

PMComanchePeakPEm Resource

From: Monarque, Stephen
Sent: Tuesday, October 20, 2009 7:59 AM
To: ComanchePeakCOL Resource
Subject: FW: RAI Responses from Luminant
Attachments: TXNB-09054 RAIs 30, 31, 33, 34, 35, 36.pdf

From: John.Conly@luminant.com [mailto:John.Conly@luminant.com]

Sent: Thursday, October 15, 2009 5:04 PM

To: rjb@nei.org; david.beshear@txu.com; Biggins, James; rbird1@luminant.com; mike.blevins@luminant.com; Dennis.Buschbaum@luminant.com; russell_bywater@mnes-us.com; JCaldwell@luminant.com; Ronald.Carver@luminant.com; cp34update@certrec.com; Ciocco, Jeff; Timothy.Clouser@luminant.com; Collins, Elmo; John.Conly@luminant.com; Carolyn.Cosentino@luminant.com; brock.degeyter@energyfutureholdings.com; nancy.douglas@txu.com; Eric.Evans@luminant.com; Rafael.Flores@luminant.com; sfrantz@morganlewis.com; Goldin, Laura; Hamzehee, Hossein; kazuya_hayashi@mnes-us.com; mutsumi_ishida@mnes-us.com; Johnson, Michael; Kallan, Paul; masahiko_kaneda@mnes-us.com; kak@nei.org; Allan.Koenig@luminant.com; Kramer, John; mlucas3@luminant.com; Fred.Madden@luminant.com; Matthews, David; tmatthews@morganlewis.com; Monarque, Stephen; Ashley.Monts@luminant.com; Bill.Moore@luminant.com; masanori_onozuka@mnes-us.com; ck_paulson@mnes-us.com; Plisco, Loren; Robert.Reible@luminant.com; jeff.simmons@energyfutureholdings.com; Singal, Balwant; nan_sirirat@mnes-us.com; Takacs, Michael; joseph_tapia@mnes-us.com; Tindell, Brian; Bruce.Turner@luminant.com; Vrahoretis, Susan; Ward, William; Matthew.Weeks@luminant.com; Willingham, Michael; Donald.Woodlan@luminant.com; diane_yeager@mnes-us.com

Subject: RAI Responses

Luminant has submitted the attached responses to RAIs to the NRC. Stephen Monarque and the Document Control Desk each received a CD containing Attachment 7, TXUT-001-ER-5.4-CALC-011, Rev. 2 (130+ Mb). If there are any questions regarding the responses, please contact me or contact Don Woodlan (254-897-6887, Donald.Woodlan@luminant.com).

Thanks,

John Conly
COLA Project Manager NuBuild
Luminant Power
(254) 897-5256

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Recipients:
"ComanchePeakCOL Resource" <ComanchePeakCOL.Resource@nrc.gov>
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CP-200901454
Log # TXNB-09054

Ref. # 10 CFR 52

October 15, 2009

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 REQUESTS FOR ADDITIONAL INFORMATION
NO. 2748, 2764, 2843, 2844, 2875, AND 3400

Dear Sir:

Luminant Generation Company LLC (Luminant) herein submits responses to Requests for Additional Information No. 2748, 2764, 2843, 2844, 2875, and 3400 for the Combined License Application for Comanche Peak Nuclear Power Plant Units 3 and 4. The affected FSAR pages are included with the responses. An additional document supporting one response is included in Attachment 7.

Should you have any questions regarding these responses, 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 October 15, 2009.

Sincerely,

Luminant Generation Company LLC

Rafael Flores

- Attachments -
1. Response to Request for Additional Information No. 2748 (CP RAI #35)
 2. Response to Request for Additional Information No. 2764 (CP RAI #34)
 3. Response to Request for Additional Information No. 2843 (CP RAI #30)
 4. Response to Request for Additional Information No. 2844 (CP RAI #31)
 5. Response to Request for Additional Information No. 2875 (CP RAI #33)
 6. Response to Request for Additional Information No. 3400 (CP RAI #36)
 7. CPNPP Offsite Dose due to Normal Gaseous Releases, TXUT-001-ER-5.4-CALC-011, Rev. 2 (on CD)

cc: Stephen Monarque w/all Attachments (CD)

Electronic Distribution w/ Attachments 1-6

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Luminant Records Management -
Portfolio of .pdf files

U. S. Nuclear Regulatory Commission
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10/15/2009

Attachment 1

Response to Request for Additional Information No. 2748 (CP RAI #35)

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.: 2748 (CP RAI #35)

SRP SECTION: 11.03 – GASEOUS WASTE MANAGEMENT SYSTEM

QUESTIONS for Balance of Plant Branch 1 (AP1000/EPR Projects) (SBPA)

DATE OF RAI ISSUE: 9/3/2009

QUESTION NO.: 11.03-1

Regulatory Position 2.3 of Regulatory Guide 1.143, "Design Guidance for Radioactive Waste Management Systems, Structures, and Components Installed in Light-Water-Cooled Nuclear Power Plants," Revision 2, November 2001, states, "The portions of the gaseous radwaste treatment system that are intended to store or delay the release of gaseous radioactive waste, including portions of structures housing these systems, should be classified as described in Regulatory Position 5 and designed in accordance with Regulatory Position 6." Luminant is requested to explain why Combined License Application, FSAR Figure 11.3-201 Sheet 3 does not include the same note as Sheets 2 and 3, which states, "All piping valves and components in this sheet other than specified are classified as equipment class 6."

ANSWER:

The note contained in FSAR Figure 11.3-201 Sheets 1 and 2, which states, "All piping valves and components in this sheet other than specified are classified as equipment class 6," has been added to Sheet 3.

Impact on R-COLA

See attached marked-up FSAR Draft Revision-1 page 11.3-15.

