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CP-200901579  
Log # TXX-09136

Ref. # 10 CFR 50.4

November 23, 2009

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

**SUBJECT:** COMANCHE PEAK STEAM ELECTRIC STATION  
DOCKET NOS. 50-445 AND 50-446  
DENIAL OF NONCITED VIOLATION IN NRC INTEGRATED INSPECTION REPORT  
05000445/446 2009004

- REFERENCES:**
1. NRC Integrated Inspection Report 05000445/446 2009004 dated October 27, 2009 from Wayne C. Walker of NRC to Rafael Flores.
  2. Letter logged TXX-08105 dated July 24, 2008, from Rafael Flores of Luminant Power to the NRC submitting Comanche Peak Licensing Basis on Use of Manual Actions for Fire Protection.

Dear Sir or Madam:

NRC Inspection Report 2009004 for Comanche Peak Units 1 and 2 issued on October 27, 2009 (Reference 1) summarized the results of the Integrated Inspection for the third quarter of 2009. Per 10CFR50.4, and in accordance with the guidance in the Enforcement Policy, Luminant Generation Company LLC (Luminant Power) hereby disputes one of the noncited violations identified in the report. A detailed assessment of this noncited violation is presented in the attachment.

A "Green" Finding was identified in the report for failure to ensure that one train of the equipment required to achieve and maintain safe hot shutdown conditions remained free from fire damage as specified in the approved fire protection program. The inspectors identified that the licensee relied upon local manual actions to mitigate the effects of potential fire damage rather than provide the physical separation or protection required in the approved fire protection program.

Reference 2 provided the Comanche Peak licensing basis on the use of manual actions as a means of ensuring that one train of systems necessary to achieve and maintain safe hot shutdown conditions is free of fire damage. Since before the initial licensing of Comanche Peak Unit 1 in 1990, the licensing basis for Comanche Peak allowed credit for manual actions to achieve and maintain safe shutdown. The attachment provides additional information concerning the Comanche Peak manual action license basis.

The NRC contention that local manual actions to mitigate the effects of potential fire damage rather than provide the physical separation or protection required in the approved fire protection program is different from what was approved at the time Comanche Peak Unit 1 was licensed.

A member of the STARS (Strategic Teaming and Resource Sharing) Alliance

Callaway · Comanche Peak · Diablo Canyon · Palo Verde · San Onofre · South Texas Project · Wolf Creek

*IEDI*  
*NRC*

This communication contains no new licensing basis commitments regarding Comanche Peak Units 1 and 2.

We respectfully request that you fully consider the information provided in the attached denial. Should you have any questions, please contact me at (254)897-8601 or Mr. Jack Hicks at (254)897-6725.

Sincerely,

Luminant Generation Company LLC

Rafael Flores

By:   
Fred W. Madden  
Director, Oversight & Regulatory Affairs

Attachment- Denial of Noncited Violation in NRC Inspection Report 05000445/446 2009004

Enclosure- Affidavit of Harold R. Beck dated November 19, 2009

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

**ATTACHMENT TO TXX-09136**

**DENIAL OF NONCITED VIOLATION IN NRC INSPECTION REPORT 05000445/446 2009004**

**NONCITED VIOLATION 05000445/446 2009004-05, "Failure to Assure that One Train of Equipment is Free From Fire Damage"**

Excerpt from pages 28-31 of NRC Inspection Report 2009004:

**Introduction.** The inspectors identified a Green noncited violation of Unit 1 License Condition 2.G and Unit 2 License Condition 2.G. Specifically, the licensee failed to ensure that one train of the equipment required to achieve and maintain safe hot shutdown conditions remained free from fire damage as specified in the approved fire protection program. The licensee relied upon local manual actions to mitigate the effects of potential fire damage rather than provide the physical separation or protection required in the approved fire protection program.

**Description.** The inspectors reviewed a sample of three fire areas in Unit 1, which do not require evacuation of the control room during the shutdown. The inspectors reviewed the approved fire protection program as defined in License Condition 2.G and determined that one train of equipment required to achieve and maintain hot shutdown is required to be free from fire damage. The inspectors noted that the approved fire protection program allows local manual actions to respond to spurious operations of other equipment that could impact the safe shutdown but do not directly perform the required safe shutdown functions.

