attn: Rulemaking and Adjudications Staff

VIA EMAIL:
Rulemaking.Comments@nrc.gov

Dear Rulemaking and Adjudications Staff:

The Prairie Island Indian Community offers the following comments regarding the Nuclear Regulatory Commission's (NRC) proposed rule to revise the Generic Environmental Impact Statement (GEIS) for License Renewal of Nuclear Plants, which was noticed in the Federal Register on July 31, 2009 (76 FR 38117).

Community Background

The Prairie Island Indian Community is a federally-recognized Indian Tribe organized under the Indian Reorganization Act of 1934. The Tribe is governed under the terms and conditions of the Prairie Island Indian Community's Constitution and By-Laws adopted by tribal members on May 23, 1936, and approved by the Secretary of the Interior on June 20, 1936. The five-member Tribal Council consists of a President, Vice-President, Secretary, Treasurer, and Assistant Secretary/Treasurer, each of whom serves a two-year term.

The Prairie Island Indian Reservation is located on Prairie Island, which is formed at the confluence of the Vermillion River and Mississippi River in southeastern Minnesota (approximately 35 miles southeast of the Twin Cities of Minneapolis and St. Paul). The Mdewakanton, "those who were born of the waters," have lived on Prairie Island for countless generations. Archaeological evidence, including village sites and burial mounds, conclusively demonstrates that Prairie Island has been a place of historical and cultural significance for thousands of years. Descendants of those earliest known inhabitants, the members of the Mdewakanton Dakota (Sioux), traditionally used Prairie Island as a summer encampment for fishing, hunting and raising crops. At least by the late 1880s, a small permanent Mdewakanton settlement was established. Congress appropriated funds and purchased land for the Mdewakanton on Prairie Island in the late 1880s. Additional lands were subsequently acquired and placed into trust pursuant to the Indian Reorganization Act of 1934, and a formal reservation was established. The size of

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the Prairie Island reservation has grown through subsequent federal acts and direct purchases by the Tribal Council, and now totals over 3,000 acres of both land and water (approximately 1,986 acres of land). *See* Figure 1.

