

September 19, 2008

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
NUCLEAR MANAGEMENT COMPANY, LLC	)	Docket Nos. 50-282-LR
	)	50-306-LR
(Prairie Island Nuclear Generating Plant,	)	
Units 1 and 2)	)	ASLBP No. 08-871-01-LR
	)	

**PRAIRIE ISLAND INDIAN COMMUNITY’S REPLY TO NUCLEAR MANAGEMENT  
COMPANY’S AND THE NRC’S ANSWERS TO THE PRAIRIE ISLAND INDIAN  
COMMUNITY’S PETITION TO INTERVENE**

I. INTRODUCTION

The Prairie Island Indian Community (“Community,” “Tribe” or “Petitioner”) files this reply pursuant to 10 C.F.R. 2.309(h)(2) to the answers of the Nuclear Management Company (“NMC”) and the U.S. Nuclear Regulatory Commission staff (“NRC”) to the Community’s intervention petition, submitted on August 18, 2008, on NMC’s application to renew the license for the Prairie Island Nuclear Generating Plant (“PINGP”). As a general comment, both NMC and the NRC made much of the need for expert affidavits to support the Community’s contentions, and in the case of NMC, to characterizing the Community’s contentions, by implication, as a “fishing expedition or generalized suspicions.” The Community emphatically disagrees with this latter characterization, and will address NMC and NRC’s opposition to its contentions in turn and proffer additional support for its contentions in this reply. Although the Community believes that its presentation of its contentions on the technical issues is clear from

the factual explanation provided in the original Petition, an affidavit from our technical expert accompanies this Reply to further supplement some of the more pertinent issues.

## II. Legal Requirements for Contentions

A long line of NRC cases have affirmed the proposition that “[e]xpert support is not required for admission of a contention; a fact-based argument may be sufficient on its own.” *Crow Butte Resources, Inc.* (North Trend Expansion Project), LBP-08-06, 67 NRC 241, 317 (citing *Duke Energy Corporation* (Oconee Nuclear Station, Units 1, 2 and 3), CLI-99-11, 49 N.R.C. 328, 342 (1999)). Furthermore, a petitioner is not “require[d]... to prove its case at the contention stage,” and “need not proffer facts in formal affidavit or evidentiary form sufficient to withstand a summary disposition motion,” *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-7, 43 N.R.C. 235, 249 (1996) (citing *Georgia Institute of Technology* (Georgia Tech Research Reactor), CLI-95-12, 42 N.R.C. 111, 118 (1995)). The Community believes that it has shown sufficient information to show that a genuine dispute exists and reasonably indicating that a further inquiry is appropriate. *See* *Yankee Nuclear Power Station*, 43 NRC. at 249 (citing *Costle v. Pacific Legal Foundation*, 445 U.S. 198, 204, 100 S.Ct. 1095, 63 L. Ed. 2d 329 (1980); *Vermont Yankee Nuclear Power Corp. v. NRC*, 435 U.S. 519, 554, 98 S. Ct. 1197, 55 L. Ed. 2d 460 (1978)). Moreover, as previous NRC case law has emphasized, “[a]lthough the requirements of [10 C.F.R. Part 2] must ultimately be met, every benefit of the doubt should be given to the potential intervenor in order to obviate dismissal of an intervention because of inarticulate draftsmanship or procedural or pleading defects.” *Sequoyah Fuels Corp.* (Gore, Oklahoma Site Decontamination and Decommissioning Funding), LBP-94-8, 39 NRC 116 (1994). Finally, “the requirement for specificity and factual support is not intended to prevent intervention when material and concrete issues exist.” *Fansteel, Inc.* (Muskogee, Oklahoma,

Site), CLI-03-13, 58 NRC 195, 203 (2003) (citing *Power Authority of the State of New York* (James A. Fitzpatrick Nuclear Power Plant, Indian Point, Unit 3), CLI-00-22, 52 NRC, 266, 295 (2000)). Therefore, if an application itself lacks necessary detail, “a petitioner may meet its pleading burden by providing ‘plausible and adequately supported’ claims that the data are either inaccurate or insufficient.” *Fansteel*, 58 NRC at 203 (citing *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 207 (2000)). “[I]f the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner’s belief” would constitute sufficient information to show that a genuine dispute exists . . . .” *Fansteel*, 58 NRC at 203 (discussing petition to intervene under 10 C.F.R. § 2.714(b)(2)(iii), the Subpart G analogue of 10 C.F.R. § 2.1306).

NMC and the staff also challenge some of the Community’s contentions as “outside the scope” of the proceeding. Although, except as previously stated in the Petition, the Community disputes most of these assertions. The Community has merely sought to raise legitimate concerns that it believes are or should be cognizable in this proceeding. The federal government, including the NRC, has the same trust responsibility to the Community that it has to all federally recognized tribal governments. While these trust responsibilities may not dictate a course of action that lies clearly outside the NRC’s rules of practice, the Community has sought to raise its important concerns to the NRC. The Community does not necessarily want to prevent the NMC license from being renewed. Rather, the Community wants to make sure that the regulations for relicensing are followed, the regulatory requirements are met, and that the plant is safe, and that all environmental impacts are identified, and mitigated, if necessary.