The inspectors conducted walkdowns with operations personnel of Procedure ABN-804A, "Response To a Fire In The Safeguards Building," Revision 5, and Procedure ABN-806A, "Response To a Fire In The Electrical and Control Buildings," Revision 5. The inspectors found that the fire protection program, as implemented, relied on the use of local manual actions to align and control equipment required to achieve and maintain hot shutdown resulting from potential fire damage instead of assuring that one train was free from fire damage. This approach expanded the use of local operator manual actions outside of the control room beyond the response to spurious operations allowed in the approved fire protection program.

The inspectors concluded that the licensee's fire protection program, as implemented, provided less physical separation and protection from the affects of fire than the approved program required, and was inherently less reliable than ensuring that one train of the required systems remained free from fire damage.

An example of this concern was the licensee's treatment of air-operated valves in the charging and auxiliary feedwater systems, which were required to perform the reactor coolant inventory control and decay heat removal functions, respectively. The licensee did not designate the instrument air system as a required support system and ensure it would remain free of fire damage, so air may not be available to operate these air-operated valves. Consistent with this approach, the licensee did not protect the circuits required to operate these air-operated valves from fire damage. These air-operated valves are normally controlled from the control room to reach and maintain hot shutdown. For postfire safe shutdown, the licensee did not assure the ability to control these valves from the control room by protecting valve control circuits or the air supply. Instead, the licensee relies on local manual actions outside of the control room to de-energize the air-operated valves to their failed positions, and in the case of the turbine-driven auxiliary feedwater pump, to then control the turbine manually. The licensee also assigns an equipment operator to control flow to the steam generators by throttling other manual valves as directed by the control room operators via radio to compensate for the loss of control of the air-operated valves.

The licensee disagreed with the inspectors' interpretation of the fire protection program requirements and believed the current program complies with their license condition. The licensee submitted the basis for their position in Luminant letter CP-200800962, TXX-08105, dated July 24, 2008. This issue was

discussed with the license and the Office of Nuclear Reactor Regulation, and the staff has concluded that the NRC did not approve manual actions in lieu of protection for equipment required for safe shutdown (refer to Attachment 2 of this report).

Comanche Peak Unit 1 License Condition 2.G states:

“Luminant Generation Company LLC shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report through Amendment 78 and as approved in the SER (NUREG-0797) and its supplements through SSER 24.”

In Supplemental Safety Evaluation Report 12, the NRC staff documented the review of the “Fire Protection of the Safe Shutdown Capability” against the guidelines of Standard Review Plan Section 9.5.1, Position C.5.b. The NRC staff concluded:

“The applicant's analysis indicates that at least one of the redundant trains needed for safe shutdown would be free of fire damage by providing separation, fire barriers, and/or alternative shutdown capability;”

and

“Associated circuits whose fire-induced spurious operation could affect shutdown were identified to determine those components whose maloperation could affect safe shutdown. These spurious operations are terminated by operator actions. The applicant identified these operator actions and allowed the operator sufficient time to perform these actions. On the basis of its evaluation, the staff concludes that these operator actions will terminate spurious operations that could affect plant shutdown.” (Emphasis added)

The manual actions discussed related to spurious actuations resulting from damage to associated circuits. The NRC staff did not discuss or approve any deviations from the requirements for physical separation or protection specified in the standard review plan to allow the use of local operator manual actions to operate components necessary to achieve or maintain hot shutdown. The licensee has entered this issue into their corrective action program as Smart Form SMF-2009-004454-00.

**Analysis.** Failure to ensure that one train of the systems required for hot shutdown was free from fire damage was a performance deficiency. The inspectors determined that this finding was more than minor because it is associated with the protection against external factors attribute of the Mitigating Systems cornerstone, and affected the cornerstone objective to ensure the availability, reliability, and capability of systems that respond to external events (such as fire) to prevent undesirable consequences.

The inspectors initiated an evaluation of this finding using the significance determination process in Manual Chapter 0609, Appendix F, “Fire Protection Significance Determination Process,” because it affected fire protection defense-in-depth strategies involving postfire safe shutdown systems. Additional information was required from the licensee concerning the scope of components identified as requiring manual actions, the fire areas where the manual actions were required and the routing of the cables of interest within those fire areas for Unit 1. Thirty-three components required to achieve and maintain hot shutdown were identified for further evaluation. Plant walkdowns were performed in 12 fire areas to identify fire scenarios that could potentially damage the cables of interest for these 33 valves credited for establishing and maintaining hot shutdown.