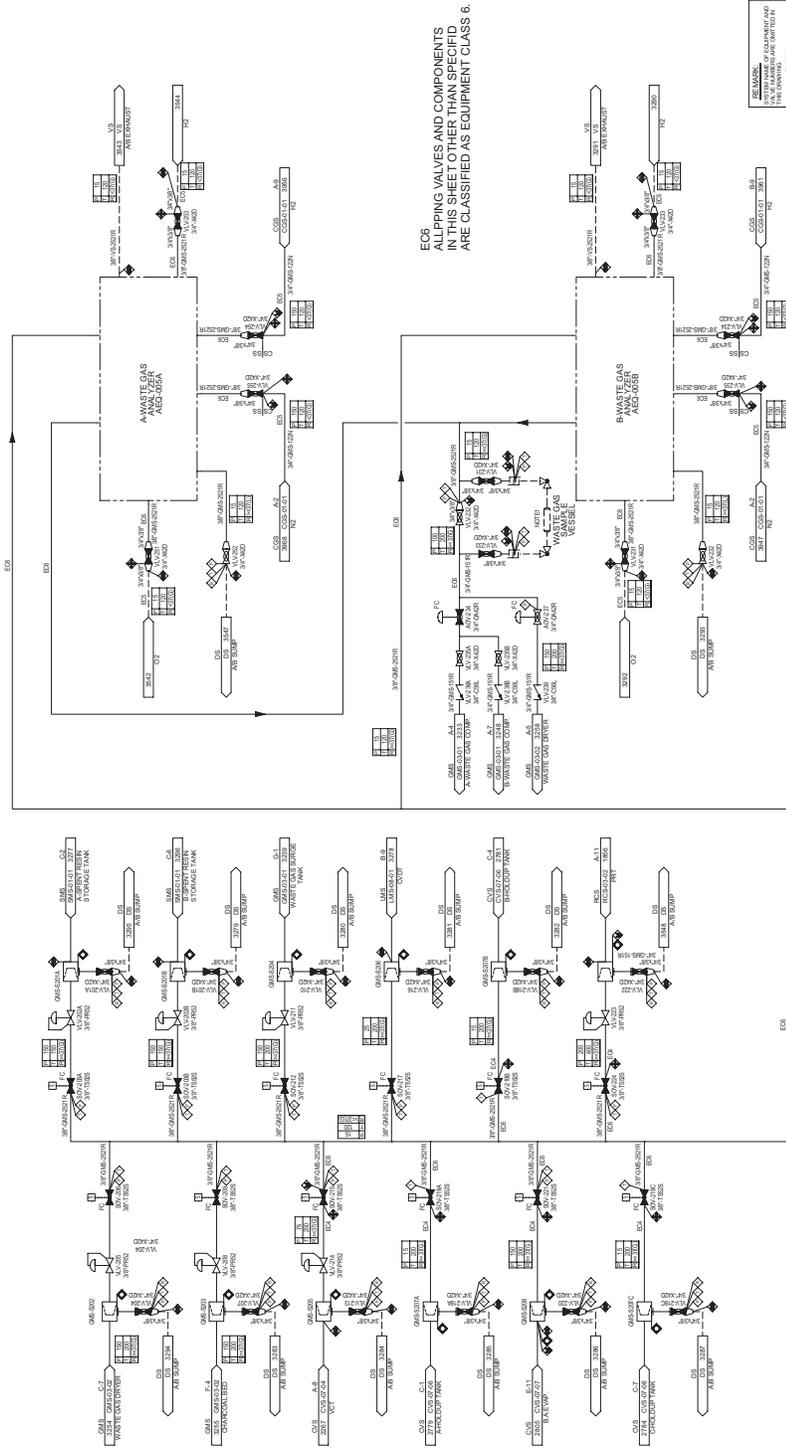
Impact on S-COLA

None.

Impact on DCD

None.

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



EOS
 ALL PIPING VALVES AND COMPONENTS
 IN THIS SHEET OTHER THAN SPECIFIC
 ARE CLASSIFIED AS EQUIPMENT CLASS 6.

REMARKS:
 THIS IS A WORKING DRAWING AND
 NOT TO BE USED FOR CONSTRUCTION
 WITHOUT THE APPROVAL OF THE
 DESIGNER.

Figure 11.3-201 Gaseous Waste Management System Piping and Instrumentation Diagram (Sheet 3 of 3)

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Attachment 2

Response to Request for Additional Information No. 2764 (CP RAI #34)

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.: 2764 (CP RAI #34)

SRP SECTION: 09.05.02 – COMMUNICATIONS SYSTEMS

**QUESTIONS for Instrumentation, Controls and Electrical Engineering 1 (AP1000/EPR Projects)
(ICE1)**

DATE OF RAI ISSUE: 9/3/2009

QUESTION NO.: 09.05.02-1

10 CFR Part 50, Appendix E, Part IV.E(9)(d), requires, in part, provisions for communications by the licensee with NRC Headquarters and the appropriate NRC Regional Office Operations Center from the nuclear power reactor control room, the onsite technical support center, and the near-site emergency operations facility. In addition, NRC Bulletin 80-15, "Possible Loss of Emergency Notification System (ENS) with Loss of Offsite Power," dated June 18, 1980, refers to a "... safeguards instrumentation bus backup up by an automatic transfer to batteries with an inverter or equally reliable power supply."

In Combined License Application, FSAR, Section 9.5.2.2.2.2, "Emergency Telephones," Luminant makes a commitment to NRC Bulletin 80-15 regarding backup power sources for the emergency communication systems, but does not specify how compliance with NRC Bulletin 80-15 will be achieved.

Luminant is requested to provide additional information regarding the back-up power supplies for communication systems to the NRC Operations Center, including specifics on how these back-up power sources comply with NRC Bulletin 80-15.

ANSWER:

NRC Bulletin 80-15 addresses the reliability of power supplies during Loss of Offsite Power (LOOP) for systems used to communicate with the NRC Operations Center via the Emergency Notification System (ENS). The CPNPP Units 3 and 4 ENS capability is part of the Federal Telecommunication System (FTS) independent phone link, with extensions in the Main Control Room (MCR), Technical Support Center (TSC) and Emergency Operations Facility (EOF).

The power supplies for the standard US-APWR plant communications systems are described in the US-APWR Design Control Document (DCD) Subsection 9.5.2.1.1. The communications systems are powered from non-safety related uninterruptible power supply (UPS) systems capable of operating in the event of LOOP. The emergency telephone station package described in FSAR Subsection 9.5.2.2.2.2 is also powered from non-safety related UPS. The FTS extensions in the MCR, TSC and EOF are all part of the emergency communications capability of the Private Automatic Branch

Telephone Exchange (PABX). The PABX power supplies are non safety-related and include independent chargers and batteries for each PABX node. The batteries have the capability to operate the plant telephone system for approximately eight hours following loss of normal ac power.

NRC Bulletin 80-15 includes provisions to demonstrate by test that ENS communication capability remains available following a loss of offsite power at the site. As described in DCD Subsection 9.5.2.4, tests are performed with loss of ac power to verify functionality of the UPS.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

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CP-200901454
TXNB-09054
10/15/2009

Attachment 3

Response to Request for Additional Information No. 2843 (CP RAI #30)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 2843 (CP RAI #30)

SRP SECTION: 02.02.01-02.02.02 – Identification of Potential Hazards in Site Vicinity

QUESTIONS for Siting and Accident Conseq Branch (RSAC)

DATE OF RAI ISSUE: 9/3/2009

QUESTION NO.: 02.02.01-02.02.02-1

RG 1.206, "Combined License Applications for Nuclear Power Plants (LWR Edition)," (June 2007) provides guidance regarding the information that is needed to ensure potential hazards in the site vicinity are identified and evaluated to meet the siting criteria in 10 CFR 100.20 and 10 CFR 100.21. The applicant did revise information in FSAR Section 2.2.2.2.8 pertaining to the DeCordova SES industrial facility by stating that it is located 9.35 mi northeast of the center point of CPNPP Units 3 and 4. Provide the conforming revisions to FSAR Sections 2.2.1, 2.2.3.1.1.2, and Figure 2.2-1 as well as FSAR Section 2.2.2.1 and Table 2.2-202 to reflect this revision.

