



**Luminant**

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CP-200700132  
Log # TXX-07168

Ref. # 10CFR50.90  
10CFR50.46

November 19, 2007

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  
SUPPLEMENT TO LICENSE AMENDMENT REQUEST (LAR) 07-003  
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION RELATED TO REVIEW  
ASSOCIATED WITH LARGE AND SMALL BREAK LOCA ANALYSES  
(TAC Nos. MD6212 and MD6213)

- REFERENCE:**
1. Letter logged TXX-07063 dated April 10, 2007 submitting License Amendment Request (LAR) 07-003 revision to Technical Specification 3.1, "REACTIVITY CONTROL SYSTEMS," 3.2, "POWER DISTRIBUTION LIMITS," 3.3, "INSTRUMENTATION," and 5.6.5b, "CORE OPERATING LIMITS REPORT (COLR)," from Mike Blevins to the NRC.
  2. Letter logged TXX-07107 dated July 31, 2007 submitting the Comanche Peak Units 1 and 2 Large and Small Break LOCA Analyses from Mike Blevins to the NRC.
  3. Letter logged TXX-07151 dated November 15, 2007 submitting additional information regarding the Comanche Peak Units 1 and 2 Large and Small Break LOCA Analyses from Mike Blevins to the NRC.

Dear Sir or Madam:

Per Reference 1, Luminant Generation Company, LLC (Luminant Power) submitted proposed changes to the Comanche Peak Steam Electric Station, herein referred to as Comanche Peak Nuclear Power Plant (CPNPP), Unit 1 and Unit 2 Technical Specifications to allow the use of several Nuclear Regulatory Commission (NRC) approved accident analysis methodologies to be used to establish core operating limits. Included in that submittal were different methods for analyzing the small break loss of coolant accident (LOCA) and the large break LOCA. As prescribed in the NRC's Safety Evaluations approving the generic use of these methods, and in compliance with 10CFR50.46, Luminant Power transmitted, per Reference 2, the evaluation models and results developed in accordance with those methodologies for NRC review.

On November 2, 2007, the NRC provided Luminant Power with a request for additional information regarding the large and small break loss-of-coolant accidents for Comanche Peak. The response to these questions was provided in Reference 3 except for the response to question 26, which contained information proprietary to Westinghouse Electric Company LLC. The response to question 26 is provided in Attachment 1 to this letter.

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

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

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NRB

Attachment 1 contains information proprietary to Westinghouse Electric Company LLC, and is supported by an affidavit signed by Westinghouse, the owner of the information. Attachment 2 is the non-proprietary response to question 26. The affidavit set forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b) (4) of Section 2.390 of the Commissions' regulations. Accordingly, it is respectfully requested that the information which is proprietary to Westinghouse be withheld from public disclosure in accordance with 10 CFR Section 2.390 of the Commission's regulations.

Correspondence with respect to the copyright or proprietary aspects of Attachment 1 or the supporting Westinghouse affidavit should reference CAW-07-2359 and should be addressed to J. A. Gresham, Manager, Regulatory Compliance and Plant Licensing, Westinghouse Electric Company LLC, P.O. Box 355, Pittsburgh, Pennsylvania 15230-0355.

In accordance with 10CFR50.91(b), Luminant Power is providing the State of Texas with a copy of this proposed amendment.

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

Should you have any questions, please contact Mr. J. D. Seawright at (254) 897-0140.

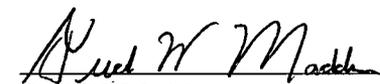
I state under penalty of perjury that the foregoing is true and correct.

Executed on November 19, 2007.

Sincerely,

Luminant Generation Company LLC

Mike Blevins

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

- Attachment -
1. Response to NRC Request for Additional Information on Post LOCA Long Term Cooling for CPNPP (Proprietary)
  2. Response to NRC Request for Additional Information on Post LOCA Long Term Cooling for CPNPP (Non-Proprietary)

Enclosure - Westinghouse authorization letter CAW-07-2359 with accompanying affidavit, Proprietary Information Notice and Copyright Notice.