Using the methodology in Manual Chapter 0609, Appendix F, the plant walkdown results identified seven fire scenarios in three fire areas with the potential to damage cables for eleven valves required to

establish and maintain hot shutdown. Since the issue involved multiple fire areas, a modified Phase 2 analysis was developed to assess the risk due to the seven fire scenarios. The analysis was reviewed by a senior reactor analyst, who confirmed the issue resulted in a total delta core damage frequency of  $3.7 \times 10^{-7}$  and that the issue had very low safety significance.

**Enforcement.** The Unit 1 License Condition 2.G states, "Luminant Generation Company LLC shall implement and maintain in effect all provisions of the approved fire protection program as described in the Final Safety Analysis Report through Amendment 78 and as approved in the SER (NUREG-0797) and its supplements through SSER 24." In Supplemental Safety Evaluation Report 12, the NRC staff concluded from review of the "Fire Protection of the Safe Shutdown Capability" against the guidelines of Standard Review Plan Section 9.5.1, Position C.5.b, "The applicant's analysis indicates that at least one of the redundant trains needed for safe shutdown would be free of fire damage by providing separation, fire barriers, and/or alternative shutdown capability."

Contrary to the above, the licensee failed to properly implement the approved fire protection program. Specifically, the licensee did not assure that one train of equipment required to achieve and maintain safe hot shutdown conditions remained free from fire damage. The fire protection program, as implemented, relied on the use of local operator manual actions to operate components required to achieve and maintain safe hot shutdown conditions resulting from potential fire damage thus providing less physical separation and protection from the effects of fire than required by the approved fire protection program.

Since the violation was of very low safety significance and was documented in the licensee's corrective action program as Smart Form SMF-2009-004454-00, it is being treated as a noncited violation, consistent with Section VI.A.1 of the NRC Enforcement Policy: NCV 05000445/2009004-05; 00500446/2009004-05, "Failure to Assure that One Train of Equipment is Free From Fire Damage."

## LUMINANT POWER RESPONSE

Reference 2 provided the Comanche Peak licensing basis on the use of manual actions as a means of ensuring that one train of systems necessary to achieve and maintain safe hot shutdown conditions is free of fire damage. This attachment provides additional information concerning manual action license basis.

### Chronology:

A site audit (NRC Inspection Report 84-44 issued January 11, 1985) of the Comanche Peak fire protection program was conducted from **October 24, 1984, through November 2, 1984**. This audit included personnel from NRC Region IV, Office of Nuclear Reactor Regulation, Office of Inspection and Enforcement, and Brookhaven National Laboratory.

The staff issued Supplement 12 to the Safety Evaluation Report (SSER 12) in **October 1985**. This supplement contained details on a review of the applicant's fire protection program through Amendment 55 of the FSAR.

In **mid-1986**, TU Electric (the predecessor to Luminant Power) initiated what became essentially a 100% design and hardware validation effort. Titled "Corrective Action Program" (CAP), this effort involved a complete design and hardware validation program of the safety-related and selected non-safety-related portions of Comanche Peak Unit 1 and common facilities (with the exception of the NSSS and vendor-supplied equipment design). It also included development of detailed design basis documentation.

On **February 10, 1987**, the NRC created the Office of Special Projects for Comanche Peak and TVA.

A site audit (NRC Inspection Report 87-22 issued January 12, 1988) of the Comanche Peak fire protection program was conducted from **October 19 through 23, 1987**. This audit included personnel from the Office of Special Projects/Comanche Peak Project Division (OSP/CPPD) and contractors from Science Applications International and Brookhaven National Laboratory.

TU Electric issued Project Status Report, Mechanical Supplement B – Fire Protection," Revision 0, on **January 25, 1988**.

A site inspection (NRC Inspection Report 88-39/88-33 issued June 24, 1988) was conducted from **October 24, 1988, through November 2, 1988**. It included follow-up on previously identified fire protection system inspection findings. This audit included personnel from OSP/CPPD and Region IV.