ANSWER:

Subsections 2.2.1, 2.2.2.1, and 2.2.3.1.1.2 have been revised to reflect changes that were made pertaining to the DeCordova SES industrial facility. The revision pertaining to Subsection 2.2.2.1 includes clarification that Table 2.2-202 lists the facilities that are within or near the 5 mi radius of CPNPP. Figure 2.2-201 was previously revised and provided in FSAR Update Tracking Report, Revision 1, via Luminant letter TXNB-09009, dated April 28, 2009 to reflect that De Cordova SES industrial facility is located outside the 5-mi radius of CPNPP. Table 2.2-202 was not affected by the changes.

Impact on R-COLA

See attached FSAR Draft Revision1 pages 2.2-1, 2.2-3, and 2.2-13.

Impact on S-COLA

None.

Impact on DCD

None.

Comanche Peak Nuclear Power Plant, Units 3 & 4
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2.2 NEARBY INDUSTRIAL, TRANSPORTATION, AND MILITARY FACILITIES

This section of the referenced DCD is incorporated by reference with the following departures and/or supplements.

CP COL 2.2(1) Replace the content of **DCD Section 2.2** with the following.

The Comanche Peak Nuclear Power Plant (CPNPP) is located in Hood and Somervell counties, Texas. Hood County is located north of Somervell County. The two counties are bounded by Parker County to the north, Johnson County to the east, Bosque County to the south, Erath County to the west, and Palo Pinto County to the northwest, as seen in **Figure 2.1-203**.

The CPNPP site is accessible by road and rail. Interstate 20 (I-20) connects the Dallas-Fort Worth metropolitan area with Abilene, and its closest portion to the site is located approximately 28 mile (mi) northwest (**Reference 2.2-201**).

U.S. Highway 377 (US 377) runs southwest from the City of Fort Worth to Stephenville passing through Granbury. U.S. Highway 67 (US 67) connects Cleburne to Stephenville after passing through Glen Rose. The site is accessible by rail via a rail spur that runs from the CPNPP site to an intersection with the main line in Tolar, Texas. The Tolar line is owned by Fort Worth and Western Railroad and is located approximately 9.5 mi northwest of the center point between CPNPP Units 3 and 4.

This section of the safety analysis report provides information regarding the potential effects on the safe operation of the nuclear facility from industrial, transportation, mining, and military installations in the CPNPP vicinity.

2.2.1 Locations and Routes

CP COL 2.2(1) Replace the content of **DCD Subsection 2.2.1** with the following.

Within a 5-mi radius of the CPNPP site, there is one railroad, four farm-to-market roads, one state highway, and one federal highway, all with commercial traffic (**Reference 2.2-201**). Not including CPNPP Units 1 and 2, there are eight industrial facilities including two electric generation plants within 5 mi of the site center point (**Reference 2.2-202**). There are no public airports within 5 mi of the site center point (**Reference 2.2-213**). Specifically, the following transportation routes and industrial facilities are shown in **Figure 2.2-201**.

- IESI Somervell County Transfer Station
- Wolf Hollow 1, LP
- ~~DeCordova Steam Electric Station (SES)~~
- Glen Rose Medical Center

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2.01-02.02.0
2-1

Comanche Peak Nuclear Power Plant, Units 3 & 4
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the storage tanks are described in [Table 2.2-201](#), and the locations are shown in [Figure 2.2-201](#).

In addition to the registered petroleum storage tanks above, there are also underground and aboveground storage tanks at the three power plants located within the 5-mi radius. These tanks are described in [Subsections 2.2.2.2.7](#), [2.2.2.2.8](#), and [2.2.2.2.9](#).

Mining and quarry operations, drilling operations, and wells are discussed in [Subsection 2.2.2.2.11](#). Oil and gas pipelines are discussed in [Subsection 2.2.2.3](#). Military bases and missile sites are discussed in [Subsection 2.2.2.2.12](#). Evaluation of explosions postulated to occur on transportation routes near CPNPP is addressed in [Subsection 2.2.3.1.1.1](#).

2.2.2 Descriptions

CP COL 2.2(1) Replace the content of [DCD Subsection 2.2.2](#) with the following.

The industries within 5 mi of CPNPP are located to the south and east. [Figure 2.2-201](#) shows the location of these industries. A brief description of several major industrial facilities is listed below.

2.2.2.1 Description of Industrial Facilities

Seven industrial facilities, excluding electric generation stations, are located within 5 mi of CPNPP. [Table 2.2-202](#) displays the industrial facilities ~~near~~ within or near the 5 mi radius of CPNPP, their primary function or major products, and the number of persons employed. None of these facilities produce major products. Descriptions of these facilities are detailed in [Subsections 2.2.2.2.1](#), [2.2.2.2.2](#), [2.2.2.2.3](#), [2.2.2.2.4](#), [2.2.2.2.5](#), [2.2.2.2.6](#), and [2.2.2.2.10](#). [Subsections 2.2.2.2.7](#), [2.2.2.2.8](#), and [2.2.2.2.9](#) provide detailed information on the electrical generation stations closest to the CPNPP site, Wolf Hollow 1, LP, DeCordova SES, and the existing CPNPP Units 1 and 2. Aside from CPNPP Units 1 and 2, no nuclear generation plants are located within 50 mi of CPNPP.

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2-1

2.2.2.2 Description of Products and Materials

This subsection provides descriptions of the products and materials regularly manufactured, stored, used, or transported in the vicinity of CPNPP.

2.2.2.2.1 IESI Somervell County Transfer Station

This site is a waste transfer station for Somervell County. The facility is located 4.2 mi south-southeast of the site. No hazardous materials are stored on-site, with the exception of an oil dump. The oil dump has a capacity of 200 gal and is emptied periodically. Waste is consolidated and shipped to licensed and controlled landfills in Weatherford or Fort Worth.

Comanche Peak Nuclear Power Plant, Units 3 & 4
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simultaneously explode. The assumption of two trucks provides an added degree of conservatism. Note that this assumption bounds the explosive energy of commonly transported materials such as gasoline and propane. This conservative approach was taken because there are no restrictions on the type or quantity of materials that can be transported on the highway. The effects of blast-generated missiles would be less than those associated with the blast overpressure levels considered in Regulatory Guide 1.91. Because the overpressure criteria of the guide are not exceeded, the effects of blast-generated missiles are not considered.

There are no navigable waterways used for commercial shipping within 5 mi of the CPNPP Units 3 and 4 site, and there are no main railroad lines within 5 mi of CPNPP Units 3 and 4, as discussed in [Subsection 2.2.2.6](#). [Figure 2.2-201](#) shows a spur of the main railroad line that goes past CPNPP Units 3 and 4 and ends at CPNPP Units 1 and 2. This spur is used to transport materials to and from the site and is not used for commercial transportation of chemicals and commodities. Thus, this spur of the mainline is not considered to be a hazard to CPNPP Units 3 and 4.

