



Luminant

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Ref. # 10 CFR 52

May 31, 2011

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555
ATTN: David B. Matthews, Director
Division of New Reactor Licensing

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 3 AND 4
DOCKET NUMBERS 52-034 AND 52-035
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION NO. 5652
(SECTION 6.4)

Dear Sir:

Luminant Generation Company LLC (Luminant) submits herein the response to Request for Additional Information (RAI) No. 5652 for the Combined License Application for Comanche Peak Nuclear Power Plant Units 3 and 4. This RAI addresses the amounts of chemicals stored on-site.

Should you have any questions regarding this response, please contact Don Woodlan (254-897-6887, Donald.Woodlan@luminant.com) or me.

There are no commitments in this letter.

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

Executed on May 31, 2011.

Sincerely,

Luminant Generation Company LLC


Rafael Flores *for*

Attachment: Response to Request for Additional Information No. 5652 (CP RAI #216)

D090

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RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak, Units 3 and 4
Luminant Generation Company LLC
Docket Nos. 52-034 and 52-035**

RAI NO.: 5652 (CP RAI #216)

SRP SECTION: 06.04 - Control Room Habitability System

QUESTIONS for Containment and Ventilation Branch 1 (AP1000/EPR Projects) (SPCV)

DATE OF RAI ISSUE: 4/27/2011

QUESTION NO.: 06.04-13

In support of the applicant's documented conclusions of Comanche Peak Nuclear Power Plant, Units 3 and 4 COLA FSAR section 6.4.4.2, the staff performed confirmatory HABIT code modeling per the guidance of Regulatory Guide 1.78 and NUREG-0800 Standard Review Plan (SRP) 6.4. For the "CPNPP Units 3 & 4 Water Treatment Chemicals" of FSAR Table 2.2-214, the staff compared the results of its modeling to the applicant's modeling results as captured in Calculation 4CS-CP34-200800074. Calculation 4CS-CP34-200800074 "CPNPP Units 3 & 4 Control Room Habitability Analysis Following Postulated Toxic Chemical Release (Support Document)" was viewed through the applicant's "CPNPP 3&4 COLA Reading Room."

For the onsite chemicals of sulfuric acid, ammonia, hydrazine and morpholine, the staff observed differences in its own calculated initial mass values from those listed in the EXTRAN Input Files of 4CS-CP34-200800074. The differences in the calculated values were as large in magnitude as 3.5.

The staff used the following formula for calculating their initial mass values.

Initial Mass = (Number gallons of chemical) x (8.337 lb/gal) x (Specific Gravity of Chemical) x (short ton/2000 lb) x (907.185 kilograms/short ton)

The staff requests that the applicant explain how the initial mass values were determined for sulfuric acid, ammonia, hydrazine and morpholine in 4CS-CP34-200800074, Revision 0. Additionally, the staff requests additional information about the applicant's HABIT code modeling that may help explain the noted differences.

ANSWER:

The basis for the initial mass value calculation is located in Section 2 of Calculation 4CS-CP34-200800074, Rev. 0. The initial mass value is determined by taking the product of weight percent, volume, density of water, and specific gravity, and the results are provided in Table 2 of the calculation. As can be

seen, the differences are due to incorporation of the weight percentages of the chemicals of concern. FSAR Table 2.2-214 has been revised to indicate these weight percentages.

Impact on R-COLA

See marked-up FSAR Revision 1 Table 2.2-214.

Impact on S-COLA

None.

Impact on DCD

None.

**Comanche Peak Nuclear Power Plant, Units 3 & 4
COL Application
Part 2, FSAR**

CP COL 2.2(1)

**Table 2.2-214
Toxic Chemicals that do not Meet the Regulatory Guide 1.78
Screening Criteria^(a)**

Hazardous Chemical Location	Chemicals	Quantity	Distance to the Nearest Units 3 and 4 MCR Inlet	IDLH	Calculated Maximum Concentration in Control Room
Roadway FM 56	Chlorine	42,500 lb	1.4 mi	1.0E+01 ppm	5.7 ppm
DeCordova SES	Sodium hydroxide	15,294 lb	3.7 mi ^(b)	10 mg/m ³	Not Analyzed ^(c)
	Sulfuric acid	45,981 lb		15 mg/m ³	1.9E-4 mg/m ³
Wolf Hollow 1, LP	Sodium hydroxide	19,118 lb	3.9 mi	10 mg/m ³	Not Analyzed ^(c)
	Sulfuric acid	57,477 lb		15 mg/m ³	2.0E-4 mg/m ³
Sunoco Pipeline, LP	Hydrogen sulfide	1716 lb	0.33 mi	1.0E+02 ppm	4.17 ppm
CPNPP Units 1 and 2, Waste Management Bldg.	Sulfuric acid	1250 gal (19,159 lb)	733 ft	15 mg/m ³	1.75E-03 mg/m ³
CPNPP Units 1 and 2, Bulk Gas Storage	Liquefied petroleum gas	4000 gal	1400 ft	2.10E+03 ppm	3.63E+01 ppm
	Carbon dioxide	6000 lb		4.0E+04 ppm	1.46E+01 ppm
CPNPP Units 3 and 4, Water Treatment Chemicals	Morpholine, <u>40 wt%</u>	10,000 gal	<300 ft	1.4E+03 ppm	3.49E-01 ppm
	Dimethylamine, <u>40 wt%</u>	5000 gal	<300 ft	5.00E+02 ppm	1.65E+01 ppm
	Hydrazine, <u>35 wt%</u>	1000 gal	<300 ft	5.0E+01 ppm	9.29E-02 ppm
	Ammonia, <u>19 wt%</u>	1000 gal	<300 ft	3.0E+02 ppm	2.70E+01 ppm
	Sulfuric acid, <u>93 wt%</u>	10,000 gal	<1200 ft	15 mg/m ³	6.19E-03 mg/m ³
<u>CPNPP Units 3 and 4, Chiller Refrigeration</u>	<u>Refrigerant (R-134a used as typical)</u>	<u>< 2570 lbs at a vapor density of 9.369 lbs/m³</u>	<u>104 ft ^(d) 123 ft ^(e)</u>	<u>Asphyxiant</u>	<u>(f)</u>

RCOL2_06.0
4-13

RCOL2_02.0
2.03-1
RCOL2_06.0
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RCOL2_06.0
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