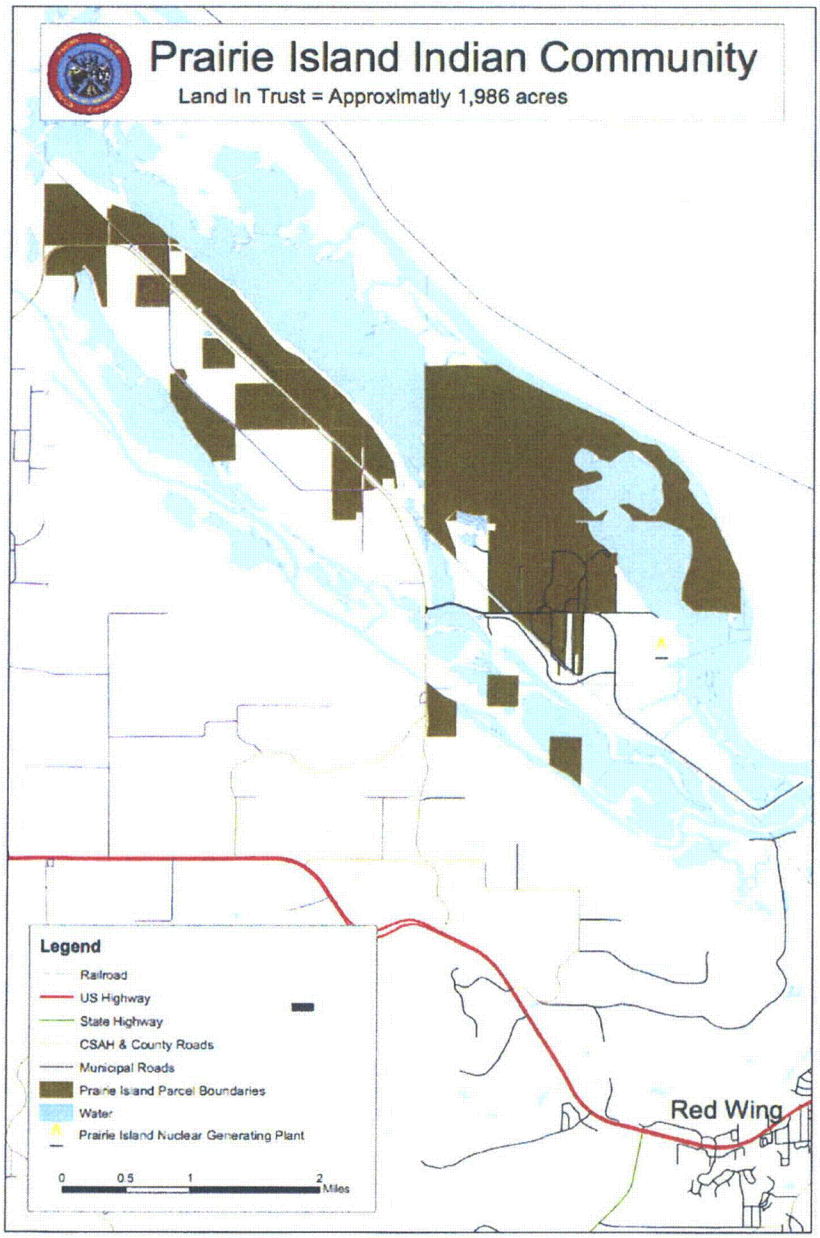


Figure 1

Immediately adjacent to our homeland is the Prairie Island Nuclear Generating Plant (PINGP), which is owned and operated by Northern States Power Company (Xcel Energy). *See* Figure 2.