On **November 7, 1988**, the NRC issued "Summary of Meeting on September 29, 1988 – Discussion of the Plant Systems Branch's FSAR Review for Comanche Peak." It stated the following:

"The changes to the fire protection program that have occurred since SSER 12 was published are being reviewed by A. Singh (RIV) and various contractors. Inspection Reports 50-445/84-44 and 50-445/87-22 examined establishment and implementation of the fire protection program and compliance with the requirements of BTP APCS 9.5.1, Appendix A and 10 CFR 50, Appendix R. CPPD will coordinate the issuance of the SER with NRR."

The NRC staff issued Supplement 17 to the Safety Evaluation Report (SSER 17) in **November 1988**. This supplement presented the staff's evaluation of the applicant's Corrective Action Program (CAP) related

to the mechanical, civil/structural, electrical, instrumentation and controls, and heating, ventilation, and air conditioning disciplines. Fire Protection is addressed in the mechanical section.

The staff issued Supplement 21 to the Safety Evaluation Report (SSER 21) in **April 1989**. The staff reviewed and evaluated the Comanche Peak fire protection program as described in the applicant's FSAR through Amendment 71 and performed an additional fire protection program audit and subsequent site visit (October 19-23, 1987, and May 2-6, 1988, respectively).

#### **Comanche Peak Fire Safe Shutdown Analysis:**

The Comanche Peak Fire Safe Shutdown Analysis (FSSA) was initiated in the early 1980s with Gibbs and Hill as the major contractor. EPM was later contracted to complete the subject program. In early 1986, Westinghouse was requested to participate in a program status review meeting at which time the operational and analytical basis for the FSSA was reviewed. There was a concern with the documents referenced in regard to the Comanche Peak FSSA. In the past, numerous documents had been transmitted to the NRC related to fire safe shutdown. The Fire Protection Program Review (FPPR) was the initial revision of the FSSA performed by EPM after SSER 12 was issued. In 1986 Westinghouse performed a transient thermal hydraulic analysis to validate the systems and components chosen for the Comanche Peak FSSA. As additional documentation to the FSSA, the Westinghouse analysis provided assurance that the fire safe shutdown model for Comanche Peak was thermo-hydraulically sound. The FSSA development continued up to and then through the CAP program.

FSSA Calculation No.-152, Revision 3 is "EPM-P257-152-003, CPSES, Unit No. 1 Fire Area Separation Analysis for CPSES Unit 1" dated May 4, 1987, was in effect when IR 87-22 occurred. The calculation was revised April 18, 1988, and Revision 4 was reviewed by the NRC and documented in Inspection Report 88-39.

"ME-CA-0000-1086, Revision 0, Fire Safe Shutdown Analysis for Unit 1 and Common," was issued on September 18, 1989, and was in effect when Unit 1 was licensed.

These calculations have always contained manual actions which were required to keep one train free of fire damage. Furthermore, the use of manual actions has always been documented in the Fire Safe Shutdown Design Basis Document and the Fire Protection Report.

CPSES Design Basis Document (DBD), "Fire Safe Shutdown Analysis, DBD-ME-020," Revision 0, was approved on June 19, 1987. Section 5.2 discusses fire safe shutdown analyses methodology. Section 5.2.14.1, "Safe Shutdown Capability by Fire Area," states that in order to achieve a level of fire safe shutdown capability commensurate with the Appendix R criteria, the following design engineering methods, operating methods, and fire protection engineering methods shall be utilized:

- (a) One hour raceway barrier
- (b) Manual operation
- (c) Repair
- (d) Evaluation.

It further states that manual operation should be used in situations where time required to perform this resolution will not preclude safe shutdown.

Revision 0 of the Fire Protection Report (FPR) was issued September 22, 1987. Section III of the FPR is the Fire Safe Shutdown Analysis Report (FSSAR). Section 4.3.1 of Section III discusses fire area compliance mechanisms:

"In order to meet the criteria stated in Section II-4.5 (Fire Protection Features for Fire Safe Shutdown) within an area, the following mechanisms are utilized:

- (1) One or three hour rated barriers: A fire barrier which separates an area or one which encapsulates raceways containing fire safe shutdown components or cables.
- (2) Twenty (20) foot separation areas: A separation distance which is used in place of rated barriers to provide separation between required fire safe shutdown components of redundant systems.
- (3) Manual operation. This resolution is used in situations when the time required to perform this resolution does not preclude fire safe shutdown.
- (4) Repair. This resolution is utilized for cold shutdown or transition to cold shutdown only.

