Luminant

Mike Blevins
Executive Vice President
& Chief Nuclear Officer
Mike.Blevins@Luminant.com

Luminant Power
P O Box 1002
6322 North FM 56
Glen Rose, TX 76043

T 254 897 5209
C 817 559 9085
F 254 897 6652

CP-200700154
Log # TXX-07171

Ref. # 10CFR50.90

November 28, 2007

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

SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION (CPSES) DOCKET NOS. 50-445 AND 50-446, REVISED RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION RELATED TO LICENSE AMENDMENT REQUEST (LAR) 06-009, REVISION TO TECHNICAL SPECIFICATION (TS) 3.8.1, "AC SOURCES - OPERATING," EXTENSION OF COMPLETION TIMES FOR DIESEL GENERATORS

REFERENCES:
1. TXU Power letter, logged TXX-07011, from Mike Blevins (Luminant Power) to the NRC dated January 18, 2007
2. Email from Mohan Thadani (NRC) to Fred Madden and Tim Hope (Luminant Power) with Request for Additional Information for LAR 06-009 dated June 21, 2007.
3. Email from Balwant Singal (NRC) to Tim Hope (Luminant Power) with an additional Request for information dated July, 25, 2007.
4. Luminant Power letter, logged TXX-07110, from Mike Blevins to the NRC dated November 15, 2007

Dear Sir or Madam:

In Reference 1, Comanche Peak Steam Electric Station, herein referred to as Comanche Peak Nuclear Power Plant (CPNPP), requested the Completion Time (CT) for Emergency Diesel Generators (EDGs) be extended from 72 hours to 14 days.

In References 2 and 3, the NRC requested additional information (RAIs) based on Reference 1 which was provided by CPNPP in Reference 4. Attachment 1 of this letter provides a correction to Attachment 1A of Reference 4 based on questions, during a phone conversation on November 19, 2007 between the NRC and Luminant Power.

The enclosure to this letter provides replacement pages 16 to 19 of Attachment 1A, titled "PRA Update," to Reference 4.

The corrections were necessitated because of errors in the values in Table 3 titled "CT Configuration Case and Sensitivity Results," for Incremental Conditional Core Damage Probability and Incremental Conditional Large Early Release Probability. These errors occurred because of the use of inappropriate delta CDF and delta LERF in the spreadsheet calculations. Three specific kinds of changes were made to the table and associated verbiage: 1) Table 3 was split into 2 tables now shown as Table 3.A, "CDF and LERF RESULTS" and Table 3.B, "RGS 1.174 and 1.177 METRICS RESULTS." This removes a potential ambiguity and provides clarification of the resultant values; 2) notes were revised and added to the tables

A001
NRR

to connect the results to the associated calculation methods; and 3) certain descriptions of the parameters used in the equations and descriptions of the results were revised to show the corrected values.

In accordance with 10CFR50.91, a copy of this submittal is being provided to the designated Texas State official.

Should you have any questions, please contact Ms. Tamera J. Ervin-Walker at (254) 897-6902.

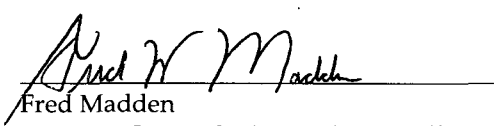
I state under penalty of perjury that the foregoing is true and correct.

Executed on November 28, 2007.

Sincerely,

Luminant Generation Company LLC

Mike Blevins

By: 
Fred Madden
Director, Oversight & Regulatory Affairs

Enclosure, "Revised Response to Request for Addition Information Related to License Amendment Request (LAR) 06-009 Revision to Technical Specification (TS) 3.8.1, 'AC Sources - Operating,' Extension of Completion Times for Diesel Generators"

c - E. E. Collins, Region IV
B. K. Singal, NRR
Resident Inspectors, CPSES

Ms. Alice Rogers
Environmental & Consumer Safety Section
Texas Department of State Health Services
1100 West 49th Street
Austin, Texas 78756-3189

ENCLOSURE TO TXX-07171

REVISED RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION RELATED TO LICENSE AMENDMENT REQUEST (LAR) 06-009 REVISION TO TECHNICAL SPECIFICATION (TS) 3.8.1, "AC SOURCES - OPERATING," EXTENSION OF COMPLETION TIMES FOR DIESEL GENERATORS

The change in core damage frequency (ΔCDF) and the change in large early release frequency (ΔLERF) are computed per the definitions from RG 1.174. In terms of the parameters defined above, the definitions are as follows:

$\Delta CDF_{ave} = [(CDF_{tmbase} * B/365) + (CDF_{AACPS} * CT/365)] - CDF_{tmbase}$

And

$\Delta LERF_{ave} = (LERF_{tmbase} * B/365) + (LERF_{AACPS} * CT/365) - LERF_{tmbase}$