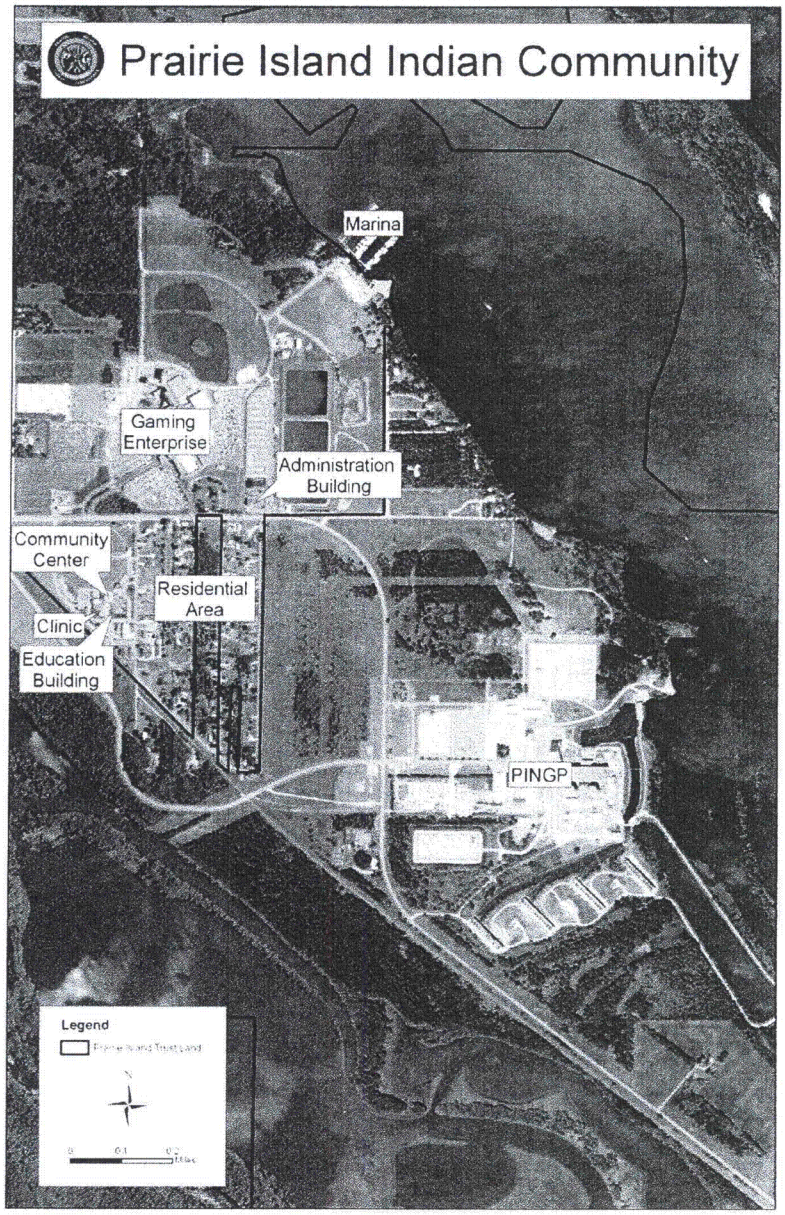


Figure 2

The PINGP has been online since the early 1970s and will operate until at least 2034 if the pending License Renewal Application is approved by the NRC. Xcel Energy is also licensed by the NRC to store spent fuel on-site at a site-specific Independent Spent Fuel Storage Installation (ISFSI). The ISFSI is approximately 600 yards from the nearest Community residence. *See* Figure 2. If the plant is decommissioned in 2034, the spent

fuel is estimated to require total 98 dry casks at the ISFSI. Considering that the planned National Repository at Yucca Mountain has been found to be "unsuitable" by President Obama and funding for the project has all but ceased, the only reasonable assumption is that the nuclear waste will be stored here on Prairie Island indefinitely.

In April of 2008, Xcel Energy submitted a license renewal application to the NRC to extend the licenses of the PINGP until 2033 and 2034. In June 2008, the Prairie Island Indian Community entered into a Memorandum of Understanding (MOU) with the NRC that established a cooperating agency relationship for the purpose of preparing the Supplemental Environmental Impact Statement (SEIS) for the renewal of the PINGP 1 and 2 licenses. The Community's Cooperating Agency status, as it relates to the development of the SEIS, is limited to four areas: Historic and Archeological Resources; Socioeconomics; Land Use; and Environmental Justice. This agreement is the first of its kind within the NRC.

Because we have reviewed the 1996 GEIS, developed extensive EIS scoping comments, and are a Cooperating Agency for portions of the PINGP SEIS, we believe that we can offer insightful and relevant comments on the proposed revised GEIS.

Our comments address both the Federal Register notice (74 FR 38117) and the revised GEIS (NUREG-1437, Volume 1, Revision 1).

Trust Responsibility of the Federal Government

The GEIS was written in 1996, at a time when most federal agencies had well-developed and well-implemented Indian policies; the GEIS did not include any discussion of Indian tribes or how the NRC would work with Indian tribes to resolve or address any issues arising from power plant relicensing. It is quite disappointing that the revised GEIS does not recognize or mention tribes or tribal sovereignty. Federally-recognized Indian Tribes are governments, with unique legal and political standing and rights. Tribal governments are not State governments and are not local governments. Indian tribes enjoy a Government-to-Government relationship with all Federal Government agencies, which includes the NRC. There should be some recognition of this status in the revised GEIS and a statement that the NRC will endeavor to work with tribes on a government-to-government basis to try and address and resolve any issues resulting from power plant license renewals.

Specific Comments on Federal Register Notice

Page 38127 of the Federal Register Notice states that the NRC requires the assistance of applicants in determining whether there would be any disproportionately high and adverse human health and environmental impacts on minority and low income populations from continued power plant operations and refurbishment. This obligation of a license renewal applicant to evaluate environmental justice impacts is consistent with

recent NRC adjudicatory decisions. *See* Northern States Power Co. (Prairie Island Nuclear Generating Plant, Units 1 and 2), LBP-08-26, 68 NRC 905 (2008) and Northern States Power Co. (Prairie Island Nuclear Generating Plant, Units 1 and 2), LBP-08-26 (2009). The Supplementary Information for the final rule should emphasize this obligation by stating where the obligation is codified in the regulatory text of 10 CFR Part 51, i.e., in Appendix B, Table B-1. Our concern is magnified by the fact that the license applicant for renewal for the Prairie Island Nuclear Plant repeatedly challenged this basic obligation.