FHA evaluations are provided in situations where compliance with these mechanisms is not readily evident, or deviations are provided and documented in Appendix C."

Revision 27 of the FPR dated December 20, 2007, Section II-3.0 states:

"3.7 Separation criteria for cabling is addressed through the Fire Safe Shutdown Analysis and separation concerns are identified in Section III of this FPR."

Section III-3.1.1 states in part:

"Manual operations are allowed to achieve hot standby following a reactor trip and to maintain hot standby conditions."

FPR, Revision 3 (September 12, 1989) which was in effect at the time of Unit 1 licensing and FPR, Revision 6 (July 31, 19991) which was in effect at the time of Unit 2 licensing have similar wording as in FPR, Revision 27.

In summary, the FSSA calculations issued after 1985 (EPM-P257-152-003 & 004 and ME-CA-0000-1086, Rev. 0) have always contained manual actions which were required to keep on train free of fire damage. Furthermore, the use of these manual actions has always been documented in the FSSA Design Basis Document, DBD-ME-020, and the Fire Protection Report since their issuance in 1987.

#### **NRC Inspection Report 87-22:**

NRC Inspection Report 87-22 documented the review of the fire protection program during October 19-23, 1987. The inspection was led by Amarjit Singh of NRC/OSP/CPD. Section 5.0 of this Inspection Report discussed post fire safe shutdown capability. Calculation No. 152 was reviewed by the NRC and contained Table 2 in Attachment 16 of Volume 3. The following is from page 13 of NRC Inspection Report 87-22:

"Table 2 is a listing of safe shutdown devices and location by fire zone which required certain operator actions including repairs, the location of the action, and the affected fire areas where a fire in those areas may create a requirement for the manual action. Also, the actions were classified according to whether they were required for hot shutdown (hot standby) or cold shutdown.

The NRC inspection team noted that Table 2 is a key document in the applicant's justification for compliance with separation requirements for those areas not requiring alternative

shutdown. The basis of the applicant's analysis and protection methodology for these areas is a combination of protecting certain components in a given fire area, in many instances of either redundant train, plus reliance on the local operator actions described in Table 2."

The NRC reviewed the following procedures which had been prepared by Comanche Peak to address manual actions:

- ABN-803A, Response to a Fire in the Control Room or Cable Spreading Room
- ABN-804A, Response to Fire in the Safeguards Building
- ABN-805A, Response to Fire in the Auxiliary Building or the Fuel Building
- ABN-806A, Response to Fire in the Electrical and Control Building
- ABN-807A, Response to Fire in the Safeguards Building
- ABN-808A, Response to Fire in the Service Water Intake Structure Building
- ABN-809A, Response to Fire in the Turbine Building

The following is from page 13 of NRC Inspection Report 87-22:

"In view of the manual actions required to ensure compliance with separation requirements, the team considers the above procedures to be an integral part of the applicant's fire hazards analysis and fire safe shutdown analysis reports. The team considered it of considerable importance that the feasibility of the manual actions be properly analyzed with respect to the postulated fires and the protected components within each area. As a minimum, the manual actions should be sorted so that those which need to be performed in the same fire area or zone in response to a postulated fire in that area or zone are identified and the time after reactor trip when the action must be performed compared to the area accessibility and component operability after the postulated fire.

During the inspection, the NRC team stated that the information in Table 2 concerning manual actions was not adequately sorted to identify actions which must be taken in the same fire area as the postulated fire. "

This clearly shows that manual actions taken outside the same fire area as the postulated fire were reviewed and deemed acceptable to the NRC. The only open issue in the area of post fire safe shutdown capability was the adequacy of manual actions which must be taken in the same area as the postulated fire. This issue was documented as NRC Inspection Unresolved Item No. 8722-U-02 pending revision of Calculation No. 152. This issue was resolved and closed in NRC Inspection Report 88-39. That inspection report contains the following statement on page 14:

"Unresolved Item (445/8722-U-02): Manual Actions. The original issue dealt with the adequacy of those manual actions which must be taken in the same area as the postulated fire. By letter dated May 3, 1988, TU Electric provided revised Calculation 152 which contained a revised listing of all the manual actions required in the same fire area as the postulated fire. The NRC inspector reviewed the listing and the justifications of the identified manual actions and found them to be acceptable. Therefore, Unresolved Item 445/8722-U-02 is considered close."