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

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

**Attachment 2 to TXX-07168**

**Response to NRC Request for Additional Information  
on Post-LOCA Long Term Cooling for CPNPP**

**(Non-Proprietary)**

**Westinghouse Non-Proprietary Class 3**

**WPT-17073  
ATTACHMENT 2**

**Response to NRC Request for Additional Information  
on Post LOCA Long-Term Cooling for CPNPP**

**(NRC Question #26)**

**POST-LOCA LONG-TERM COOLING CALCULATIONS**

26. **Placing the break on the top of the discharge leg will delay the growth of the mixing volume through the core and upper plenum and increase the concentrations early in the event. Please discuss the effect of breaks located on the top of the discharge leg in determining precipitation timing. Please discuss the growth of the mixing volume vs. time for this scenario (i.e. the two-phase mixture volume in half of the lower plenum and core). At what time in the event does the mixture volume grow sufficiently to reach the upper plenum region?**

**Response:**

The primary impact of placing the break on the top of the discharge leg is the potential to refill the loop seal piping thereby increasing the loop pressure drop resulting in a depression of the two-phase mixture level in the inner vessel region. Loop seal refilling for the large break LOCA is unlikely because of the high loop vapor flow rates and the large steam vent area provided by the break. One of the possible mechanisms for loop seal refilling is the backflow of ECCS water injected into the cold legs. In order for this backflow to occur it is necessary to already have injected enough ECCS water to have refilled the reactor vessel, including the core. A vessel refilled to this extent would have a mitigating effect on the inner vessel region boric acid concentration transient. Further, the loop steam flow would need to be low enough that counter current flow limit does not occur. The higher core power associated with the uprate is beneficial in this regard, in that, the vapor flow through the loops will be higher due to higher decay heat. The consequences of post-LOCA loop seal refilling were evaluated as reported in Reference 1. The expected system response would be a cyclic plugging and clearing but not a sustained core uncover that could adversely impact core cooling.

Another possible mechanism for loop seal refilling is condensation in the steam generators during a small break LOCA event. In the unlikely event of a sustained core uncover, the operators would follow prescribed emergency operating procedures to take actions that would disrupt the conditions necessary to sustain the inner vessel region mixture level depression. While variations in break size and orientation [

] a.c

**Westinghouse Non-Proprietary Class 3**

**WPT-17073  
ATTACHMENT 2**

One beneficial aspect of this scenario is that cyclic loop seal plugging and clearing would [

] <sup>a,c</sup>

The core region boric acid concentration versus time for the scenario described (regardless of break size or orientation) is conservatively represented by the boric acid concentration calculated for the quasi-stagnant case that accounts for voiding in the core and upper plenum regions that credits mixing in only 50% of the lower plenum.

References:

1. Letter from Westinghouse to NRC, NSD-NRC-97-5092, "Core Uncovery Due to Loop Seal Re-Plugging During Post-LOCA Recovery," March 1997.
2. J. Tuunanen, et al., Experimental and analytical studies of boric acid concentrations in a VVER-440 reactor during the long-term cooling period of loss-of-coolant accidents, Nuclear Engineering and Design, Vol. 148, 1994, pp. 217-231.

Enclosure to TXX-07168  
Westinghouse authorization letter CAW-07-2359  
with accompanying affidavit,  
Proprietary Information Notice  
and Copyright Notice



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Nuclear Services  
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USA

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555-0001

Direct tel: (412) 374-4643  
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Our ref: CAW-07-2359

November 16, 2007

APPLICATION FOR WITHHOLDING PROPRIETARY  
INFORMATION FROM PUBLIC DISCLOSURE

Subject: WPT-17073, Attachment 1, "Response to NRC Request for Additional Information on Post LOCA Long-Term Cooling for CPNPP (NRC Question #26)" (Proprietary)

The proprietary information for which withholding is being requested in the above-referenced letter is further identified in Affidavit CAW-07-2359 signed by the owner of the proprietary information, Westinghouse Electric Company LLC. The affidavit, which accompanies this letter, sets forth the basis on which the information may be withheld from public disclosure by the Commission and addresses with specificity the considerations listed in paragraph (b)(4) of 10 CFR Section 2.390 of the Commission's regulations.

Accordingly, this letter authorizes the utilization of the accompanying affidavit by Luminant Generation Company LLC.

Correspondence with respect to the proprietary aspects of the application for withholding or the Westinghouse affidavit should reference this letter, CAW-07-2359, and should be addressed to J. A. Gresham, Manager, Regulatory Compliance and Plant Licensing, Westinghouse Electric Company LLC, P.O. Box 355, Pittsburgh, Pennsylvania 15230-0355.

Very truly yours,

A handwritten signature in black ink, appearing to read "J. A. Gresham".