Page 38126 of the Federal Register Notice, item (56) *Transportation* reclassifies the Category 2 issue "Public services, transportation," as a Category 1 issue, concluding that "transportation impacts are no longer anticipated from future license renewals." However, in the draft Supplemental Environmental Impact Statement on the renewal application for the Prairie Island Nuclear Generating Plant, the NRC found that the impacts from transportation during refurbishment could be SMALL to **MODERATE** (emphasis added). Generic Environmental Impact Statement for License Renewal of Nuclear Power Plants, Supplement 39, Regarding Prairie Island Nuclear Generating plant, Units 1 and 2, Draft Report for Comment, NUREG-1437, Supplement 39, at 3.2.7 (2009). If a recent draft SEIS found that this type of impact could approach MODERATE, what is the criteria and justification for transferring these types of impacts from a Category 2 designation to a Category 1 designation? Please explain.

Revised GEIS

Cumulative Impacts

The cumulative impacts section of the draft GEIS, 4.13.12, does not discuss the obligation of an agency, in this case the NRC, to evaluate the cumulative impacts of the many individual environmental impacts on a low-income or minority population. The NRC is required to consider the overall cumulative impacts that can be expected if the individual impacts are allowed to accumulate. *See* Fritiofson v. Alexander, 772 F.2d 1225 (5th Cir. 1985). In the environmental justice context, the NRC must analyze the cumulative impact of the many impacts identified in a Supplemental EIS on an individual license renewal application on the low-income or minority populations.

The draft GEIS identifies many categories of impacts as Category 1. However, there is no discussion of what is required if a Category 1 issue is implicated by a Category 2 issue. For example, if it can be shown that endangered avian endangered species (Category 2) are being killed by transmission lines or cooling towers (Category 1), than the assumption should be that these types of Category 2 impacts must be evaluated on a site-specific basis. If health effects from radiation (Category 1) can be shown to pose a special impact on a minority or low-income population (Category 2), than those impacts must be evaluated on a site-specific basis. In other words, the Category 2 issue overrides the Category 1 designation.

Human Health

Since the GEIS was published in 1996, a number of studies have reported elevated rates and/or risks for cancer experienced by populations residing proximal to nuclear facilities. Many of these studies were completed subsequent to the release of the 1996 GEIS and should have been included in the analysis for the revised GEIS. These studies, we believe, support a finding that human health impacts from radiation should be a Category 2, or site-specific impact.

In particular, elevated rates of leukemia have been observed among populations in England (Gardner *et al.*, 1987), Spain (Silva-Mato *et al.*, 2003) and Germany (Hoffmann *et al.*, 2007; Spix *et al.*, 2008; Kaatsch P, Spix C, Schulze-Rath R, *et al.*, 2008).

The most recent of the above studies involving populations residing in the vicinity of 16 German nuclear power plants (the Kikk study) are among the methodologically strongest studies that have to date been completed (BFS 2007).

The KiKK study included all 16 large reactor locations where 20 nuclear power plants in Germany were in operation during the 24-year period of study (1980 - 2003).

The distance between the children's homes and the power plants was precisely determined to within 25 meters (or approximately 82 feet). The main questions posed by the study were: "Do children under five years of age more frequently develop cancer when living near a nuclear power plant?" and "is there a negative distance trend?" (In other words: is the risk greater the nearer the child lives to the plant?) The results showed not only a 60% increase in the cancer rate and a 117% increase in leukemia in infants within the 5 km radius (or approximately 3 miles), but also a significant increase in the risk of cancer and leukemia the closer one lived to the nuclear power plant.

In the second part of the study, which covered a shorter period of time and a selection of diagnoses (leukemia, lymphomas and tumors of the central nervous system), it was tested whether other risk factors (confounders) could have had any appreciable effect on the main result of the study - the negative distance trend. This proved not to be the case for any of the studied risk factors. The proximity of residence to the nuclear power plant remains the only plausible explanation at this time.

Recently, results were also reported for a comprehensive meta-analysis (Baker and Hoel, 2007) concerning leukemia in children living near nuclear power plants contained in 17 international studies carried out in Germany, Spain, France, Japan and North America during the period between 1984 and 1999. Distance dependent increased risks of 14%-21% for leukemia in children under nine years of age were observed. When age was expanded to include the population up to 25 years of age, an increased probability of morbidity of 7-10% and increased mortality of 2-18% were observed.

