

WOLF CREEK NUCLEAR OPERATING CORPORATION

Terry J. Garrett
Vice President, Engineering

August 15, 2007
ET 07-0035

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

- Reference:
- 1) Letter ET 06-0038, dated September 27, 2006, from T. J. Garrett, WCNO, to USNRC
 - 2) Letter ET 07-0029, dated July 13, 2007, from T. J. Garrett, WCNO, to USNRC

Subject: Docket No. 50-482: Summary of the Impact to Wolf Creek Generating Station License Renewal Application Severe Accident Mitigation Alternatives Analysis due to Computer Program Errors

Gentlemen:

Reference 1 provided Wolf Creek Nuclear Operating Corporation's (WCNO) License Renewal Application (LRA) for the Wolf Creek Generating Station (WCGS). An incorrect computer file format was used to generate some portions of the Severe Accident Mitigation Alternatives (SAMA) analysis. It was determined that the error impacted the WCGS SAMA analysis report. This error was corrected and a summary of changes to the WCGS LRA was submitted in Reference 2.

After submittal of Reference 2, an additional error in the output of the Sector Population, Land Fraction, and Economic Estimation Program (SECP2000) program was discovered. The second error, in the associated data file "County97.dat," resulted in the wrong counties being selected for agricultural/economic data.

A re-analysis was performed. This submittal provides the initial SAMA results as submitted in Reference 1 and the corrected results after fixing both of the errors.

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NRK

No commitments are identified in this submittal. If you have any questions concerning this matter, please contact me at (620) 364-4084, or Mr. Kevin Moles at (620) 364-4126.

Sincerely,

A handwritten signature in black ink, appearing to read 'Terry J. Garrett', written in a cursive style.

Terry J. Garrett

TJG/rlt

Attachment – Summary of Impact to SAMA Analysis

cc: J. N. Donohew (NRC), w/a
V. G. Gaddy (NRC), w/a
C. Jacobs (NRC), w/a
B. S. Mallett (NRC), w/a
Senior Resident Inspector (NRC), w/a

STATE OF KANSAS)
) SS
COUNTY OF COFFEY)

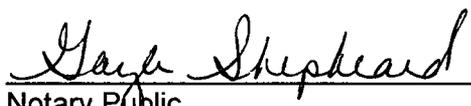
Terry J. Garrett, of lawful age, being first duly sworn upon oath says that he is Vice President Engineering of Wolf Creek Nuclear Operating Corporation; that he has read the foregoing document and knows the contents thereof; that he has executed the same for and on behalf of said Corporation with full power and authority to do so; and that the facts therein stated are true and correct to the best of his knowledge, information and belief.

By 

Terry J. Garrett
Vice President Engineering

SUBSCRIBED and sworn to before me this 15th day of August, 2007.





Notary Public

Expiration Date July 24, 2007

Attachment

**Summary of the Impact to Wolf Creek Generating Station License Renewal Application
Severe Accident Mitigation Alternatives Analysis due to Computer Program Errors**

Summary of the Impact to Wolf Creek Generating Station License Renewal Application Severe Accident Mitigation Alternatives Analysis due to Computer Program Error

Two errors in the output of the Sector Population, Land Fraction, and Economic Estimation Program (SECP2000) program (when used to produce a MELCOR ACCIDENT CONSEQUENCE CODE SYSTEM (MACCS2) input file) have been discovered that caused the Wolf Creek Generating Station (WCGS) severe accident mitigation alternative (SAMA) analysis to be reworked. The results of the first error (one in formatting the output file) have previously been reported. The second error, in the associated data file "County97.dat," results in the wrong counties being selected for agricultural/economic data. This document presents the originally submitted SAMA results in Attachment F of the License Renewal Application (LRA) Environmental Report and provides the combined results of correcting both errors.

The re-analysis produced changes to dose-risk and cost-risk. These changed values were then used to recalculate a monetary screening value Maximum Averted Cost Risk (MACR) for determining the cost-effectiveness of potential SAMAs. The modified MACR (accounts for external events) based on the mean probabilistic risk assessment (PRA) results increased from \$1,852,000 to \$1,900,000 (2.6 percent increase). The 95th percentile PRA results sensitivity case was also recalculated and it was determined that the modified MACR increased from \$3,518,800 to \$3,610,000 (also a 2.6 percent increase). The changes to the modified MACR estimates did not impact the analysis.