2.2.3.1.1.2 Nearby Industrial Facilities

[Subsection 2.2.2.1](#) identifies the following facilities located within 5 mi of CPNPP Units 3 and 4, along with any potential hazardous material stored at those locations: the IESI Somervell County Transfer Station; Wolf Hollow 1, LP; ~~the DeCordova SES~~; the Glen Rose Medical Center; the Glen Rose WWTP; the Texas Department of Transportation Maintenance Station; and Cleburne Propane. [Subsection 2.2.1](#) identifies six registered petroleum storage tanks within 5 mi of the CPNPP Units 3 and 4 site. The contents, capacities, and locations of the tanks relative to CPNPP Units 3 and 4 are summarized in [Table 2.2-201](#).

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2-1

The IESI Somervell County Transfer Station does not store any significant amount of hazardous materials. Though Wolf Hollow 1, LP does store some flammable or explosive chemicals, the quantity is too small to pose a hazard at CPNPP Units 3 and 4. Although quantities of hazardous materials were not available for Wolf Hollow, materials were screened out based upon their ability to form an explosive vapor at ambient conditions. Materials that did not screen out due to flashpoint were then assessed based upon maximum available quantities from commercial vendors, whether they were registered petroleum tanks, or expected quantities at this type of facility. The DeCordova SES does not house any chemicals that may pose a fire, explosion, or a vapor cloud risk to CPNPP Units 3 and 4. The Glen Rose Medical Center and the Glen Rose WWTP do not contain any flammable or explosive materials. There are no hazardous materials stored in significant enough quantity at the Texas Department of Transportation Maintenance Station to pose a threat to CPNPP Units 3 and 4.

CTS-00698

Five registered underground storage tanks are located within 5 mi of the center point of CPNPP Units 3 and 4, three at Martha A. Newkirk and two at Somervell County Maintenance Department. Underground storage tanks do not represent a

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 2843 (CP RAI #30)

SRP SECTION: 02.02.01-02.02.02 – Identification of Potential Hazards in Site Vicinity

QUESTIONS for Siting and Accident Conseq Branch (RSAC)

DATE OF RAI ISSUE: 9/3/2009

QUESTION NO.: 02.02.01-02.02.02-2

RG 1.206 provides guidance regarding the information that is needed to ensure potential hazards in the site vicinity are identified and evaluated to meet the siting criteria in 10 CFR 100.20 and 10 CFR 100.21. FSAR Section 2.2.2.2.10 states that Wheeler Branch Reservoir and Water Treatment Facility is expected to become operational in 2010 and that chlorine cylinders are expected to be stored on-site and used for water treatment. Provide an assessment of the quantities involved and the potential effects on control room habitability from these activities.

ANSWER:

The form of chlorine that is planned to be used at the Wheeler Branch Reservoir and Water Treatment Facility is sodium hypochlorite at 12.5 percent. Approximately 1000 gallons will be stored onsite. Sodium hypochlorite has a HMIS health rating of 2. As stated in Subsection 2.2.3.1.3.1, only chemicals with NFPA 704 Health Hazard or HMIS Health ratings of 3 or 4 (highly or extremely toxic, respectively) were considered as potential toxicity threats, unless otherwise specified in Regulatory Guide 1.78 or NUREG/CR-6624. Thus, sodium hypochlorite stored at Wheeler Branch Reservoir and Water Treatment Facility does not pose a credible hazard to the control room.

Impact on R-COLA

See attached FSAR Draft Revision1 page 2.2-5.

Impact on S-COLA

None.

Impact on DCD

None.

**Comanche Peak Nuclear Power Plant, Units 3 & 4
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2.2.2.2.7 Wolf Hollow 1, LP

Wolf Hollow 1, LP is a 730-megawatt (MW) gas-fired combined-cycle power plant located 4.2 mi northeast of the CPNPP site (Reference 2.2-211). Hazardous materials stored on the Wolf Hollow 1, LP site are listed in Table 2.2-205. The OSHA permissible exposure limits for the reported toxic materials are in Tables 2.2-203 and 2.2-206.

At this time no information is available concerning on-site storage tanks. An inquiry on the TCEQ database was performed and no on-site storage tanks were reported for this facility.

2.2.2.2.8 DeCordova SES

The DeCordova SES is a conventional gas/oil steam generating plant with four additional natural gas combustion turbines. The plant is located ~~9.353-6~~ mi northeast of the center point of CPNPP Units 3 and 4. Hazardous materials stored on-site are listed in Table 2.2-207. The OSHA permissible exposure limits for the reported toxic materials are in Table 2.2-203.

CTS-00696

DeCordova SES has 13 aboveground storage tanks. The contents of the storage tanks are described in Table 2.2-208.

2.2.2.2.9 Comanche Peak Nuclear Power Plant

The existing CPNPP Units 1 and 2 are located within the CPNPP site boundary. The hazardous chemicals located on-site are listed in Table 2.2-209 while the OSHA permissible exposure limits are listed in Tables 2.2-203, 2.2-206, and 2.2-210. There are 22 aboveground storage tanks and four underground storage tanks on-site. These tanks hold petroleum products, gases, and other chemicals. The contents of the storage tanks are described in Table 2.2-211.

2.2.2.2.10 Wheeler Branch Reservoir and Water Treatment Facility

The Wheeler Branch Reservoir was completed in 2007 and is located 3.2 mi southeast of the CPNPP Units 3 and 4 center point. The reservoir has a surface area of 180 acres (ac) and a storage capacity of 4118 acre-feet (ac-ft). Plans are in place for a water treatment plant to process the 2000 ac-ft of water available each year for municipal use. The water treatment plant consists of the plant, ancillary facilities, and treated water distribution and storage facilities. The water treatment plant is expected to be constructed in 2010. It is anticipated that ~~cylinders of chlorine~~ 1000 gallons of sodium hypochlorite at 12.5 percent are stored on-site for use in water treatment.

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2-2

2.2.2.2.11 Mining and Quarrying Activities

There are no coal or lignite mines within the vicinity of CPNPP (Reference 2.2-208). There are 37 regular producing gas wells and two injection wells within 5 mi

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Attachment 4

Response to Request for Additional Information No. 2844 (CP RAI #31)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 2844 (CP RAI #31)

SRP SECTION: 02.02.03 – Evaluation of Potential Accidents

QUESTIONS for Siting and Accident Conseq Branch (RSAC)

DATE OF RAI ISSUE: 9/3/2009

QUESTION NO.: 02.02.03-1

RG 1.206, "Combined License Applications for Nuclear Power Plants (LWR Edition)," (June 2007) provides guidance regarding the information that is needed to ensure potential hazards in the site vicinity are identified and evaluated to meet the siting criteria in 10 CFR 100.20 and 10 CFR 100.21. The dimethylamine and hydrazine stored in tanks that are approximately 300 feet from Comanche Peak Nuclear Power Plant, Units 3 and 4 are considered in the toxic chemical evaluation in FSAR Section 2.2.3.1.3 (Table 2.2-214); however, these chemicals have not been considered as a potential hazard from a potential explosion. Since these chemicals are flammable and hazardous; provide a discussion of the on-site explosion hazard from these chemicals in Section 2.2.3.1.1.3.