In summary, in 1988 the NRC inspected Comanche Peak's use of manual actions and found them to be acceptable. These inspections were referenced in SSER 21.

Based upon the above, it is evident that the NRC inspectors were aware that some Comanche Peak manual actions were to align required FSSA systems that were credited in the FSSA to ensure that one

train of the equipment required to achieve and maintain safe hot shutdown conditions remained free of fire damage. This is further supported by the attached enclosure.

**SSER 17:**

The staff issued Supplement 17 to the Comanche Peak Safety Evaluation Report (SSER 17) in November 1988. This supplement presented the staff's evaluation of the applicant's Corrective Action Program (CAP) related to the mechanical, civil/structural, electrical, instrumentation and controls, and heating, ventilation, and air conditioning disciplines. Fire Protection is addressed the mechanical section. Section 4.6 discusses Fire Protection.

The section on Fire Safe Shutdown Analysis (FSSA) states that the design validation of the FSSA was based on the criteria in DBD-ME-020 and included engineering walkdowns to identify the location of systems, structures, and components required to achieve and maintain safe shutdown of the reactor in the event of a postulated fire coincident with a loss of offsite power and their relation to fire protection features.

As previously stated, DBD-ME-020 allows the use of manual operations to achieve a level of fire safe shutdown capability commensurate with the 10 CFR Appendix R criteria. It further states that manual operations should be used in situations where time required to perform this resolution will not preclude safe shutdown.

The following conclusion was reached in SSER 17:

"On the basis of its inspections and audits, the staff finds, subject to completion of actions committed to by TU Electric as a result of the inspections, that the CPSES fire protection program provides a level of fire safety in conformance with or equivalent to the staff guidance in Appendix A to Branch Technical Position APCS 9.5-1 (NUREG 0800) and Appendix R to 10 CFR Part 50. The staff further finds the CAP methodology described in Reference 96a (TU Electric, Project Status Report, "Mechanical Supplement B – Fire Protection," Revision 0, January 25, 1988.) consistent with staff inspection findings. The staff's evaluation of the applicant's fire protection plan will be provided in a future supplement."

**SSER 21:**

The NRC issued Supplement 21 to the Comanche Peak Safety Evaluation Report (SSER 21) in April 1989. The staff reviewed and evaluated the Comanche Peak fire protection program as described in the applicant's FSAR through Amendment 71 and performed an additional fire protection program audit and subsequent site visit (October 19-23, 1987, and May 2-6, 1988, respectively).

TXX-88430 letter to the NRC dated April 29, 1988, identified areas relating to fire protection of the SER and SSER 12 which may require updating. Page 25 of the Attachment to TXX-88430 discussed SSER 12 Section 9.5.1.4, paragraph 5, page 9-20 which stated:

"The applicant's safe shutdown analysis dated May 7, 1982, states that systems needed for hot shutdown and cold shutdown consist of redundant trains and that one of the redundant trains needed for safe shutdown would be free of fire damage by providing separation, fire barriers, and/or alternative shutdown capability."

Comanche Peak stated that "the Fire Safe Shutdown Analysis is as given in the Fire Protection Report Revision 1, Section III."

As previously stated, the Fire Safe Shutdown Analysis underwent major revisions after the 1984 NRC inspection and issuance of SSER 12. These revisions began after the issuance of SSER 12 and lasted through the design validation phase of the CAP program. Furthermore, the use of manual actions has always been documented in the Fire Safe Shutdown Design Basis Document, Revision 0 (June 19, 1987), and the Fire Protection Report, Revision 0 (September 27, 1987).

The SSER writeup acknowledges that the fire hazards analysis was revised and included in the Fire Protection Report dated September 22, 1987. Revisions to the Fire Protection Report submitted to the NRC on April 28, 1988, reflected changes to the plant design described in the FSSA Report.