The NMC Answer, in regard to one of our contentions, noted that the Community is participating as a cooperating agency in the preparation of the Environmental Impact Statement in matters within the Community's expertise on the PINGP license renewal application: "Therefore, the Community will have a direct means of ensuring that its views are considered." NMC Answer at footnote 24. While the Community appreciates that the NRC has recognized its expertise in certain matters by designating it as a cooperating agency, there is no assurance that the NRC will accept any of the Community's views. Under the Memorandum of Understanding between the Community and the NRC that memorializes the cooperating agency relationship, all decision-making authority on the EIS rests with the NRC. In addition, at least in the reactor licensing arena, the NRC's view is that an EIS is solely a disclosure document. Under this perspective, the Community has no assurance that *the NRC* will do anything to mitigate and potential detrimental environmental impacts on the Community. Therefore, the Community has petitioned to intervene to ensure that potential adverse environmental impacts are addressed at the source, the NMC Environmental Report.

The Community attempted to negotiate a settlement of most, if not all, of these important issues with NMC starting in January of this year to obviate the need to intervene in the licensing proceeding. Although NMC representatives have met with the Tribal Council and Community representatives on these issues, NMC did not display any concerted interest in coming to closure on these issues. As the deadline for submitting an intervention petition approached, the Community felt that it had no recourse but to prepare and file an intervention petition. *See* Declaration of Philip R. Mahowald dated September 19, 2008 (Mahowald Declaration II) at Paragraph 2.<sup>1</sup>

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<sup>1</sup> Although neither the NRC nor NMC challenges the Community's standing, the NRC notes a prior Board decision which required some evidence demonstrating the Community's intent to participate in the proceedings. Unlike the

## II. DISCUSSION OF ADMISSIBILITY OF PETITIONER'S CONTENTIONS

### A. Contention 1

As a threshold matter, the NMC and NRC objections seek to place the Community in an impossible position. How can the Community demonstrate the inadequacy of the Applicant's prior survey work when the Applicant has not provided the Community with the documentation and information it needs to evaluate the sufficiency of the survey work? For example, two additional, previously-undiscovered sites of archaeological and cultural significance (burial mounds and an artifact scatter) were discovered in the 1980s when the discharge channel was sited and constructed. Significantly, these sites were located in the general area where the cooling towers were originally supposed to be located. The fact that they were not discovered until the 1980s after the entire area of construction was supposedly surveyed in the 1960s is proof that the survey work is incomplete.

One of the most important issues for the Prairie Island Indian Community is the condition of the many archaeological sites within the PINGP. The Community is unable to agree with the NMC conclusion that the steam generator replacement (SGR) activities for Unit 2 would have little or no archeological impact. The Community does not agree with the NMC conclusion that steam generator replacement activities for Unit 2 would have little or no archeological impact. First of all, the applicant provides no more than a simple conclusory statement that the Steam Generator Replacement for Unit 2 would have no impact on cultural resources because the Unit 1 Steam Generator Replacement had no impact. No map is provided of the site identifying where the activities or construction will occur. There is no assurance provided, other than the

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previous case, which was prosecuted by outside legal counsel on behalf of the Community, the instant petition has been filed on behalf of the Community by the Community's in-house General Counsel. Nevertheless, and to avoid any unnecessary delay, Paragraph 2 of Mahowald Declaration II confirms that the Petition to Intervene was approved and authorized by a July 16, 2008 motion of the Tribal Council.

applicant's statement that those activities would be confined to previously disturbed areas and a vague description of a procedure for approving site excavation activities. As the 106 Group Report noted, undisturbed areas of the sites should be considered to have inherently high potential to contain intact precontact archaeological sites. The Community needs assurance that the Unit 2 Steam Generator Replacement activities will be confined to previously disturbed areas of the site. It is the applicant's responsibility to provide sufficient information in its ER to confirm its conclusion on whether there will be significant impacts on historic or archeological resources.

The Community would also note, that unlike what was alleged in the NMC answer, the Community does not believe that the 106 Group assessment was deficient. The point was that, based on the 106 Group report, it was imperative for the applicant to conduct a field investigation of the site to determine where areas of traditional cultural property might exist. This would be the pre-requisite to ensuring that future site activities would avoid any of these areas. Furthermore, the fact that spent fuel storage is a Category I issue is not relevant to a discussion of site-specific historic or cultural resource impacts. Additional storage can be directly related to license renewal, and the applicant must undertake an analysis of whether the expansion of the ISFSI will significantly affect cultural resources.

We have learned that there have been some impacts to at least two archaeological sites within the plant boundaries. Indeed, in the Applicant's letter to the MN State Historic Preservation Office (SHPO) transmitting and discussing the aforementioned report from the 106 Group, Mike Wadley, Site Vice-President for the PINGP, states "the assessment [by the 106 group] also identified areas that are thought to be previously disturbed from original construction of the PINGP." ER at D-3. As disclosed during the August 21, 2008 site visit, one of these sites,

21GD0059, a human burial mound site, was impacted by the construction of the cooling towers, may now be under 12 feet of fill or may have been destroyed. It is precisely because of past damage or destruction of archaeological sites that the Community has concerns about how the steam generator replacement project, and other future construction (such as the expansion of the ISFSI, proposed for 2020) might impact previously unrecorded archaeological resources. Past survey work is no guarantee.