ANSWER:

The hydrazine stored and used on-site is a 35-percent solution, not pure hydrazine; 35-percent hydrazine has an NFPA flammability rating of 1. The dimethylamine stored and used on-site is a 40-percent solution, not pure dimethylamine; 40-percent dimethylamine has an HMIS flammability rating of 1. Flammability rating 1 materials must be preheated before ignition can occur. Materials with this rating require considerable preheating under all ambient temperature conditions before ignition and combustion can occur. Thus, the form of hydrazine and dimethylamine stored and used on-site does not pose an explosion hazard. Table 2.2-214 has been revised to show the concentrations of these chemicals that will be used.

Impact on R-COLA

See attached FSAR Draft Revision 1 page 2.2-45.

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	<u>1.0E+01 ppm</u>	<u>5.7 ppm</u>
DeCordova SES	Sodium hydroxide	15,294 lb	3.76 mi ^(b)	<u>10 mg/m³</u>	<u>Not Analyzed^(c)</u>
	Sulfuric acid	45,981 lb		<u>15 mg/m³</u>	<u>1.9E-4 mg/m³</u>
Wolf Hollow 1, LP	Sodium hydroxide	19,118 lb	3.9 mi	<u>10 mg/m³</u>	<u>Not Analyzed^(c)</u>
	Sulfuric acid	57,477 lb		<u>15 mg/m³</u>	<u>2.0E-4 mg/m³</u>
Sunoco Pipeline, LP	Hydrogen sulfide	1716 lb	0.33 mi	<u>1.0E+02 ppm</u>	<u>4.17 ppm</u>
CPNPP Units 1 and 2, Waste Management Bldg.	Sulfuric acid	1250 gal (19,159 lb)	733 ft	<u>15 mg/m³</u>	<u>1.75E-03 mg/m³</u>
CPNPP Units 1 and 2, Bulk Gas Storage	Liquefied petroleum gas	4000 gal	1400 ft	<u>2.10E+03 ppm</u>	<u>3.63E+01 ppm</u>
	Carbon dioxide	6000 lb		<u>4.0E+04 ppm</u>	<u>1.46E+01 ppm</u>
CPNPP Units 3 and 4, Water Treatment Chemicals	Morpholine	10,000 gal	<300 ft	<u>1.4E+03 ppm</u>	<u>3.49E-01 ppm</u>
	Dimethylamine, 40%	5000 gal	<300 ft	<u>5.00E+02 ppm</u>	<u>1.65E+01 ppm</u>
	Hydrazine, 35%	1000 gal	<300 ft	<u>5.0E+01 ppm</u>	<u>9.29E-02 ppm</u>
	Ammonia	1000 gal	<300 ft	<u>3.0E+02 ppm</u>	<u>2.70E+01 ppm</u>
	Sulfuric acid	10,000 gal	<1200 ft	<u>15 mg/m³</u>	<u>6.19E-03 mg/m³</u>

CTS-00696

RCOL2_02.0
2.03-1

CTS-00696

a) These chemicals do not meet the Regulatory Guide 1.78 screening criteria. They are further evaluated for control room habitability in Section 6.4.

b) Evaluations were completed using 3.7 miles. Actual distance is 9.35 miles, as shown in Subsection 2.2.2.2.8. Therefore, the results of these evaluations are conservative.

c) This chemical does not readily disperse; therefore, it was not analyzed.

CTS-00696

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 2844 (CP RAI #31)

SRP SECTION: 02.02.03 – Evaluation of Potential Accidents

QUESTIONS for Siting and Accident Conseq Branch (RSAC)

DATE OF RAI ISSUE: 9/3/2009

QUESTION NO.: 02.02.03-2

RG 1.206 provides guidance regarding the information that is needed to ensure potential hazards in the site vicinity are identified and evaluated to meet the siting criteria in 10 CFR 100.20 and 10 CFR 100.21. A number of scenarios provided in FSAR Section 2.2.3.1.3, were analyzed using the area locations of hazardous atmospheres (ALOHA) analytical tool. Provide a discussion of the Sunoco Crude oil pipeline explosion scenario using the ALOHA model or other analysis.

ANSWER:

The Sunoco crude oil pipeline does not represent an explosion or flammable vapor cloud hazard at CPNPP Units 3 and 4. As discussed in Subsection 2.2.3.1.2.3, both large and small breaks in the Sunoco crude oil pipeline were analyzed with break flows of 47 cubic feet per second (cfs) and 0.62 cfs, respectively. For large breaks, it is assumed by the analysis that the flow is directly discharged into the atmosphere and the break occurs at a distance of 0.36 mi from the nearest safety-related structure. The resulting overpressure at the nearest safety-related structure is 0.274 psi, which is much less than the 1 psi acceptance criteria. For small breaks, it is assumed by the analysis that no absorption or evaporation occurs as the crude oil makes its way to the retaining ponds and the break occurs at a distance of 0.29 mi from the nearest safety-related structure. An analysis of a vapor cloud formation from evaporation on this pond with a delayed ignition determined the peak overpressure to be 0.171 psi at the nearest safety-related structure. The concentration at the CPNPP Units 3 and 4 control room intakes is below 8680 ppm, which is below the LEL of 13,000 ppm. The foregoing information is in TXUT-001-FSAR-2.2.3-CALC-008, which is available in the electronic reading room.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 2844 (CP RAI #31)

SRP SECTION: 02.02.03 – Evaluation of Potential Accidents

QUESTIONS for Siting and Accident Conseq Branch (RSAC)

DATE OF RAI ISSUE: 9/3/2009

QUESTION NO.: 02.02.03-3

RG 1.206 provides guidance regarding the information that is needed to ensure potential hazards in the site vicinity are identified and evaluated to meet the siting criteria in 10 CFR 100.20 and 10 CFR 100.21. Provide the basis for and the release duration that was used (at the gas release rate of 15.6 million cu.ft./day) for the analysis (i.e., the ALOHA model) of gas wells in FSAR Section 2.2.3.1.2.4 to calculate the gas concentration at the control room intake (at a distance of 1.2 mi.).

ANSWER:

Flow from gas wells is represented by a G-1 Potential, which is a measurement of the absolute open flow of a well. The G-1 Forms for all the wells within 5 miles of CPNPP were supplied by the Railroad Commission of Texas. Of these wells, the largest absolute open flow is 541,667 ft³/hr or approximately 13,000,000 ft³/day. This value was increased by 20 percent to allow for the flow associated with gathering pipes and to account for the possibility of a future well with a larger absolute open flow. The result of the 20 percent increase is 15,600,000 ft³/day. The closest well to CPNPP is 1.2 miles; that distance was chosen for conservatism. The foregoing information is in TXUT-001-FSAR-2.2.3-CALC-006, which is available in the electronic reading room.