Taken together, these studies are consistent with the hypothesis that children who live near nuclear power plants develop cancer and leukemia more frequently that those living further away. If emissions have been correctly measured by monitoring the areas surrounding nuclear installations, as has been claimed by both the plant operators and the regulatory authorities, then either the currently accepted calculation models for determining radiation exposure of local residents are incorrect, or the biological effects of incorporated radionuclides have been badly underestimated, at least for young children and embryos (human fetuses).

The indications over many years that there are increased levels of morbidity near to nuclear power plants are given added support by results of the KiKK study. The possibility of an increased risk for older children and adults living near nuclear power plants cannot be ruled out. It is important to point out that the radiation health standards established by BEIR VII are consistent with the above research findings regarding both cancer and non-cancer health outcomes given any level of low dose exposures. Furthermore, the BEIR VII committee also concludes "that the current scientific evidence is consistent with the hypothesis that there is a linear, no-threshold dose-response relationship between exposure to ionizing radiation and the development of cancer in humans." In other words, there exists general consensus on the radiation health risks by exposure and living near nuclear power plants. Consequently, the most effective mitigation of such risks will rely on either 1) avoiding the area surrounding the plant, or 2) reducing the nuclear energy operational level, or 3) implementing risk management options based on the mechanistic understanding of cancer or non-cancer epidemiology.

A number of studies have observed that risk of leukemia for children under the age of 5 increases with decreasing distance of residence from nuclear power plants in Germany, the United Kingdom and in the United States (Hoffman, *et al.*, 2007 and Kaatsch, *et al.*, 2007).

The KiKK and USC studies are among the strongest methodologically speaking and utilize state-of-the-art epidemiological methods.

The methodology of modeling the continuous distance variables is adequate. Models applied in the studies show good adaptation to the collected data. The models permit an assessment of the incidence risks associated with distance of the home to the nearest nuclear power plant site.

The risk to contract childhood cancer and leukemia significantly and continuously increases with increasing vicinity of the home to a nuclear power plant. The studies are the methodically most elaborate and comprehensive investigation of this interrelation worldwide. The association between vicinity of the home and increased risk of leukemia has been observed repeatedly in well-designed studies in Germany, the USA and UK.

The causal role of ionizing radiation in these studies remains to be investigated using state-of-the-art genomic, molecular and cellular diagnostics and testing technologies that have only recently become available for medical and healthcare research. The estimated exposures are far below those levels that are known to be leukemogenic or carcinogenic. Some of the associations are ecologic in nature, individual dosimetry is lacking and potentially important confounders such as competing risks (exposure and disease), length of residence, etc., are not measured. These factors can and should be further examined in a site-specific (Category 2) analysis for license renewals.

Groundwater

We are pleased that the NRC has elevated radionuclides released to groundwater to Category 2. The revised GEIS recognizes that "there is a growing concern about radionuclides detected in groundwater at nuclear power plants" (page 4-46, line 27) and that "tritium is the most mobile radionuclide in soil and water." In finalizing its justification for elevating this issue to Category 2, the revised GEIS states, "On the basis of occurrence at several nuclear plants, the impact of radionuclide releases to groundwater quality could be small to moderate, depending on the occurrence and frequency of leaks and the ability to respond to leaks in a timely fashion" (page 4-47, line 33). The Federal Register notice states "this issue is relevant to license renewal because virtually all commercial nuclear power pants routinely release radioactive gaseous and liquid materials into the environment" (page 38122).

Moving forward, this is wonderful news for those communities whose groundwater is impacted by nuclear power plants whose licenses are <u>yet</u> to be renewed. But what does this say for power plants whose renewal applications are either pending or already approved? Will the NRC take a retrospective look at this issue to assure communities that this issue was not overlooked because of bad timing?