On November 7, 1988, the NRC issued "Summary of Meeting on September 29, 1988 – Discussion of the Plant Systems Branch's FSAR Review for Comanche Peak." It stated the following: "The changes to the fire protection program that have occurred since SSER 12 was published are being reviewed by A. Singh (RIV) and various contractors. Inspection Reports 50-445/84-44 and 5-445/87-22 examined establishment and implementation of the fire protection program and compliance with the requirements of BTP APCS 9.5.1 Appendix A and 10 CFR 50, Appendix R. CPPD will coordinate the issuance of the SER with NRR."

The NRC failed to update the SSER record in SSER 21 with the fire protection program changes that had occurred since the issuance of SSER 12 in 1985.

### **Conclusion:**

Since before the license issuance of Comanche Peak Unit 1 in 1990, the licensing basis for Comanche Peak allowed credit for manual actions to ensure that one train of the equipment required to achieve and maintain safe hot shutdown remained free from fire damage. Luminant Power believes that the use of manual actions was reviewed and understood by NRC inspectors, and those responsible for updating the SSER, during the review of changes to the Comanche Peak fire protection program since SSER 12 was issued.

Contrary to the NCV, NRC's acceptance of local manual actions was not limited to actions to mitigate the effects of potential fire damage. Instead, the design documents at the time, the FPR and the FSSA, and the NRC inspections at the time all consistently indicate that manual actions could be used to provide the physical separation or protection required in the approved fire protection program. The position in the NCV is different from what was approved at the time Comanche Peak Unit 1 was licensed. If the NRC maintains this position this may constitute a backfit under 10 CFR 50.109(a)(1).

**ENCLOSURE TO TXX-09136**

**AFFIDAVIT OF HAROLD R. BECK DATED NOVEMBER 19, 2009**

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
LUMINANT GENERATION COMPANY LLC	)	Docket Nos. 50-445
	)	and 50-446
(Comanche Peak Nuclear Power Plant, Units 1 and 2)	)	

AFFIDAVIT

I, Harold R. Beck, being duly sworn, hereby depose and state that I am currently an Engineering Consultant for AREVA NP, Inc., and do hereby affirm and state:

1. I have worked at Comanche Peak Nuclear Power Plant (CPNPP) during construction, licensing, and initial startup of the units, and intermittently during operation since that time up to the present. My first work for CPNPP was with Gibbs & Hill, Inc. in New York, NY starting in late 1981. I began working at the CPNPP site in mid 1983. I worked at CPNPP full time from mid 1983 until I left site at the end of 1989.

I first became involved with the Fire Safe Shutdown Analysis (FSSA) at CPNPP in 1986. I was a Senior Engineer employed by Gibbs & Hill, Inc. working in the Mechanical Engineering Group. I was part of a team of individuals that was working with the then Westinghouse Electric Corporation (Westinghouse). At that time, Westinghouse was developing a transient thermal hydraulic model to model the plant response to verify that the systems and components modeled in the FSSA were adequate to achieve safe shutdown conditions.

In 1987, I was a Senior Engineer employed by Impell Corporation working at CPNPP as an assistant to the utility Fire Protection Engineer. My main areas of responsibility were related to the resolution of outstanding technical issues with the FSSA as CPNPP was preparing for the Fire Protection Program audit with the NRC scheduled for the fall of 1987. The FSSA was being performed at this time by the firm of Engineering, Planning and Management (EPM).

I participated in the fall 1987 NRC audit as part of the multi-discipline team that supported the audit. I also participated in the follow-on inspection by the NRC in 1988. After the follow-on inspection in 1988, the organization responsible for the FSSA, Engineering, Planning, and Management, completed their activities and Impell took over responsibility for the FSSA. When Impell took over responsibility for the FSSA, I was reassigned from assisting the utility Fire Protection Engineer, to become the FSSA supervisor in the Impell Fire Protection Group. I remained in this position until leaving CPNPP at the end of 1989 as Unit 1 approached initial criticality.

I have been involved with the CPNPP FSSA at different times subsequent to the

completion of the Unit 1 licensing activities. I participated in revision of the FSSA in 1992. I have supported the last 3 NRC Triennial Fire Protection Inspections (2008, 2005, and 2002). The last revision to the CPNPP FSSA was performed in 2007, and I participated in that activity.