TXUT-001-FSAR-2.2-CALC-014, "Control Room Toxic Chemical Habitability Analysis, Initial Screening," uses TXUT-001-FSAR-2.2.3-CALC-006 as a reference. Natural gas is not considered a control room habitability threat based upon a review of its MSDS. Natural gas has a NFPA health rating of 1 and only chemicals with NFPA 704 ratings of 3 or 4 (highly or extremely toxic) were considered in the analysis, unless otherwise specified in RG 1.78 or NUREG/CR-6624. Furthermore, natural gas is lighter than air so a release would disperse quite readily, thus concentrations at the control room intake due to a release from the closest well 1.2 miles away would be negligible. As a result, release duration is not relevant and the natural gas concentration at the control room intake was not calculated.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 2844 (CP RAI #31)

SRP SECTION: 02.02.03 – Evaluation of Potential Accidents

QUESTIONS for Siting and Accident Conseq Branch (RSAC)

DATE OF RAI ISSUE: 9/3/2009

QUESTION NO.: 02.02.03-4

RG 1.206 provides guidance regarding the information that is needed to ensure potential hazards in the site vicinity are identified and evaluated to meet the siting criteria in 10 CFR 100.20 and 10 CFR 100.21. The chlorine hazard was provided as a bounding analysis in Section 2.2.3.1.3.2.1, FSAR Table 2.2-214, of the assessment of toxic chemicals that may affect control room habitability; however, the hazard was only evaluated from mobile sources. The IDLH value (i.e., limiting concentration assessed for immediate danger to life and health) for chlorine is 10 ppm. For ethylene oxide and propylene oxide (which are two of the chemicals considered in the evaluation of explosion scenarios), the IDLH values are 800 and 400 ppm, respectively. The quantities and behavior of these chemicals may be different from chlorine. Provide the rationale for the total chlorine quantity (42,500 lb.) and behavior as the bounding analysis for considering the effects of a tanker explosion on control room habitability.

ANSWER:

Any material registered with the federal government as hazardous material is allowed to travel along any public road in the state of Texas as long as it is properly packaged, transported, and the proper credentials are obtained by the carrier. Chlorine was analyzed because it is a common chemical that is highly toxic with a low IDLH value (10 ppm). Further, chlorine is heavier than air so it may travel laterally without significant dispersion under calm conditions. The total chlorine quantity analyzed is based on the loading for a large tanker truck.

Although not specifically identified to be transported on FM 56, ethylene oxide and propylene oxide were analyzed as an explosion hazard in Subsection 2.2.3.1.2.1. The methodology presented in Regulatory Guide 1.78 screens from further consideration quantities of ethylene oxide and propylene oxide less than 37.8 and 50 tons, respectively, at a distance of 1.4 miles. These quantities exceed the capacity of a large tanker truck, which is less than 34 tons for these chemicals. Thus, ethylene oxide and propylene oxide meet the Regulatory Guide 1.78 screening criteria and do not have to be considered further for control room habitability.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 2844 (CP RAI #31)

SRP SECTION: 02.02.03 – Evaluation of Potential Accidents

QUESTIONS for Siting and Accident Conseq Branch (RSAC)

DATE OF RAI ISSUE: 9/3/2009

QUESTION NO.: 02.02.03-5

RG 1.206 provides guidance regarding the information that is needed to ensure potential hazards in the site vicinity are identified and evaluated to meet the siting criteria in 10 CFR 100.20 and 10 CFR 100.21. In selecting the chemical species, locations and quantities, the rationale for selection and for quantities have not been described in sufficient detail in FSAR Section 2.2.3.1.3.2 and FSAR Table 2.2-214. Provide a discussion of the methods and rationale for selection of the chemical species and quantities. In addition, the amount of sulfuric acid given in FSAR Table 2.2-214 (19,159 lb.) used for CPNPP Units 1 and 2 is different from the amount of sulfuric acid given in FSAR Table 2.2-209 (168,000 lb.); provide a clarification or, if appropriate, a reconciliation between these amounts.

ANSWER:

Section 2.2 identifies the facilities located within five miles of the site and the chemicals located at each facility. Tables 2.2-203 through 2.2-213 list the chemicals at the various facilities. As described in Subsection 2.2.3.1.3.1, only chemicals with NFPA 704 Health Hazard or HMIS Health ratings of 3 or 4 (highly or extremely toxic, respectively) are considered in this calculation, unless otherwise specified in RG 1.78 or NUREG/CR-6624. All chemicals that did not meet these criteria were excluded from further consideration. The facilities containing chemicals that were not screened out are discussed in Subsection 2.2.3.1.3.2.2.

Quantities of chemicals used at Wolf Hollow 1, LP were not provided by that station. In lieu of having this information, it was assumed the chemicals used are the same as those used at DeCordova SES increased by 25% to account for uncertainty. Wolf Hollow 1, LP is a 730 MW gas-fired combined cycle plant that uses two gas turbines and a 250 MW steam turbine. This is comparable to DeCordova SES, which consists of a conventional gas/oil steam generating unit and four combustion turbines. The capacity of the steam generating unit at DeCordova SES is 818 MW, and the capacity of the four combustion turbines is 260 MW, for a total of 1,078 MW.

Three retaining ponds are located between the CPNPP site and the Sunoco crude oil pipeline that runs west-southwest of the site. These ponds serve to prevent spilled oil from reaching the safe shutdown impoundment for CPNPP Units 1 and 2. The maximum quantity of oil released is 14,770 bbl. This

value is based on a 400 bbl/hr leak for a 32-hour duration with the inclusion of the amount of oil that may be in the length of pipe between valves. This maximum represents the largest leak that would go undetected because the pipeline would not depressurize. The duration of the leak is based on a CPNPP Units 1 and 2 commitment to monitor oil accumulation in the three retaining ponds once per day, thus ensuring that leaks smaller than 400 Bbl/hr do not go undetected for more than 32 hours. The hydrogen sulfide concentration in the crude oil is 400 ppm.

Chlorine is deemed a sufficient example toxic gas that serves as the qualification chemical for roadway transportation chemical screening. Further discussion of roadway transportation analysis is provided in the response to RAI #31, Question 02.02.03-4.

Table 2.2-209 shows total inventory of the listed chemicals at CPNPP Units 1 and 2; Table 2.2-214 identifies the quantities at the specified locations on the site that do not meet the Regulatory Guide 1.78 Screening Criteria.

The foregoing information is in TXUT-001-FSAR-2.2.3-CALC-014, which is available in the electronic reading room.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 2844 (CP RAI #31)

SRP SECTION: 02.02.03 – Evaluation of Potential Accidents

QUESTIONS for Siting and Accident Conseq Branch (RSAC)

DATE OF RAI ISSUE: 9/3/2009

QUESTION NO.: 02.02.03-6

RG 1.206 provides guidance regarding the information that is needed to ensure potential hazards in the site vicinity are identified and evaluated to meet the siting criteria in 10 CFR 100.20 and 10 CFR 100.21. In the analysis of control room habitability, the HABIT analytical tool was used. There are intermediate calculated values that are useful in performing the NRC Staff's confirmatory evaluation. Provide the calculated control room intake concentration of toxic chemicals analyzed with EXTRAN module of HABIT to compare against the respective IDLH value (immediate danger to life and health) and the calculated concentration in the control room analyzed with the CHEM module of HABIT.