In the 1960's Northern States Power (NSP), then the owner and operator of the PINGP, contracted with Dr. Eldon Johnson (State Archaeologist) to conduct an archaeological survey of the project area, which included excavations of existing burial mound sites, two of which were well-outside the project area (Birch Lake Mounds and Bartron Village).

A Final Environmental Statement (FES), prepared by the United States Atomic Energy Commission (AEC), for the original operating licenses for the PINGP, was released in May of 1973. In the FES there is some discussion about impacts to archaeological sites. A table lists some of the sites within the PINGP, but not all of the sites within the PINGP. Most notably, there is no discussion regarding the archaeological site near the cooling towers (21GD59), as discussed above. Correspondence from the Advisory Council on Historic Preservation (ACHP) (March 1973) indicated that the AEC's draft environmental statement did not contain sufficient information in order to allow the Council to comment substantively. In response to the ACHP's letter, the FES stated concluded, "that only the Barton site is sufficiently close to the plant that an impact is possible." The FES goes on to state that the Barton site is beyond the limits of plant construction and was not disturbed. There is no mention whatsoever of whether a burial mound site much closer to the plant (21GD59) that was impacted in any way. This site was actually outlined on a map provided in the FES. *See* Page II-30 of FES.

Once again, the Community raises these issues because it appears that the original survey work (late 1960's) seems to be the basis for all other work within the plant boundaries, including the steam generator replacement project. According to the circa 1990 EA for the ISFSI, "an archaeological survey was conducted in 1967, and nothing significant in the immediate area of the power plant or ISFSI was found." This was the work conducted by Dr. Johnson. The Community does not raise this issue to challenge the need for spent fuel storage (a Category 1 issue, as pointed out by the Applicant on page 16 of their reply), but to demonstrate that these past surveys have, in fact, been used to support other projects within the PINGP boundaries, such as the steam generator project and the ISFSI construction and expansion. There may not be a proposal before the NRC to expand the waste stored at the ISFSI, but there is one at the state.

Furthermore, the fact that spent fuel storage is a Category I issue under NRC regulations is not relevant to a discussion of site-specific historic or cultural resource impacts. The Category 1 designation should not provide a blanket exemption for all applicant activities that might be related in some way to the Category 1 issue. Additional storage for spent fuel can be directly related to license renewal, and the applicant must undertake an analysis of whether the expansion of the ISFSI will significantly affect cultural resources.

The Community does not dispute that past surveys were conducted. The Community disputes the notion that these past surveys are somehow sufficient to determine whether future, construction, even in "previously disturbed areas," will have no impact on archaeological sites. The four archaeological studies (referenced in the ER on page 2-38 and noted by the Applicant in its reply comments on page 12) were not in areas close to where the steam generator replacement project activities are likely to be (around the SW quarter of the NE quarter of Section 5, T113N, R15W). Likewise, studies conducted in 1991, as part of NMC's service road construction (then

Northern States Power), were in the western half of Section 6 and the northeastern quarter of Section 5, T113N, R15W. (106 Group Report at page 6). None of these studies were focused in the area close to where NMC proposes to construct several temporary buildings, as well as office space and a decontamination building, in support of the SGR. It should also be noted that one of these four surveys resulted in the discovery of two previously unrecorded sites.

In regard to the applicant's excavation procedure, NMC continues to presume that the Community should trust it to follow through with robust implementation of their procedures. Little attention was paid to cultural properties when the original plant was constructed and the Community needs assurance that this cavalier attitude towards important cultural resources associated with the Community's ancestors will not ever prevail again. Consequently, the Community believes the applicant has an obligation to develop a cultural resources protection plan based upon an on-site cultural resources survey.

The Applicant, in its Answer, states that Community's assertion "that the 106 Group seemed aware of the plans for temporary facilities related to the Unit 2 steam replacement project (Petition at 7) is irrelevant." NMC's Answer at page 12. This argument misses the point. Past impacts to archaeological sites during the construction of the PINGP, the later discovery of two archaeological sites in the 1980s, and the 106 Group's conclusion that the study area (which was noted to be the entire area within the PINGP) "is considered to have inherently very high potential to contain intact archaeological remains," all support the Community's assertion that additional survey work is needed before the steam generator replacement project begins. the Community is left wondering whether this same conclusion would have been reached had the 106 Group known that NMC proposes to construct several temporary buildings, as well as office space and a decontamination building, in support of the SGR.