Where

CDF_{tmbase} = CDF (Model of Record, Test and Maintenance model)
CDF_{AACPS} = CDF with the EDG out of service and the AACPS in service (Model of Record, Test and Maintenance model)
CT = Completion Time
B= 365 - CT

And

$LERF_{tmbase}$ = LERF (Model of Record, Test and Maintenance model)
$LERF_{AACPS}$ = LERF with the EDG out of service and the AACPS in service (Model of Record, Test and Maintenance model)

Using the assumption for the configuration discussed above, the Incremental Conditional Core Damage Probability (ICCDP) and ICLERP (Incremental Conditional Large Early Release Probability) were calculated. The method used to calculate the ICCDP/ICLERP for the "At Power" model was to calculate the baseline CDF/LERF and the equipment out of service CDF/LERF with the AACPS in the model. The $\Delta CDF_{config}/\Delta LERF_{config}$ were calculated by subtracting the two CDFs/LERFs and multiplying by the CT divided by 365. The following equation was used to calculate the ICCDP:

$ICCDP = (\Delta CDF_{config}) * (CT/365)$

And

$ICLERP = (\Delta LERF_{config}) * (CT/365)$

Where:

ΔCDF_{config} = CDF with the EDG out of service and the AACPS in service (Model of Record, Test and Maintenance model) minus the Baseline CDF (Model of Record, Test and Maintenance model)
$\Delta LERF_{config}$ = LERF with the EDG out of service and the AACPS in service (Model of Record, Test and Maintenance model) minus the Baseline LERF (Model of Record, Test and Maintenance model)

5. The recovery of the EDG that is out of service for maintenance was not allowed. The recovery of the opposite train EDG was allowed. No credit was taken for any recovery of the AACPS. The recovery of a failure to start was not considered since it was assumed the AACPS would be manually started. Recovery of the AACPS one hour after it has started is a valid recovery but again was not credited in this analysis.

Several cases where analyzed to ensure that the metrics of RG1.177 were met. All cases, unless otherwise noted, were calculated using the average test and maintenance model. The analysis representing the extended CT change (submittal case) reflects the baseline model with one EDG removed from service and the AACPS available. The remaining cases represent the sensitivity analyses to capture the effects if various limitations were put into place. The table below contains the results of all cases calculated, followed by a brief discussion.

The notes associated with the following tables will help in understanding the analysis and the results. The notes describe how each metric was calculated.

TABLE 3.A CDF AND LERF RESULTS

Case	Description	CDF	LERF
1	BASE TM UNIT 1 (MOR 3C)	9.62E-06	4.91E-07
2	EDG OOS WITH TM AND TMP DG UNIT 1 (Submittal Case)	1.37E-05	6.44E-07
3	EDG OOS WITH NTM AND TMP DG UNIT 1	1.32E-05	6.23E-07
4	BASE UNIT 1 TM INCREASED BY 3.84%	9.74E-06	4.95E-07
5	UNIT 1 BOTH EDG TM INCREASED BY 14 DAYS	1.47E-05	6.86E-07
6	BASE TM UNIT 2 (MOR 3C)	9.78E-06	6.23E-07
7	EDG OOS WITH TM AND TMP DG UNIT 02 (Submittal Case)	1.39E-05	7.94E-07
8	EDG OOS WITH NTM AND TMP DG UNIT 2	1.34E-05	7.60E-07
9	BASE UNIT 2 TM INCREASED 3.84%	9.90E-06	6.28E-07
10	UNIT 2 BOTH EDG TM INCREASED BY 14 DAYS	1.49E-05	8.62E-07

MOR – Model of Record EDG – Diesel train B TMP DG – AACPS Generator TM – Test and Maintenance NTM – No TM

TABLE 3.B RGS 1.174 and 1.177 METRICS RESULTS

Case	ΔCDF	ΔLERF	ICCDP	ICLERP	Meet RG 1.174 and 1.177
EDG OOS WITH TM AND TMP DG UNIT 1 (Submittal Case)	1.56E-07[A]	5.87E-09[A]	1.56E-07[B]	5.87E-09[B]	YES
EDG OOS WITH NTM AND TMP DG UNIT 1	1.38E-07[C]	5.07E-09[C]	1.38E-07[D]	5.07E-09[D]	YES
EDG OOS With BASE UNIT 1 TM INCREASED BY 3.84% AND TMP DG	2.52E-07[E]	9.02E-09[E]	1.38E-07[D]	5.07E-09[D]	YES
UNIT 1 BOTH EDG TM INCREASED BY 14 DAYS	5.11E-06[F]	1.95E-07[F]	N/A	N/A	N/A
EDG OOS WITH TM AND TMP DG UNIT 2 (Submittal Case)	1.57E-07[G]	6.56E-09[G]	1.57E-07[H]	6.56E-09[H]	YES
EDG OOS WITH NTM AND TMP DG UNIT 2	1.38E-07[I]	5.27E-09[I]	1.38E-07[J]	5.27E-09[J]	YES
EDG OOS WITH BASE UNIT 2 TM INCREASED 3.84% AND TMP DG	2.55E-07[K]	1.04E-08[K]	1.38E-07[J]	5.27E-09[J]	YES
UNIT 2 BOTH EDG TM INCREASED BY 14 DAYS	5.15E-06[L]	2.39E-07[L]	N/A	N/A	N/A