J. A. Gresham, Manager  
Regulatory Compliance and Plant Licensing

Enclosures

cc: J. Thompson, NRC

bcc: J. A. Gresham (ECE 4-7A) 1L  
R. Bastien, 1L (Nivelles, Belgium)  
C. Brinkman, 1L (Westinghouse Electric Co., 12300 Twinbrook Parkway, Suite 330, Rockville, MD 20852)  
RCPL Administrative Aide (ECE 4-7A) 1L, 1A (letter and affidavit only)  
R. Morrison (ECE 4-7A) 1L, 1A

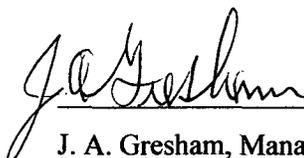
AFFIDAVIT

COMMONWEALTH OF PENNSYLVANIA:

ss

COUNTY OF ALLEGHENY:

Before me, the undersigned authority, personally appeared J. A. Gresham, who, being by me duly sworn according to law, deposes and says that he is authorized to execute this Affidavit on behalf of Westinghouse Electric Company LLC (Westinghouse), and that the averments of fact set forth in this Affidavit are true and correct to the best of his knowledge, information, and belief:



J. A. Gresham, Manager

Regulatory Compliance & Plant Licensing

Sworn to and subscribed before me  
this 16<sup>th</sup> day of November, 2007



Notary Public

COMMONWEALTH OF PENNSYLVANIA

Notarial Seal  
Sharon L. Markle, Notary Public  
Monroeville Boro, Allegheny County  
My Commission Expires Jan. 29, 2011

Member, Pennsylvania Association of Notaries

- (1) I am Manager, Regulatory Compliance & Plant Licensing, in Nuclear Services, Westinghouse Electric Company LLC (Westinghouse), and as such, I have been specifically delegated the function of reviewing the proprietary information sought to be withheld from public disclosure in connection with nuclear power plant licensing and rule making proceedings, and am authorized to apply for its withholding on behalf of Westinghouse.
- (2) I am making this Affidavit in conformance with the provisions of 10 CFR Section 2.390 of the Commission's regulations and in conjunction with the Westinghouse "Application for Withholding" accompanying this Affidavit.
- (3) I have personal knowledge of the criteria and procedures utilized by Westinghouse in designating information as a trade secret, privileged or as confidential commercial or financial information.
- (4) Pursuant to the provisions of paragraph (b)(4) of Section 2.390 of the Commission's regulations, the following is furnished for consideration by the Commission in determining whether the information sought to be withheld from public disclosure should be withheld.
  - (i) The information sought to be withheld from public disclosure is owned and has been held in confidence by Westinghouse.
  - (ii) The information is of a type customarily held in confidence by Westinghouse and not customarily disclosed to the public. Westinghouse has a rational basis for determining the types of information customarily held in confidence by it and, in that connection, utilizes a system to determine when and whether to hold certain types of information in confidence. The application of that system and the substance of that system constitutes Westinghouse policy and provides the rational basis required.

Under that system, information is held in confidence if it falls in one or more of several types, the release of which might result in the loss of an existing or potential competitive advantage, as follows:

- (a) The information reveals the distinguishing aspects of a process (or component, structure, tool, method, etc.) where prevention of its use by any of

Westinghouse's competitors without license from Westinghouse constitutes a competitive economic advantage over other companies.

- (b) It consists of supporting data, including test data, relative to a process (or component, structure, tool, method, etc.), the application of which data secures a competitive economic advantage, e.g., by optimization or improved marketability.
- (c) Its use by a competitor would reduce his expenditure of resources or improve his competitive position in the design, manufacture, shipment, installation, assurance of quality, or licensing a similar product.
- (d) It reveals cost or price information, production capacities, budget levels, or commercial strategies of Westinghouse, its customers or suppliers.
- (e) It reveals aspects of past, present, or future Westinghouse or customer funded development plans and programs of potential commercial value to Westinghouse.
- (f) It contains patentable ideas, for which patent protection may be desirable.

There are sound policy reasons behind the Westinghouse system which include the following:

- (a) The use of such information by Westinghouse gives Westinghouse a competitive advantage over its competitors. It is, therefore, withheld from disclosure to protect the Westinghouse competitive position.
- (b) It is information that is marketable in many ways. The extent to which such information is available to competitors diminishes the Westinghouse ability to sell products and services involving the use of the information.
- (c) Use by our competitor would put Westinghouse at a competitive disadvantage by reducing his expenditure of resources at our expense.