In addition to the impact on the modified MACR, the SECPOP error also impacted the averted cost-risks that were calculated for each of the SAMAs. Table 1 provides a summary of the impact of using the corrected results (of both error fixes) in conjunction with the mean PRA results in the detailed cost-benefit calculations that were performed.

As demonstrated in Table 1, the corrections to the SECPOP input had a minimal impact on the averted cost-risk estimates and only one SAMA (SAMA 1) that was originally classified as "not cost beneficial" was re-classified as "cost beneficial" based on the use of the corrected input. Given that SAMA 1 was identified as potentially cost beneficial in the 95th percentile PRA results sensitivity analysis that was performed in the LRA, this change did not result in the identification of any new potentially cost beneficial SAMAs.

In addition to the review of the mean PRA results quantifications, it was necessary to examine how the 95th percentile PRA results quantifications were impacted, given that they were also used to identify potentially cost beneficial SAMAs. Table 2 provides a summary of the cost benefit calculations using the corrected SECPOP input in conjunction with the 95th percentile PRA results. In this case, no SAMAs were identified as potentially cost beneficial that were not already identified in the ER submittal.

Table 1. Results of SECPOP Correction – Mean PRA Results

SAMA ID	Cost of Implementation	Submitted		Revised		Change in Cost Effectiveness?
		Averted Cost- Risk	Net Value	Averted Cost- Risk	Net Value	
SAMA 1	\$800,000	\$799,882	-\$118	\$809,206	\$9,206	Yes
SAMA 2	\$400,000	\$655,712	\$255,712	\$664,886	\$264,886	No
SAMA 3	\$328,000	\$293,252	-\$34,748	\$296,922	-\$31,078	No
SAMA 4 - Case 1	\$600,000	\$243,368	-\$356,632	\$264,122	-\$335,878	No
SAMA 4 - Case 2	\$50,000	\$173,050	\$123,050	\$188,032	\$138,032	No
SAMA 5	\$50,000	\$54,576	\$4,576	\$56,502	\$6,502	No
SAMA 8	\$565,000	\$43,492	-\$521,508	\$44,726	-\$520,274	No
SAMA 13	\$150,000	\$111,168	-\$38,832	\$112,642	-\$37,358	No
SAMA 14	\$1,200,000	\$882,152	-\$317,848	\$892,770	-\$307,230	No
SAMA 15 - Case 1	\$3,250,000	\$404,219	-\$2,845,781	\$414,696	-\$2,835,304	No
SAMA 15 - Case 2	\$1,000,000	\$404,219	-\$595,781	\$414,696	-\$585,304	No
SAMA 16	\$565,000	\$22,648	-\$542,352	\$23,432	-\$541,568	No
SAMA 17	\$550,000	\$65,328	-\$484,672	\$66,594	-\$483,406	No

Table 2. Results of SECPOP Correction – 95th Percentile PRA Results

SAMA ID	Cost of Implementation	Submitted		Revised		Change in Cost Effectiveness?
		Averted Cost- Risk	Net Value	Averted Cost- Risk	Net Value	
SAMA 1	\$800,000	\$1,519,776	\$719,776	\$1,537,491	\$737,491	No
SAMA 2	\$400,000	\$1,245,853	\$845,853	\$1,263,283	\$863,283	No
SAMA 3	\$328,000	\$557,179	\$229,179	\$564,152	\$236,152	No
SAMA 4 - Case 1	\$600,000	\$462,399	-\$137,601	\$501,832	-\$98,168	No
SAMA 4 - Case 2	\$50,000	\$328,795	\$278,795	\$357,261	\$307,261	No
SAMA 5	\$50,000	\$103,694	\$53,694	\$107,354	\$57,354	No
SAMA 8	\$565,000	\$82,635	-\$482,365	\$84,979	-\$480,021	No
SAMA 13	\$150,000	\$211,219	\$61,219	\$214,020	\$64,020	No
SAMA 14	\$1,200,000	\$1,676,089	\$476,089	\$1,696,263	\$496,263	No
SAMA 15 - Case 1	\$3,250,000	\$768,017	-\$2,481,983	\$787,922	-\$2,462,078	No
SAMA 15 - Case 2	\$1,000,000	\$768,017	-\$231,983	\$787,922	-\$212,078	No
SAMA 16	\$565,000	\$43,031	-\$521,969	\$44,521	-\$520,479	No
SAMA 17	\$550,000	\$124,123	-\$425,877	\$126,529	-\$423,471	No