NOTES:
A - Calculated using the following formula ((Case 2) * (14/365) + (Case 1) * 351/365)) – (Case 1)
B - Calculated using the following formula ((Case 2) – (Case 1)) * 14/365
C - Calculated using the following formula ((Case 3) * (14/365) + (Case 1) * 351/365)) – (Case 1)
D - Calculated using the following formula ((Case 3) – (Case 1)) * 14/365
E - Calculated using the following formula ((Case 3) * (14/365) + (Case 4) * 351/365)) – (Case 1)
F - Calculated using the following formula (Case 5) – (Case 1)
G - Calculated using the following formula ((Case 7) * (14/365) + (Case 6) * 351/365)) – (Case 6)
H - Calculated using the following formula ((Case 7) – (Case 6)) * 14/365
I - Calculated using the following formula ((Case 8) * (14/365) + (Case 6) * 351/365)) – (Case 6)
J - Calculated using the following formula ((Case 8) – (Case 6)) * 14/365
K - Calculated using the following formula ((Case 8) * (14/365) + (Case 9) * 351/365)) – (Case 6)
L - Calculated using the following formula (Case 10) – (Case 6)

This analysis re-performed the quantifications, specifically, a submittal case and sensitivity case. The base quantification for both units used the test and maintenance model and compared the results to the various cases.

The results of the submittal case comparison which will be used for the submittal are as follows. The ΔCDF was 1.56E-07 for Unit 1 and 1.57E-07 for Unit 2. The ΔLERF was 5.87E-09 for Unit 1 and 6.56E-09 for Unit 2. All of these values meet the requirements of RG 1.174. The ICCDP was 1.56E-07 for Unit 1 and 1.57E-07 for Unit 2. The ICLERP was 5.87E-09 for Unit 1 and 6.56E-09 for Unit 2. All of these values meet the requirements of RG 1.177. The other cases described below were calculated as sensitivities.

The sensitivity case in which the no test and maintenance was used meets the metric requirements of RG 1.174 and 1.177. This case represents the most restrictive plant configuration when one of the EDGs is out of service. For this sensitivity case, it was assumed that the plant will not plan maintenance on other risk significant equipment due to normal plant practices and the Maintenance Rule 10CFR50.65(a)(4) risk assessment requirements.

If work were to be restricted in the switchyard and if credit was taken for this then the plant-centered portion of the LOOP initiator could be reduced. This case was not recalculated for this response submittal; however, the previous evaluation showed that implementation of routine risk reducing plant practices is effective in further reducing overall risk.

The sensitivity case which increased all of the test and maintenance in the PRA model by 3.84% (reflecting a restriction of work during the CT) meets the metric requirements of RG 1.174 and 1.177. The test and maintenance events were increased to account for the maintenance that would not be performed during the CT but would be performed later in the year. The 3.84% was derived by dividing the time in the CT (14 days) by the days in the year (365 days). This is conservative since the complete CT is not expected to be used. Also, this is conservative because the case used for the submittal did not restrict any test and maintenance activities, except for the opposite train EDG, since the test and maintenance PRA model was used for the analysis. If test and maintenance was restricted, the increase in CDF would be less and thus the change in risk would decrease.

A sensitivity case was run where the average test and maintenance events that represent the EDGs unavailability were increased by 14 days (that is, the test and maintenance unavailability for both EDGs were simultaneously set to the equivalent of 14 days). The value of this sensitivity case is that it shows a bounding change in risk. This increase in risk is bounding since the compensatory actions such as the installation of an AACPS and/or controlling onsite work during the extended CT are not credited and the unavailability is maximized; that is, 14 days unavailability is used even though the extended CT is not expected to be entered yearly and, when entered, the full duration of CT is not expected to be used. As can be seen from Table 3.B, the delta risk values calculated for this bounding case exceed the threshold values for Regulatory Guide 1.174 by a relatively small factor. Comparing this bounding case with the cases with the compensatory actions credited provides a reasonableness measure for the requested extension.

The evaluation of the risk of performing a 14-day EDG maintenance activity at power meets the requirements for a permanent TS change in accordance with RGs 1.174 and 1.177. The requirement of RG 1.174 is a ΔCDF less than 1E-06 and a ΔLERF less than 1E-07. The requirement of RG 1.177 is an ICCDP less than 5E-07 and ICLERP less than 5E-08.

Tier 2 and 3 Considerations

This section addresses the Tier 2 and Tier 3 considerations related to avoidance and control and management of high risk considerations.