ANSWER:

The calculated control room intake concentration of toxic chemicals analyzed with EXTRAN module of HABIT and the calculated concentration in the control room analyzed with the CHEM module of HABIT are shown on the attached table. The values shown are peak concentrations calculated with the HABIT code for the control room intake (EXTRAN module) and in the control room (CHEM module).

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

Attachment

Table Responding to Question 02.02.03-6.

Table Responding to Question 02.02.03-6

Hazardous Chemical Location	Chemicals	IDLH	Control Room Intake Concentration	Concentration in Control Room
Roadway FM56	Chlorine	1.0E+01 ppm	5.76E+01 ppm	5.7 ppm
DeCordova SES	Sodium hydroxide	10 mg/m ³	Not Analyzed*	Not Analyzed*
	Sulfuric acid	15 mg/m ³	2.15E-03 mg/m ³	1.9E-4 mg/m ³
Wolf Hollow 1, LP	Sodium hydroxide	10 mg/m ³	Not Analyzed*	Not Analyzed*
	Sulfuric acid	15 mg/m ³	2.35E-3 mg/m ³	2.0E-4 mg/m ³
Sunoco Pipeline, LP	Hydrogen sulfide	1.0E+02 ppm	1.65E+02 ppm	4.17 ppm
CPNPP Units 1 and 2, Waste Management Bldg.	Sulfuric acid	15 mg/m ³	2.23E-02 mg/m ³	1.75E-3 mg/m ³
CPNPP Units 1 and 2, Bulk Gas Storage	Liquefied petroleum gas	2.10E+03 ppm	1.05E+03 ppm	3.63E+01 ppm
	Carbon dioxide	4.0E+04 ppm	7.05E+02 ppm	1.46E+01 ppm
CPNPP Units 3 and 4, Water Treatment Chemicals	Morpholine	1.4E+03 ppm	4.14E+00 ppm	3.49E-01 ppm
	Dimethylamine	5.00E+02 ppm	9.44E+02 ppm	1.65E+01 ppm
	Hydrazine	5.0E+01 ppm	1.04E+00 ppm	9.29E-2 ppm
	Ammonia	3.0E+02 ppm	4.66E+03 ppm	2.70E+01 ppm
	Sulfuric acid	15 mg/m ³	8.38E-02 mg/m ³	5.90E-03 mg/m ³

*This chemical does not readily disperse; therefore, it was not analyzed.

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CP-200901454
TXNB-09054
10/15/2009

Attachment 5

Response to Request for Additional Information No. 2875 (CP RAI #33)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 2875 (CP RAI #33)

SRP SECTION: 03.05.01.05 – Site Proximity Missiles (Except Aircraft)

QUESTIONS for Siting and Accident Conseq Branch (RSAC)

DATE OF RAI ISSUE: 9/3/2009

QUESTION NO.: 03.05.01.05-1

Regulatory Guide 1.206, 'Combined License Applications for Nuclear Power Plants (LWR Edition)' (June 2007), and NUREG-0800, 'Standard Review Plan (SRP),' Section 3.5.1.5, 'Site Proximity Missiles (Except Aircraft),' establish the criteria the NRC staff intends to use to review combined license (COL) applications. SRP 3.5.1.5 provides guidance regarding the identification and evaluation of potential hazards in the site vicinity to ensure that the siting criteria complies with the requirements of Title 10 of the Code of Federal Regulations, (10 CFR) 100.20 and 10 CFR 100.21. A postulated failure of a turbine from either Comanche Peak Nuclear Power Plant (CPNPP), Units 1 or 2 could result in a missile representing an external hazard to the safe operation of CPNPP Units 3 and 4. Consequently, this assessment has not been addressed in the COL application, Part 2, FSAR for CPNPP Units 3 and 4. Provide a discussion on the impact a potential missile from a Unit 1 or 2 turbine would have on Units 3 and 4.

ANSWER:

As described in Subsection 3.5.1.3.1, the location of CPNPP Units 1 and 2 is such that CPNPP Units 3 and 4 are outside the turbine missile strike. Therefore, no potential site-proximity missile hazards, including turbine missiles from CPNPP Units 1 and 2, are identified.

Impact on R-COLA

See attached marked-up FSAR Draft Revision 1 page 3.5-2.

Impact on S-COLA

None.

Impact on DCD

None.

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

10^{-2} per year, which is a more conservative estimate than for a favorably oriented single unit. CPNPP Unit 3 and 4 procedures will be implemented 6 months prior to delivery of the T/G to require inspection intervals established in Technical Report, MUAP-07028-NP, "Probability of Missile Generation From Low Pressure Turbines" (Reference 3.5-17), and to require a turbine valve test frequency per Technical Report, MUAP-07029-NP, "Probabilistic Evaluation of Turbine Valve Test Frequency" (Reference 3.5-18), and other actions to maintain P_1 within acceptable limits as outlined in NUREG-0800, Standard Review Plan (SRP) 3.5.1.3, Table 3.5.1.3-1 (Reference 3.5-7). These inspection intervals maintain the probability of turbine failure resulting in the ejection of turbine rotor (or internal structure) fragments through the turbine casing, P_1 , as less than 10^{-5} per year. The acceptable risk rate $P_4 = P_1 \times P_2 \times P_3$ is therefore maintained as less than 10^{-7} per year.

RCOL2_03.0
5.01.03-1

3.5.1.5 Site Proximity Missiles (Except Aircraft)

CP COL 3.5(3) Replace the paragraph of **DCD Subsection 3.5.1.5** with the following.

As described in **Section 2.2**, no potential site-proximity missile hazards including turbine missiles from CPNPP Units 1 and 2 are identified except aircraft, which are evaluated in Subsection 3.5.1.6. Subsection 3.5.1.3.1 provides further discussion on the assessment of turbine missiles from CPNPP Units 1 and 2.

RCOL2_03.0
5.01.05-1

3.5.1.6 Aircraft Hazards

CP COL 3.5(4) Replace the paragraph of **DCD Subsection 3.5.1.6** with the following.

The probability of aircraft-related accidents for CPNPP Units 3 and 4 is less than an order of magnitude of 10^{-7} per year for aircraft, airway, and airport information reflected in **Subsection 2.2.2.7** and expanded as follows.

- Allowing for an 8 nautical mile wide airway, the plant is at least 2 statute miles beyond the edge of the nearest federal airways.
- The reported average operations of 73 per day (26,645 per year) at Granbury Municipal airport are well below the conservative threshold of $500 D^2$ operations per year, where D is the plant-to-airport distance of 10 statute miles.
- Allowing for a 10 nautical mile wide airway, the plant is 2 statute miles beyond the edge of the nearest military flight path.