## B. Contention 2

Applicant's assessment of SAMA alternatives in the ER is inadequate. The Community does not claim that the MACCS2 code is outdated, the focus of the NMC and NRC Answers on this contention, but rather that the Sandia Site Restoration Study provides information related to clean-up costs that must be factored in to the Applicant's SAMA analysis. As we noted in our pleading, the Licensing Board in the Indian Point license renewal proceeding admitted a similar contention. NMC and the NRC attempt to distinguish that case because there is no large-scale urban area located next to PINGP. However, the Site Restoration Study analysis applied to a broad range of environments, not just urban areas. The data in the Study can be useful in analyzing SAMA alternatives in any of these environments. It is reasonable to assume that the applicant's SAMA analysis could have produced different results – identifying larger benefits related to the costs of the SAMA alternatives applicable to the mitigation alternatives for PINGP – if the data from the Site Restoration Study would have been factored into that analysis. Although the area around PINGP is not an “urban, densely populated area,” it is unique, nevertheless. It is the only home of the Prairie Island Indian Community. Furthermore, it is an environment where the survival of the Community is dependent on tourist revenue. It is imperative that the SAMA analysis be as robust as possible in order to ensure that protection is provided to the Community and the tourist population.

### C. Contention 3

As indicated in the Petition, the Community believes that the Applicant's threatened and endangered species analysis is deficient in regard to the Higgins Eye Pearly Mussel ("Higgins Eye") and in regard to the potential mortality of threatened or endangered avian species.

#### Higgins Eye Pearly Mussel

According to the NRC regulations in C.F.R. § 51.53(c)(3)(ii)(E):

All license renewal applicants shall assess the impact of refurbishment and other license renewal-related construction activities on important plant and animal habitats. Additionally, the applicant shall assess the impact of the proposed action on threatened or endangered species in accordance with the Endangered Species Act (emphasis added).

Applicant has not fulfilled its responsibility to assess the impact of the proposed renewal of the license on the Higgins Eye, an endangered species. Any such assessment must be comprehensive and adequate to reach a conclusion on what the scope and magnitude of the impact would be on Higgins Eye, or any other threatened and endangered species. The Applicant's conclusion in regard to the Higgins Eye, in Section 4.7 of the ER (Threatened and Endangered Species), is that "it is conceivable that some larval *higginsii* will be carried downstream into the power plants intake screenhouse." No quantification of losses or further assessment of the implications of this observation are provided. The importance of assessing the implications of this observation is only heightened by the further observation in the ER "...that even under the best of circumstances, the mortality rate of the early life stages (of the Higgins eye) is very high and the glochidia (early larval stage) that do not attach themselves to a host quickly have a low probability of survival." ER at 4-25.

NMC's Answer states that "this allegation (Contention 3) does not raise a genuine dispute with the Application because it focuses on the wrong section of the ER. Section 4.3 of

the ER addresses the issue of entrainment in accordance with 10 §CFR 51.53(c)(3)(ii)(B) and does not relate the requirements in C.F.R. § 51.53(c)(3)(ii)(E).” NMC’s Answer at page 22. The Community focused on Section 4.3 (Entrainment of Fish and Shellfish), however, precisely because of the statement made by the Applicant in the Endangered and Threatened Species section of its ER, that “it is conceivable that some larval *higginsii* will be carried downstream into the power plants intake screenhouse.” The statement made in the ER suggests that impacts to the Endangered Higgins Eye would result from the entrainment of Higgins Eye larvae. Hoping to gain a better understanding of how impacts to the Higgins Eye (i.e., from entrainment) might have been assessed by the Applicant, the Community evaluated Section 4.3 (Entrainment) to determine whether there was any specific discussion of the Higgins Eye relative to the entrainment of its early larval life stage. The Community was surprised to see no specific entrainment assessment relative to the Endangered Higgins Eye in the ER.

Section 4.10 of Regulatory Guide 4.2S1 (Threatened and Endangered Species) instructs an applicant to make specific reference to any adverse impacts on listed and candidate threatened or endangered species or critical habitat found in the review of the entrainment of fish and shellfish in early life stages (RG 4.2S1 at page 21 of 41). A review of Section 4.3 (Entrainment of Fish and Shellfish in Early Life Stages) found no such reference to any adverse impacts on the Endangered Higgins Eye, even though NMC concluded in Section 4.7 that “it is conceivable that some larval *higginsii* will be carried downstream into the power plants intake screenhouse.” The applicant has not provided any information on the magnitudes of the word “some,” nor more importantly, what the implications are for the survival of this endangered species.

NMC further asserts “that any allegation that Section 4.3 of the ER must analyze the impacts on entrainment on the Higgins eye pearly mussel is an impermissible challenge to the

NRC rules.” NMC at 22. NMC then goes on to cite 10 CFR § 51.53(c)(3)(ii)(B), which requires:

If the applicant’s plant utilizes once-through cooling or cooling pond heat dissipation systems, the applicant shall provide a copy of current Clean Water Act 316(b) determinations and, if necessary, a 316(a) variance in accordance with 40 CFR part 125, or equivalent State permits and supporting documentation. If the applicant cannot provide these documents, it shall assess the impact of the proposed action on fish and shellfish resources resulting from heat shock and impingement and entrainment.

Although the permit is attached to the ER (Attachment B) and information related to NMC’s Clean water Act Section 316(b) determination was mentioned and discussed in the ER, the 316(b) report was not attached to the ER. The permit states that NMC must submit the results of a required Impingement Mortality and Entrainment Study, which shall provide information to support the development of a calculation baseline for evaluating impingement mortality and entrainment consistent with the 316(b) rule. This report was to have been submitted to the Minnesota Pollution Control Agency by October 26, 2006.

