Nebraska Public Power District
"Always there when you need us"

54.17

NLS2009099
December 7, 2009

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Subject: SAMA Meteorological Anomaly Related to the Cooper Nuclear Station License Renewal Application
Cooper Nuclear Station, Docket No. 50-298, DPR-46

References: Letter from Stewart B. Minahan, Nebraska Public Power District, to U.S. Nuclear Regulatory Commission, dated September 24, 2008, "License Renewal Application" (NLS2008071).

Dear Sir or Madam:

The purpose of this letter is for the Nebraska Public Power District (NPPD) to address an error in Appendix E, Attachment E (Severe Accident Mitigation Alternatives (SAMA) Analysis) of the referenced Cooper Nuclear Station License Renewal Application (LRA). The error relates to the numerical averaging of wind direction, which is used for determining the radiological deposition and cost damage values from postulated severe events used in the cost/benefit evaluation of the SAMA Analysis. The Nuclear Regulatory Commission (NRC) was initially made aware of this on November 16, 2009. Subsequent conference calls were conducted on November 18, 2009 and December 2, 2009 with the NRC Staff.

A sensitivity analysis has been performed using the corrected meteorological data. A description of this analysis and the results are provided in Attachment 1. The analysis demonstrates that the error was conservative relative to the average population dose and offsite economic cost, and that no SAMAs were inappropriately excluded from consideration in the LRA as a result of the error in wind direction. Accordingly, no changes to the SAMA Analysis results as originally submitted in the LRA are necessary.

During the course of investigation into the meteorological anomaly, NPPD identified the need for corrections to Table E.1-12 of the SAMA Analysis and related text. This is discussed in Attachment 1, and the LRA changes are provided in Attachment 2.

NPPD understands from discussions with the NRC that this issue may affect the scheduled issuance of the draft Supplemental Environmental Impact Statement. Should you have any questions regarding this submittal, please contact David Bremer, License Renewal Project Manager, at (402) 825-5673.

COOPER NUCLEAR STATION
P.O. Box 98 / Brownville, NE 68321-0098
***Telephone:** (402) 825-3811 / **Fax:** (402) 825-5211*
www.nppd.com

A136
NRR

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 7Dec 09
(Date)

Sincerely,

Stewart B. Minahan
Vice President – Nuclear and
Chief Nuclear Officer

/wv

Attachments

cc: Regional Administrator w/ attachments
USNRC - Region IV

Cooper Project Manager w/ attachments
USNRC - NRR Project Directorate IV-1

Senior Resident Inspector w/ attachments
USNRC - CNS

Nebraska Health and Human Services w/ attachments
Department of Regulation and Licensure

NPG Distribution w/ attachments

CNS Records w/ attachments

Attachment 1

Severe Accident Mitigation Alternatives
Sensitivity Analysis

As described in Section E.1.5.2.6 of the Cooper Nuclear Station (CNS) License Renewal Application (LRA) Environmental Report (ER), site specific meteorological data (wind speed, wind direction, atmospheric stability, and accumulated precipitation) were obtained from the onsite meteorological monitoring system. In particular, five recent years of data were averaged and used for the CNS LRA Severe Accident Mitigation Alternatives (SAMA) Analysis. The data included 43,824 (one leap year) consecutive hourly values of wind speed, wind direction, precipitation, and temperature recorded at the CNS meteorological tower from January 2002 to December 2006. It has been determined that the method used to average the wind direction data was faulty because it indicated winds blowing toward the north that actually blew toward the south. Since a majority of the population around CNS is in the northern semicircle of the 50-mile radius (as shown in ER Table E.1-12), skewing the wind to the north should indicate a larger population dose and a larger offsite economic cost risk than would actually be experienced.

To demonstrate that the meteorological data used in the SAMA Analysis provided conservatively bounding results, sensitivity cases were run using MACCS2 to determine the mean population dose risk (PDR) and offsite economic cost risk (OECR) for each release mode using each of the single years of meteorological data. The results of the five one-year sensitivity analyses were averaged and compared with the values in ER Table E.1-14. This is consistent with the intent of the ER and showed that the values used in the ER are larger than if the error had not occurred. The following table presents the averaged PDR and OECR results from the five sensitivity analyses along with the values from Table E.1-14 of the ER.