In the case of PINGP, there have been documented levels of tritium in the groundwater (equal to the levels cited in the revised GEIS for the Byron plant) that are due to operational problems or leaks. For instance, tritium was detected in the Community's drinking water in the late 1980s/1990s and in wells around the PINGP at above normal background levels. Although the detected levels were below the EPA standard of 20,000 pico curies per liter (pCi/L), the range detected (1,300 – 1500 pCi/L) was above what was detected in other wells (300 – 400 pCi/L). Tritium is still detected in observation wells. Community members are concerned with the history of leakage of tritium from PINGP for which no adequate explanation has yet been given. Even though the Radiological Environmental Monitoring ("REMP") Reports state that the tritium results are far below the EPA drinking water standard, the Community is concerned about how the tritium is getting into the groundwater, why the concentration of detected tritium fluctuates so dramatically, and what is the best way to monitor the leakage to ascertain the source of the leakage, determine precisely whether, how and to what extent the tritium migrates adjacent lands, and to ensure that the levels of tritium do not exceed the EPA standards

over time. According to the 2006, 2007, and 2008 REMP, tritium results for PINGP on-site well P-10 have been relatively high (3773 pCi/L (2006), 2258 pCi/L (2007), and 2060 pCi/L (2008)) compared with the two off-site indicator locations 2 miles away (ranging between <19 pCi/L and 59 pCi/L) and 13 miles away (ranging between <19 and 46 pCi/L). Although dramatic fluctuations in the tritium results were also observed each year, as of yet no explanation has been given for these fluctuations.

We recommend that this issue be evaluated, retrospectively, for all the plants that have either been relicensed or have pending applications.

Historic and Cultural Resources

Historic and cultural resources are discussed on pages 3-78 to 3-80 in Chapter 3 (Affected Environment) and pages 4-116 to 4-119 in Chapter 4 (Environmental Consequences and Mitigating Actions). Chapter 3 mentions State Historic Preservation Offices, but fails to mention Tribal Historic Preservation Offices (THPO), which have responsibilities similar to the SHPO's and should be consulted with as part of the development of the license renewal SEIS.

The process for determining whether a historic or cultural resource is eligible for listing on the National Register of Historic Places (NRHP) should be clarified. On page 3-79 of the revised GEIS, it is stated, "The lead Federal agency or the designated applicant must determine if historic and cultural resources eligible for listing on the NRHP are present." Is not clear whether the "designated applicant" is the applicant for license renewal (i.e., the utility owning or operating the plant) or the owner of the historic or cultural resource that may be impacted by license renewal. This should be clarified. As well, we do not believe that it should be up to the utility owning or operating the power plant to determine whether a property or resource is eligible for listing on the NRHP. This should be done by or in concert with the SHPO and/or a THPO (if appropriate).

Although both chapters 3 and 4 mention that impacts to historic and cultural resources must be "mitigated," there does not seem to be any instruction as to whether mitigation would be required or just suggested.

Avian Mortality

The Prairie Island Indian Community believes that avian mortality should be a site-specific issue (Category 2), as there are many factors, including migration routes and the location of the transmission lines, relative to migratory pathways or corridors, bird species composition, that will be unique for each site.

The 1996 GEIS contained that general statement that "no relatively high collision mortality is known to occur along transmission lines associated with nuclear power plants in the United States, other than the Prairie Island Plant in Minnesota." Since no new

plants have been constructed since the 1996 GEIS was issued, we can only conclude that this issue may be unique for the Prairie Island site. It can't possibly be generic to all plants if it is occurring at one plant. This statement or any mention of the Prairie Island site is not in the revised GEIS.

In the 1970s, Northern States Power commissioned a five-year study to determine whether the transmission lines coming from the PINGP had any impact on migratory birds using the Mississippi River (the PINGP is on the river). The Mississippi River is recognized as a Globally Important Bird Area and Migratory "Flyway" for birds. The Mississippi flyway is heavily utilized because it is uninterrupted by mountains or hills that would interfere with the movements of migrating birds. The Upper Mississippi River and associated ecosystem is very important to birds that are year-round residents and those who are migratory. About 40 percent of all North American waterfowl use the river as a migratory flyway, and 326 species of birds (about 1/3 of all species in North America) use the river corridor as a flyway in their spring and fall migrations. The Mississippi River is a well-known migration corridor for millions of waterfowl, including dabbling ducks, canvasbacks, and scaup that pass through this flyway annually.