The Community’s focus is not on entrainment generally, as reflected in the Clean Water Act permits. Instead, the Community’s concern is with an assessment of the impacts on endangered species. Applicant has not cited anything from its Clean Water Act permit that addresses the Higgins Eye.

In summary, the Community notes that that NRC Regulatory Guide 4.2S1 instructs the Applicant that in evaluating the entrainment of fish and shellfish early life stages, the Applicant must also evaluate adverse impacts to listed and candidate threatened or endangered species. The Community does not believe the Applicant has done a sufficient job in this respect for the reasons cited above. Although the Applicant has provided information, as the NRC pointed out in its answer, its assessment of the impacts was inadequate.

### Avian Mortality of Endangered or Threatened Species

Both NMC and the NRC challenge this contention based on the fact that avian mortality and transmission lines is a Category 1 issue (it is worth noting, however, that the Applicant discussed the high incidence of avian mortality in the ER (Section 3.1.6.3), but did not mention that the issue was a Category 1 issue). The Community's contention is based on the inadequacy of the Applicant's analysis of the potential impact to threatened or endangered species in respect to the transmission lines. Although transmission lines may be a Category 1 issue, the need for the Applicant (and the NRC) to address the Category 2 issue of impacts to threatened or endangered species is an overarching issue that requires an analysis by the Applicant. It would seem absurd, for example, to argue that although 50 bald eagles a year were being killed by the transmission lines, the Applicant would have no responsibility to evaluate this impact because transmission lines were a Category 1 issue.

The Applicant's other argument against the Community's contention is that there is no connection between license renewal and the avian mortality due to the transmission lines because the transmission lines need to be maintained anyway. This is irrelevant. The Applicant is obligated to assess how many more threatened or endangered species, if any, would be lost to transmission lines for an additional twenty years of operation. The statements in the ER on avian mortality, and the critical lack of information in the ER explaining either the high rates of avian mortality or what the impact might be to threatened or endangered species, is the basis for the Community's concern. Section 4.10 of NRC Regulatory Guide 4.2S1 is very detailed and it references the NRC regulations in 10 CFR 51.53(c)(3)(ii)(E) to the effect that it "...requires, in part, that the applicant shall assess the impact of the proposed action on threatened or endangered species in accordance with the Endangered Species Act."

The Community is concerned over the high incidence of avian mortality that has been demonstrated in the past. It came as a surprise to learn, in the ER, that 453 birds were killed on the east-west transmission lines during the 1973-1978 period. In addition, there is no explanation of why avian mortality was so high at the PINGP during that five-year period. The reviewer of the ER is left to wonder what happened since 1978 in terms of avian mortality. Did the Applicant make operational changes at the PINGP to reduce avian mortality or did it just stop looking for dead birds? Since there is no discussion about any changes the Applicant made that would reduce (or mitigate) avian mortality, the answer appears that it just stopped looking. This conclusion seems to be supported by the ER's disclosure that "very few bird carcasses have been observed at PINGP or along associated transmission lines since 1978, but systematic searches or formal avian collision studies have not been conducted." ER at 3-13. Furthermore, the ER did not disclose whether there were any Threatened or Endangered migratory bird species killed during that five-year period (the ER only notes that 453 birds carcasses, representing 53 species). ER at 3-13. The high incidence of avian mortality in the past, along with no explanation being provided about what has happened in terms of avian mortality since 1978, and the fact that the Applicant is no longer conducting any systematic searches or formal avian collision studies, raises the real possibility that endangered or threatened avian species might be affected by the transmission lines. The fact that the PINGP sits in the middle of the Mississippi River Flyway, a migratory flyway for birds and a "Globally Important Bird Area," only increases this possibility.

The NRC, in defending the Applicant's ER, states "Moreover, the Petitioner's asserted omissions are incorrect. For example, the alleged failure to mention 'that the PINGP sits in the Mississippi River flyway', (Petition at 17), is flatly contradicted by the ER, which states, 'This section of the corridors [where the carcasses where collected] is perpendicular to the bird

migration corridor along the Mississippi River’.” NRC Answer at 25. The mere mention of the “bird migration corridor along the Mississippi River” cannot be equated with the importance of the Mississippi River Flyway and the possibility that threatened or endangered species may be affected. As the Community stated in its Petition, the Mississippi flyway is heavily utilized because it is uninterrupted by mountains or hills that would interfere with the movements of migrating birds. About 40% 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.