2. Based upon my roles and responsibilities described in Paragraph 1, my personal knowledge and understanding at that time is described below:

- a. The initial development of the FSSA in the early 1980s was done by Gibbs & Hill, Inc. This was the basis for the early inspections performed by the NRC and subsequently became the basis for SSER 12. At this point in the plant construction, the Comanche Peak site engineering organization was responsible for the overall implementation of the Fire Protection Program and coordinated the activities of supporting organizations and personnel. The site engineering organization was responsible for reviewing the Gibbs and Hill analysis and determining the protection requirements necessary to ensure that adequate protection was required.

In the mid 1980s (approximately 1985-1986 time frame), EPM was contracted to revise and enhance the analysis and address unresolved technical issues. In 1986, as a part of the update and enhancement efforts, Westinghouse was contracted to perform a transient thermal hydraulic analysis to validate the systems and components chosen to be modeled in the FSSA, and validate that this population of equipment could achieve FSSA goals. Somewhere at the end of this time period, responsibility for CPNPP was moved from RIV of the NRC to NRR at NRC headquarters and finally to Office of Special Projects at NRC headquarters.

In late 1986, CPNPP began the Corrective Action Program (CAP). As part of implementing the CAP, CPNPP hired engineering firms to validate the various safety related aspects of the CPNPP design (and numerous other related activities). At this time, Impell Corporation was hired to handle the Fire Protection Program and EPM was responsible for the continued development of the FSSA and the validation of its bases. These activities validated technical issues that represented the entire breadth of Fire Protection Program, from determination of the various design bases, to analysis and documentation of specific design aspects and determining what specific requirements were not adequately met, and specifying and implementing the corrective actions in support of eventual unit licensing.

The activities that were ongoing after the issuance of SSER 12 had a significant impact on the overall FSSA. The transient thermal

hydraulic analysis performed by Westinghouse confirmed the , systems and component requirements were different that what was originally modeled by Gibbs & Hill. The analysis included time constraints for validation that were based on operations assessments of when individual actions could be achieved. During this period, the Program and topical Design Basis Documents were initially drafted as was the initial draft of the CPNPP Fire Protection Report.

A significant amount of time during the 1987 inspection by the NRC was spent identifying the scope and content of all of the design validation activities undertaken by Impell and EPM, and presenting the changes to the Fire Protection Program that were driven by corrective action program activities.

Numerous aspects of the Fire Protection Program were inspected by members of the NRC inspection team. The team walked through the post fire shutdown procedures, starting with the Control Room fire scenario and progressing to the various other fires postulated to occur in the plant.

The NRC inspectors expressed significant interest in the manual actions to be taken by CPNPP personal in an event credited in the FSSA, and looked at all of the related issues such as lighting, communication, access/egress for these actions. The NRC inspectors appeared to be especially concerned with manual actions that needed to be performed in the same area of the fire and wanted to confirm that those actions were feasible and could be taken in a manner that they were accomplished within their required time frame. During the inspection some short comings were identified by the NRC related to the specification of actions required by the analysis and the incorporation of those actions in the post fire shutdown procedures.

I took part in discussions with NRC inspection personnel during the walkdown of manual actions related to the purpose of specific actions. We discussed the purpose of the specific manual actions in the context of it was to mitigate spurious actuation or it was required to align a required system to perform the necessary function. Based on the discussions related to the purposes of the various actions reviewed, it was my understanding that the NRC inspectors were aware that some of our actions were to align required FSSA systems that were credited for FSSA.

- b. I have no knowledge related to others at the NRC. My understanding was based on my interaction with the inspection staffs for the 1987 and 1988 follow up inspection.

The foregoing is true to the best of my knowledge, information, and belief.

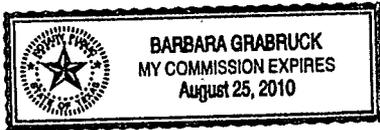
Harold R Beck

Harold R. Beck

STATE OF Texas

COUNTY OF Tarrant

Subscribed and sworn to me, a Notary Public, in and for the State of Texas, this 19  
day of November, 2009.



Barbara Grabruck

Notary Public's Signature