Release Mode	Frequency (/yr)	Sensitivity Population Dose (person-sv)*	Sensitivity Offsite Economic Cost ($)	ER Table E.1-14 PDR (person-rem/yr)	ER Table E.1-14 OECR ($/yr)	Sensitivity PDR (person-rem/yr)	Sensitivity OECR ($/yr)
H/E	2.46E-06	5.87E+03	1.85E+09	1.59E+00	5.24E+03	1.44E+00**	4.55E+03
H/I	6.48E-07	5.76E+03	1.88E+09	3.96E-01	1.36E+03	3.73E-01	1.22E+03
M/E	8.58E-08	4.27E+03	1.36E+09	3.87E-02	1.33E+02	3.66E-02	1.17E+02
M/I	1.83E-07	3.69E+03	1.13E+09	7.11E-02	2.44E+02	6.75E-02	2.07E+02
M/L	9.20E-10	3.39E+03	9.41E+08	3.30E-04	1.04E+00	3.12E-04	8.66E-01
L/E	1.11E-07	1.97E+03	1.65E+08	2.31E-02	2.51E+01	2.19E-02	1.83E+01
L/I	4.63E-09	1.27E+03	2.22E+08	6.15E-04	1.28E+00	5.88E-04	1.03E+00
L/L	4.12E-09	1.88E+03	1.45E+08	8.68E-04	7.29E-01	7.75E-04	5.97E-01
LL/E	5.31E-07	2.79E+02	3.18E+06	1.92E-02	1.86E+00	1.48E-02	1.69E+00
LL/I	1.84E-07	1.71E+01	2.95E+05	4.00E-04	7.64E-02	3.15E-04	5.43E-02
LL/L	5.37E-08	6.70E+02	1.69E+07	4.56E-03	1.09E+00	3.60E-03	9.08E-01
			Total	**2.14E+00**	**7.01E+03**	**1.96E+00**	**6.12E+03**

* 1 sv = 100 rem

** 1.44E+00 (person-rem/yr) = 2.46E-06 (/yr) x 5.87E+03 (person-sv) x 100 (rem/sv)

Conclusion

Since the PDR and OECR used in the ER are larger than the sensitivity values for all release modes, the baseline benefit reported in the ER is larger than what would have been reported had the error not occurred. Similarly, the potential benefit reported in the ER for each of the SAMAs is conservative. Therefore, the conclusions of the SAMA Analysis reported in ER Section 4.21.6 remain valid.

Additional Clarification

Table E.1-12 of the LRA ER provided the estimated population distribution within a 50-mile radius of the plant for the year 2034. Text accompanying the table indicates that for counties with a declining population trend, projected population in 2014 was used for the 2034 estimate. For these declining population counties, the actual year 2000 population was used as the 2034 estimated population for input to the MACCS2 model both for the SAMA Analysis documented in the ER and for the sensitivity analysis discussed above, as an added conservatism.

Attachment 2 provides the correct 2034 population estimates within a 50-mile radius, and related text. As previously stated, the correct values shown in this table were the values actually used as inputs to the MACCS2 model in the original SAMA Analysis and the sensitivity analysis. Accordingly, the corrections merely reflect the actual inputs used in the analysis and do not impact the results of these analyses.

Attachment 2

Changes to the License Renewal Application
Cooper Nuclear Station, Docket No. 50-298, DPR-46

This attachment provides changes to the License Renewal Application as described in Attachment 1. The changes are presented in underline/strikeout format.

1. Section E.1.5.2.1 of the Environmental Report is revised to read:

"The total population within a 50-mile radius of CNS was estimated for the year 2034, the end of the proposed license renewal period, for each spatial element by combining total resident population projections with transient populations. The 2034 permanent population values are based on the county-level projections obtained from the University of Nebraska Bureau of Business Research from 2000–2020, Woods & Poole Economics, Inc. for Iowa from 2000–2030, Darrel Eklund et al. for Kansas from 2000–2040, and the Missouri Census Data Center from 2000–2025 [References E.1-11, E.1-12, E.1-13 and E.1-14]. Regression methods were used to extrapolate population projections to 2034. For the counties with population in decline, the population value for ~~2014~~ 2000 was used as the 2034 estimate. Table E.1-12 shows the estimated population distribution.

2. Replace Table E.1-12 of the Environmental Report with the following revised table:

Table E.1-12
Estimated Population Distribution within a 50-mile Radius

Wind Direction	0 to 10 miles	11 to 20 miles	21 to 30 miles	31 to 40 miles	41 to 50 miles	Total
N	160	1,667	2,057	2,856	14,885	21,625
NNE	88	200	1,448	7,743	5,805	15,284
NE	247	265	1024	1,097	7,154	9,787
ENE	1,600	2,245	640	1,610	2,145	8,240
E	111	872	299	5,146	11,217	17,645
ESE	54	274	510	1,354	2,591	4,783
SE	10	540	1,810	1,987	3,179	7,526
SSE	44	321	886	1,911	2,165	5,327
S	67	555	5,565	5,141	3,706	15,034
SSW	342	584	458	3,885	2,643	7,912
SW	255	699	1,325	972	2,542	5,793
WSW	116	248	729	1,618	878	3,589
W	95	2,155	2,459	656	1,723	7,088
WNW	112	2,822	1,283	1,603	3,611	9,431

Wind Direction	0 to 10 miles	11 to 20 miles	21 to 30 miles	31 to 40 miles	41 to 50 miles	Total
NW	151	526	1,360	5,388	5,851	13,276
NNW	1,261	240	10,479	2,766	19,887	34,633
Totals	4,713	14,213	32,332	45,733	89,982	186,973

ATTACHMENT 3 LIST OF REGULATORY COMMITMENTS©[4]

Correspondence Number: NLS2009099

The following table identifies those actions committed to by Nebraska Public Power District (NPPD) in this document. Any other actions discussed in the submittal represent intended or planned actions by NPPD. They are described for information only and are not regulatory commitments. Please notify the Licensing Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITMENT NUMBER	COMMITTED DATE OR OUTAGE
None		