According to the U.S. Fish and Wildlife Service, 836 species of birds are protected under the Migratory Bird Treaty. Of this number, 78 bird species are listed as Endangered and 14 species are listed as Threatened. The agency also notes that “strikes at high tension transmission and distribution power lines very conservatively kill tens of thousands of birds annually.” The Community believes that the applicants ER is deficient in not evaluating the impact to endangered or threatened avian species from the Applicant’s transmission lines, which demonstrates a genuine dispute on a material issue.<sup>2</sup>

#### D. Contention 4

This is an important issue to the Community and to any population residing near a nuclear power plant. The Community realizes that this is typically a Category 1 issue. The Community firmly believes, however, that the Commission must address the emerging studies such as the KiKK Study conducted in Germany as new and significant information. As set forth

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<sup>2</sup> Contrary to the NRC’s Answer, it is not the Community’s obligation to demonstrate that threatened or endangered avian species are being affected. That is the responsibility of the Applicant and the NRC.

in the Ulm Physician's Initiative, attached as Exhibit F to the Mahowald Declaration dated August 18, 2007, the KiKK study confirms that children that are living near nuclear power plants develop cancer and leukemia more frequently than those living further away. While the KiKK Study is admittedly based on a study of German nuclear power plants, one critical aspect of the analysis is relevant in this proceeding regarding the PINGP. The Ulm Physician's Initiative states:

If emissions have been correctly measured by monitoring the areas surrounding nuclear installations, as has been claimed by both the NPP operators and the regulatory authorities, then either the current accepted calculation models for determining radiation exposure of local residents are incorrect, or the biological effects of incorporated radionuclides have been badly underestimated, as least for young children or embryos.

The results of the KiKK study compel us to critically review not only the measurement of emissions by the operators but also the rules for calculating dose measurement and the risk models on which they are based. Any of these three steps could help solve the contradiction between the allegedly low doses and the severe effects referred to by the authors.

Mahowald Declaration, Exhibit F at 3. In other words, the previous modes of measuring emissions and reporting them need to be tested and disclosed to the public, and “[p]revious assumptions about radiation risk, and the other emission limits for radiation that are based on these, need to be critically re-examined and adapted to current international research findings.” *Id.* at 4.

Based on the mounting evidence that even low dose exposure to radiological emissions presents significant adverse health risks to infants and children within a 5 km radius of nuclear power plants, the Community contends that the Applicant must disclose more detailed monitoring results to the Community and its residents living well within that radius so they can establish baselines for evaluating and measuring potential adverse health effects. The Applicant separately discloses the results of its river and groundwater monitoring as part of its “Annual

Radiological Monitoring Program (REMP) Report.” Those reports not only disclose a significant “unplanned” release of tritium on or about August 5, 2006, but also demonstrate that the tritium concentration levels in drinking water have been steadily increasing since 1995. What is the source of the tritium in the drinking water? Why are the tritium concentrations increasing every year? In addition, especially give these troubling trends of increasing tritium levels, the Applicant’s quarterly or annual tritium disclosures are woefully inadequate. The averaging of this data does not permit the Community to adequately monitor the magnitude of individual releases of river or groundwater contaminated with tritium. Daily measurements must be provided so that the Community may establish correlating baselines to monitor potential adverse health impacts.

Accordingly, the Community states a viable contention in this proceeding because NMC’s ER fails to adequately disclose its radiological emissions, including the presence of tritium and other radiological contamination in Mississippi River water and ground water surrounding the PINGP.

#### E. Contention 5

Even though this is clearly a stand-alone contention, the Community finds NMC’s reference to Contention 5 as a “re-packaging” of Contention 4 troublesome. It is not a “re-packaging” and we hope that NMC’s use of that term doesn’t reflect a negative attitude towards environmental justice considerations. The Community is not challenging NRC rules. It instead questions whether the Applicant has met the requirements set out in RG 4.2S1 (below) to address EJ issues in the ER.

The Community wants to emphasize several points about this contention. First, the applicant cannot absolve itself of responsibility for analyzing environmental justice issues. It is

clear from NRC Regulatory Guide 4.2S1 that the NRC staff expects the applicant to analyze environmental justice issues. Second, the applicant's ER addresses environmental justice. This not only belies NMC's statement that the applicant has no responsibility to address environmental justice, but it is also notable in that the applicant's discussion of environmental justice does not contain any evaluation of impacts on the minority or disadvantaged communities identified in the ER. Therefore, the Community believes that the ER is deficient in this regard. Third, the Community does not accept NMC's argument that the Community's concern about the radiological impact to the Community as a minority population is a challenge to NRC rules, i.e., it is a Category 1 issue. Even though radiation protection in general may be a Category 1 issue, the Category 2 issue of environmental justice is an overarching site specific issue, and if there is a disproportionate impact on a minority group from license renewal activities, including radiation protection, it must be evaluated. In summary, the Community is raising two issues about the adequacy of the applicant's environmental justice analysis. One is the absolute lack of any evaluation of impact in the ER on minority groups. The applicant has not supplied any information from which the Commission may properly consider, and publically disclose, environmental factors that may cause harm to minority and low-income populations that would be disproportionate to that suffered by the general population. The second is the absence of any analysis in the ER on the potential impact of radiation on a potentially predisposed cancer minority group, the Prairie Island Indian Community. In this regard, the Community is alleging that the proposed action may have significant adverse impacts on the minority group identified in the ER, the Community, because the impacts to the Community were not adequately evaluated.