Since the plant is within 5 statute miles from the nearest edge of military training route VR-158, the probability of an aircraft crashing into the plant (P_{FA}) is estimated in the following manner:

U. S. Nuclear Regulatory Commission
CP-200901454
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10/15/2009

Attachment 6

Response to Request for Additional Information No. 3400 (CP RAI#36)

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

**Comanche Peak Units 3 and 4
Luminant Generation Company LLC
Docket No. 52-034 and 52-035**

RAI NO.: 3400 (CP RAI #36)

SRP SECTION: 11.03 – Gaseous Waste Management System

QUESTIONS for Health Physics Branch (CHPB)

DATE OF RAI ISSUE: 9/3/2009

QUESTION NO.: 11.03-2

Tables 11.3-8R and 11.3-203 in the COLA, Part 2, FSAR (Rev 0) present GASPARD II code input parameter values for the site-specific application to calculate doses from gaseous effluents for compliance with 10 CFR 50 Appendix I and 40 CFR 190. The NRC staff's review of Section 11.3 indicates insufficient information is presented on site-specific parameter values and their basis to support Luminant's conclusions. Because GASPARD II applies effluent release concentrations calculated from a modified version of the PWR-GALE code (Refer to US-APWR DCD RAI 402-3028), the NRC staff is unable to independently confirm Luminant's dose calculations for a reasonable assurance of safety conclusion. Please provide the following information.

1. Provide a full description and supporting rationale for all modifications made to the code subroutines and submit the PWR-GALE input/output files for the site-specific application
2. Submit the GASPARD II code input/output files for the site-specific applications.
3. Submit the calculation and supporting technical basis documents including references for selecting the site-specific input parameter values in the GASPARD II code calculations.
4. Section 11.3.3.1 indicates doses calculated from site-specific parameters listed in Table 11.3-8R and presented in Table 11.3-9R result in a gamma air dose of 5.77E-03 mrad/yr, beta air dose of 4.46E-02 mrad/yr, total body dose of 4.72E-02 mrem/yr, skin dose of 8.55E-02 mrem/yr, and organ (child's bone) dose of 1.40E+00 mrem/yr. However, Table 11.3-9R presents a total body dose of 3.69E-03 mrem/yr and skin dose of 3.45E-02 mrem/yr (tabulated gamma and beta air doses and child's bone dose are the same as those in Section 11.3.3.1). Please address this inconsistency.
5. Section 11.3.3.1 indicates doses calculated from site-specific parameters listed in Table 11.3-8R and presented in Table 11.3-201 result in a total body dose of 1.58 person-rem and thyroid dose of 1.98 person-rem. However, there is no tabulated data in Section 11.2 that presents this population dose information (similar to individual doses presented in Table 11.3-9R). Please address this inconsistency.

6. Section 11.3.3.1 describes an evaluation for calculating gaseous effluent doses from the evaporation pond that conservatively assumes 50% of the liquid effluent release from Comanche Peak Nuclear Power Plant (CPNPP), Units 3 and 4 is diverted to this pond and is discharged to atmosphere as aerosol and vapor. However, another postulated scenario involving the pond was not addressed. Please provide an evaluation to address the onsite and offsite dose consequences from a postulated release of windblown dust emissions containing plant-derived corrosion and fission products into the environment if the liquid from evaporation pond should dry out during drought periods experienced at the site. Submit the analysis and technical basis documents including references addressing the potential onsite and offsite dose consequences of this postulated scenario, or justify its exclusion.
7. Section 11.3.3.3 indicates the offsite dose calculation manual (ODCM) for CPNPP, Units 3 and 4 is to be developed using guidance in NEI 07-09. This section also indicates that CPNPP, Units 1 and 2 have an existing ODCM that is to reflect the new reactor units (CPNPP Units 3 and 4). However, it is not clear whether the existing ODCM adequately addresses all elements in NEI 07-09A (Rev 0) approved by the NRC in March 2009. Please clarify this statement.

Revise the COLA to include this information and provide a markup of the FSAR in your response.

ANSWER:

1. The CPNPP Units 3 and 4 effluent releases are based on US-APWR DCD calculations. The liquid effluent release is the total release of the DCD calculation minus detergent waste release (see Table 11.2-10R). The gaseous effluent release from the vent stack is the same as the DCD calculation (see the column "Source Term" in Table 11.3-8R). The gaseous effluent release from the evaporation pond is based on the half of the liquid effluent release diverted to the evaporation pond (see FSAR subsection 11.3.3.1).

A description and supporting rationale for all modifications made to the PWR-GALE code subroutines (including source/execute/input/output files for DCD calculations) have already been sent to NRC from Mitsubishi Heavy Industries (MHI) in response to DCD RAI No. 164 (ML090570441), 189 (ML090770414), and 402 (ML092090556).

2. The input and output files of the GASPARI code for the CPNPP Units 3 and 4 calculations have been sent to NRC in Luminant letter TXNB-09045 dated September 14, 2009.
3. The calculation and supporting technical basis document is attached to this response.
4. The values in Subsection 11.3.3.1 are typographical errors. The values have been replaced with the correct values in FSAR Updated Tracking Report (UTR) Revision 4 (ML092520125).
5. The doses given in Subsection 11.3.3.1 for the population within 50 miles were calculated using the GASPARI code with the inputs given in Tables 11.3-8R and 11.3-201. Because only two values are reported for population doses within 50 miles, it was not considered necessary to create a table for these values. These values are consistent with those given in the GASPARI code output.
6. The possibility of windblown dust emissions containing plant-derived corrosion and fission products is addressed by design (providing wash water) and by operating procedures. As stated in FSAR Subsection 11.2.3.1, the pond is washed each time the contents are emptied to significantly reduce the potential for accumulation of residual contamination and the bottom of the pond is sloped towards the discharge pit to facilitate complete drainage. Therefore, airborne residual corrosion and

fission products that could be spread by wind gusts are minimized and there are no postulated onsite or offsite dose consequences.

7. FSAR Subsection 11.3.3.3 was deleted in FSAR Updated Tracking Report (UTR) Rev.0 (ML091120280) reflecting the combination of COL 11.5(3) with COL 11.5(2) in the DCD. In FSAR UTR Rev.4 (ML092520125), FSAR Subsection 11.5.2.9 was revised to reflect that the ODCM will be re-written to apply to all four CPNPP units and to conform with NEI 07-09A (Rev 0) approved by the NRC in March 2009. This will be accomplished before receipt of radioactive material in Unit 3 in accordance with FSAR Table 13.4-201.

Impact on R-COLA

None.

Impact on S-COLA

None.

Impact on DCD

None.

Attachment

CPNPP Offsite Dose due to Normal Gaseous Releases, TXUT-001-ER-5.4-CALC -011, Rev. 2.

Attachment 7

CPNPP Offsite Dose due to Normal Gaseous Releases, TXUT-001-ER-5.4-CALC-011, Rev. 2 (on CD)