The five-year study documented that 453 bird carcasses, representing 53 species, were found along portions of the transmission lines from the PINGP. Sixty-four percent of those carcasses were found along the east-west portions of the transmission lines, which are perpendicular to the Mississippi River or the migration pathway. The report, summarizing the five-year study, concluded with the statement that "the best way to reduce bird kills is to locate transmission lines parallel to bird migration corridors to as great a degree as possible, since locating them perpendicular to the line of migration results in many ore birds being killed."

This issue is not generic, can have many factors, and should be evaluated on a site-specific basis.

EMFs

Health impacts from electromagnetic fields are discussed on pages 4-146 to 4-150. The issue remains a "NA" Category. The statement, "Because of inconclusive scientific evidence, the chronic effects of EMF are considered uncertain, and currently, no generic conclusion on human health impacts is possible" leads us to think that the NRC will err on the side of caution and continue to evaluate this issue on a site-specific basis.

The statement on line 26 of page 4-150, that "If the NRC finds that the appropriate Federal health agencies have reached a consensus that there are adverse health effects, all future license renewal applicants will have to address the health effects in the license renewal process," however, seems to suggest hat the NRC has already determined that there are no health impacts from EMF's.

Since there is no scientific consensus on whether human health is compromised, there is NO assurance that there are NO adverse health effects (i.e., chronic health effects, increased risks to cancer). In fact, the United States EPA's Office of Radiation and Indoor Air offers only two recommendations for people who want to protect themselves from possible risks from power lines to reduce their exposure: "[i]ncreasing the distance between you and the source" and "[l]imiting the time spent around the source." (*See* "Electric and Magnetic Field (EMF) Radiation from Power Lines," available at www.epa.gov/radtown/power-lines.html). This does not seem to be a viable solution for the public.

We recommend that the scope of every SEIS include a discussion of specific health impacts to members of the public resulting from exposure to electromagnetic energy and radiation emanating from the transmission lines.

Mitigation

Although Chapter 4 is titled Environmental Consequences and Mitigating Actions, we see nothing that requires any license renewal applicant to do anything to mitigate identified impacts. Throughout the revised GEIS there are numerous mentions of mitigation or mitigating strategies, however, we are left wondering who is responsible for implementing the mitigation. If the NRC identifies an impact as MODERATE or LARGE, who is responsible for mitigating or lessening the impact? The SEIS cannot simply identify possible mitigation and identify no party responsible for its implementation. The public expects and demands that all impacts be mitigated and that the applicant (i.e., the utility making the money while impacting public resources) be held responsible and accountable.

Spent Fuel

According to the revised GEIS, spent fuel remains a Category 1 issue and will not be evaluated in the SEIS. The revised GEIS cites the current Waste Confidence Rule and the Yucca Mountain License Application as evidence that waste can safely be stored on-site and that a repository will be available someday.

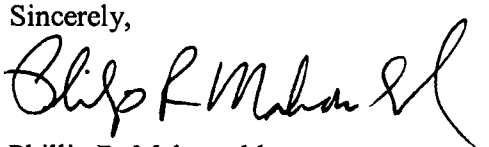
As we mentioned in our introductory comments, the PINGP has a site-specific ISFSI, which will eventually store 98 dry casks indefinitely. Based on recent events, we have no assurance that the spent fuel from the PINGP will ever move beyond the borders of the ISFSI.

In the last year we heard prominent politicians declare that Yucca Mountain was dead. The fact that funding for the Yucca Mountain project has all but ceased supports this position. Revisions to the Waste Confidence rule seem to be stalled due to the uncertainty of the National Repository at Yucca Mountain.

The section on spent fuel in the revised GEIS must be revised to reflect the current reality: that there will be no mined-geologic repository anytime soon and spent fuel will remain on-site indefinitely. Given that the current Administration seems to be starting the process anew, it is uncertain how long it will take to identify a new pathway forward. It is certain that new "solution" is sure to have political and societal objections that will take years to address and spent nuclear fuel will be stranded on-site indefinitely.

We appreciate this opportunity to provide comments to the NRC on this important issue. Please do not hesitate to contact me if you have any questions.

Sincerely,



Phillip R. Mahowald
General Counsel

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