## F. Contention 6

The Community has attached an affidavit from our technical expert Mr. Christopher I. Grimes. In Mr. Grimes affidavit, he addresses the Community's contention on containment coatings. Mr. Grimes states:

The operation of the emergency core cooling systems (ECCS) depends on the ability to draw cooling water from the containment sump after a loss-of-coolant accident (LOCA) has occurred. The NRC issued Generic Letter 2004-02 (GL 04-02) to ensure that licensees carefully evaluated sources of debris in the containment and ensured that debris blockage of the sump screens would not prevent proper operation of the ECCS. A significant source of debris is the coatings on structures and components inside containment and on the interior surface of the containment. Operating experience has demonstrated that, if not managed well, these coatings can begin peeling off, which increases the potential for forming debris. In their response to GL 04-02, NMC describes how the containment inservice inspection program can provide a means to monitor the condition of coatings. However, for license renewal, NMC stated that the coatings have no intended function. The blowdown forces associated with a LOCA will cause a certain amount of debris as a result of the jet impingement on coatings, insulation and adjacent light structures. The amount of debris that is formed can be minimized by a good housekeeping program for loose materials, well designed and maintained insulation materials, and a condition monitoring and maintenance program for coatings.

In its response, NMC stated that all coatings were assumed to fail for the GL 2004-02 analysis; however, it is not clear whether that only applies to coatings in the vicinity of the LOCA blowdown. If not properly monitored, the coatings might fail in such a way as to prevent proper operation of the emergency core cooling systems. The PINGP application is deficient because it does not describe an effective aging management program for coatings which would ensure that the debris generated by a design-basis accident is bounded by the assumptions in the analysis performed for GL 04-02. The evaluation criteria for aging management programs include credit for existing programs, like the containment inservice inspection program. In addition, irrespective of whether different requirements might evolve from the ongoing regulatory

oversight program, NMC has an obligation to demonstrate that it meets the requirements in the license renewal regulations based on the current regulatory requirements and guidance.

#### G. Contention 7

An important part of the NMC and NRC answers to our contention was to dispute the applicability of the Declaration of Dr. Richard T. Lahey, Jr. on this issue in regard to the Indian Point license renewal application. Mr. Christopher I. Grimes, the Community's technical expert, addresses the objections to the Lahey Declaration:

I have reviewed the declaration of Dr. Richard T. Lahey, Jr., Professor of Engineering at the Rensselaer Polytechnic Institute in Troy, New York, that was submitted with the Petition to Intervene in the license renewal application for Indian Point Units 2 and 3 (IP2 and IP3). While the Indian Point plant has a different PWR design and site, there are aspects of Dr. Lahey's concerns that are applicable to PINGP Units 1 and 2. In particular, Dr. Lahey describes how neutron bombardment, or fluence, causes embrittlement of the reactor vessel and internals. While PINGP Units 1 and 2 do not have the same belt-line conditions Dr. Lahey describes for IP2 and IP3, the concerns about the adequacy of the monitoring and aging management program for reactor vessel internals is applicable. If the core support structure fails during the loading conditions resulting from a design basis accident or transient, the resulting core geometry could not be cooled by the Emergency Core Cooling Systems as the design intended. NMC describes a commitment to develop and implement the PWR Vessel Internals Program in Section B.2.1.32 of the LRA. However, the program description lacks sufficient detail to determine whether it can manage the effects of embrittlement for the period of extended operation.

As Mr. Grimes notes, the deficiency in the application is that the NMC commitment to develop and implement a PWR Vessels Internal Program does not provide the detail to determine whether the program can manage the effects of embrittlement for the period of extended operation. The mere promise to develop a program does not satisfy the applicant's responsibilities under the license renewal rule.

Further, the LRA describes how the embrittlement program has been enhanced to save capsules for future use. Irrespective of whether the number of capsules available is described in

the USAR, as stated in the NMC response, the LRA does not provide a an adequate description of the program that will rely on saved capsules to demonstrably manage fluence monitoring to manage embrittlement of the reactor vessel and reactor internals for an additional 20 years.

#### H. Contention 8

An affidavit from the Community's technical expert, Christopher I. Grimes, is filed with this Reply to clarify and supplement the factual basis for several of the contentions that we offered in our pleadings. With respect to this contention, Mr. Grimes states:

Nickel-alloy components are susceptible to primary water stress corrosion cracking (PWSCC). As part of the efforts to improve the methods to identify and maintain a broad range of materials degradation, the industry undertook a Materials Reliability Program (MRP) which included, among other things, plans to develop augmented inspection methods to detect and correct PWSCC in nickel-alloy components. After continued incidents of cracking in nickel-alloy welds in reactor head penetrations and significant degradation was discovered in the reactor vessel head at Davis Besse, the NRC issued an order EA-03-009, "Issue of Order Establishing Interim Inspection Requirements for Reactor Pressure Vessel Heads at Pressurized Water Reactors." That Order established the interim inspection requirements until the generic MRP efforts develop augmented inspection and repair practices. The NRC's Interim Staff Guidance for License Renewal for the aging management program for PWSCC in nickel-alloy components (LR-ISG-19B) states that the program is under development consistent with the interim inspection requirements in the Order. In the LRA, NMC simply explains how guidance is under development, they will comply with applicable NRC Orders and implement applicable NRC Bulletins, Generic Letters and staff-accepted industry guidelines. The LRA does not explain how the existing interim inspection requirements satisfy the requirements of an effective aging management program.

The contention challenges the adequacy of the applicant's aging management program because the applicant defends the adequacy of their program based on waiting further instructions from the NRC and more research results and guidance from the industry. 10 CFR 50.21 requires the applicant to demonstrate the adequacy of the proposed aging management program. If the adequacy of the program depends on the interim inspection requirements, the applicant must show how these requirements demonstrate the adequacy of the aging management program.

Furthermore, the operating experience described in the applicants LRA is too vague to determine whether the existing interim inspection program

#### I. Contention 9

An affidavit from our technical expert, Christopher I. Grimes, is filed with this Reply to clarify and supplement the factual basis for several of the contentions that we offered in our pleadings. With respect to this contention, Mr. Grimes states:

Degradation of buried and inaccessible systems, structures and components is difficult to manage because of the limited accessibility. Moreover, because of recent events involving unplanned, unmonitored releases of radioactive liquids into the environment, the NRC established a Liquid Radioactive Release Lessons Learned Task Force (LLTF) to review the industry experience and public health impacts. The LLTF noted that leakage that enters the ground below the plant may be undetected because there are generally no NRC requirements to monitor the groundwater onsite for radioactive contamination. The LRA describes a variety of buried tanks and systems. In Section B2.1.8, NMC describes the “Buried Piping and Tanks Inspection Program.” The program does not commit to conduct any inspections of buried tanks or systems to establish baseline conditions to evaluate the effectiveness of the program in the future, and only commits to conduct inspections if the opportunity arises, with at least one inspection occurring within ten years. The LRA states that the program is not applicable for some systems because there are no buried components or piping. For those components and systems for which the program is applicable, it is not clear whether the components and systems normally contain radioactive liquid or might contain radioactive liquid as a result of an accident or transient. Significant degradation could already exist in those buried components and systems for which the program applies. The LRA does not explain how the proposed program satisfies the elements of an effective aging management program.

The Community is concerned about the integrity of buried components, tanks and systems that are within the scope of license renewal that could potentially contain radioactive fluid either during normal operation or as a result of accident or transient plant conditions. The contention describes a broad range of events involving uncontrolled and unmonitored leakage of radioactive fluids to the environment. NMC’s simple assertion that “that there in fact are no buried

components within the scope of the license renewal rule at PINGP that contain radioactive liquids” is not reassuring.

#### J. Contention 10

The Community thanks the NRC and NMC for clarifying the treatment of transformers in license renewal because it is extremely difficult for the public to understand how these commodities are treated in the scoping and screening process. While it is difficult for the Community to understand why a transformer is an “active” component, we now recognize that it is an established NRC position. The Community would further note that the NRC, in its answer, stated that our citation to 10 C.F.R. § 54.4 was incorrect and that it should be 10 C.F.R. § 54.21. We understand the distinction. We referenced 10 C.F.R. § 54.4 because we were concerned that all of the blackout rule components were captured because they were added as a supplement to the Application after the NRC acceptance review.

#### K. Contention 11

The Community’s main concern with this issue is that the NMC application has only a very vague description of its program to manage the effects of flow accelerated corrosion (FAC). Dr. Hopenfeld’s concerns related to the limitations of CHECWORKS to manage FAC are concerns that generally apply to all nuclear power plants, and Dr. Hopenfeld’s qualifications on this topic are clearly described in the Indian Point case. NMC admits in its Answer that CHECWORKS is used at PINGP to manage FAC, and they would have the Community exhaust the record to determine how long that program has been used at PINGP to demonstrate the extent to which it should have been benchmarked.

Riverkeeper and Dr. Hopenfeld referenced NUREG/CR-6936 to demonstrate that leakage events continue to occur despite the efforts of such programs. The purpose of that report was to

study the literature on methods for probabilistic structural mechanics; thus, we understand it is not a definitive resource on FAC management. That report describes FAC as “well understood.” While that may be true for the flow assisted erosion that is generally associated with FAC, it is not clear that the means to consistently manage this degradation mechanism is as well understood, despite the EPRI guidelines. We believe that is adequately demonstrated by the events described in this contention, especially the pipe rupture at the Mihama Power Station in Japan discussed in the NRC Information Notice 2006-008.

NMC contends that the mere assertion that the FAC program is “consistent with the recommendations of NUREG-1801, Chapter XI, Program XI.M17, Flow-Accelerated Corrosion” is a sufficient demonstration of the adequacy of aging management pursuant to 10 C.F.R. § 54.21(a)(3). The Community believes that the effectiveness of this program, considering the continuing incidents of FAC events, should be justified with a more complete description of the benchmarking of CHECWORKS and the effectiveness of the program elements relative to the operating experience at PINGP.

### **III. CONCLUSION**

For the foregoing reasons, the Community’s contentions should be admitted in their entirety.

September 19, 2008

Respectfully submitted,

*/Signed (electronically) by Philip R. Mahowald/*

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Philip R. Mahowald  
General Counsel  
Prairie Island Indian Community  
5636 Sturgeon Lake Road  
Welch, Minnesota 55089  
651-267-4006  
pmahowald@piic.org