- (d) Each component of proprietary information pertinent to a particular competitive advantage is potentially as valuable as the total competitive advantage. If competitors acquire components of proprietary information, any one component may be the key to the entire puzzle, thereby depriving Westinghouse of a competitive advantage.
  - (e) Unrestricted disclosure would jeopardize the position of prominence of Westinghouse in the world market, and thereby give a market advantage to the competition of those countries.
  - (f) The Westinghouse capacity to invest corporate assets in research and development depends upon the success in obtaining and maintaining a competitive advantage.
- (iii) The information is being transmitted to the Commission in confidence and, under the provisions of 10 CFR Section 2.390, it is to be received in confidence by the Commission.
- (iv) The information sought to be protected is not available in public sources or available information has not been previously employed in the same original manner or method to the best of our knowledge and belief.
- (v) The proprietary information sought to be withheld in this submittal is that which is appropriately marked in WPT-17073, Attachment 1, "Response to NRC Request for Additional Information on Post LOCA Long-Term Cooling for CPNPP (NRC Question #26)" (Proprietary), for Comanche Peak Nuclear Power Plant Units 1 and 2, being transmitted by Luminant Generation Company LLC letter and Application for Withholding Proprietary Information from Public Disclosure, to the Document Control Desk. The proprietary information as submitted for use by Westinghouse for Comanche Peak Nuclear Power Plant Units 1 and 2 is expected to be applicable for other licensee submittals in response to certain NRC requirements for justification of stretch power uprating.

This information is part of that which will enable Westinghouse to:

- (a) Provide information in support of plant power uprate licensing submittals.
- (b) Provide customer specific response to NRC requests for information.
- (c) Provide licensing support for customer submittals.

Further this information has substantial commercial value as follows:

- (a) Westinghouse plans to sell the use of similar information to its customers for purposes of meeting NRC requirements for licensing documentation associated with power uprate licensing submittals.
- (b) Westinghouse can sell support and defense of the technology to its customer in the licensing process.
- (c) The information requested to be withheld reveals the distinguishing aspects of a methodology which was developed by Westinghouse.

Public disclosure of this proprietary information is likely to cause substantial harm to the competitive position of Westinghouse because it would enhance the ability of competitors to provide similar information and licensing defense services for commercial power reactors without commensurate expenses. Also, public disclosure of the information would enable others to use the information to meet NRC requirements for licensing documentation without purchasing the right to use the information.

The development of the technology described in part by the information is the result of applying the results of many years of experience in an intensive Westinghouse effort and the expenditure of a considerable sum of money.

In order for competitors of Westinghouse to duplicate this information, similar technical programs would have to be performed and a significant manpower effort, having the requisite talent and experience, would have to be expended.

Further the deponent sayeth not.

## **PROPRIETARY INFORMATION NOTICE**

Transmitted herewith are proprietary and/or non-proprietary versions of documents furnished to the NRC in connection with requests for generic and/or plant-specific review and approval.

In order to conform to the requirements of 10 CFR 2.390 of the Commission's regulations concerning the protection of proprietary information so submitted to the NRC, the information which is proprietary in the proprietary versions is contained within brackets, and where the proprietary information has been deleted in the non-proprietary versions, only the brackets remain (the information that was contained within the brackets in the proprietary versions having been deleted). The justification for claiming the information so designated as proprietary is indicated in both versions by means of lower case letters (a) through (f) located as a superscript immediately following the brackets enclosing each item of information being identified as proprietary or in the margin opposite such information. These lower case letters refer to the types of information Westinghouse customarily holds in confidence identified in Sections (4)(ii)(a) through (4)(ii)(f) of the affidavit accompanying this transmittal pursuant to 10 CFR 2.390(b)(1).

## **COPYRIGHT NOTICE**

The reports transmitted herewith each bear a Westinghouse copyright notice. The NRC is permitted to make the number of copies of the information contained in these reports which are necessary for its internal use in connection with generic and plant-specific reviews and approvals as well as the issuance, denial, amendment, transfer, renewal, modification, suspension, revocation, or violation of a license, permit, order, or regulation subject to the requirements of 10 CFR 2.390 regarding restrictions on public disclosure to the extent such information has been identified as proprietary by Westinghouse, copyright protection notwithstanding. With respect to the non-proprietary versions of these reports, the NRC is permitted to make the number of copies beyond those necessary for its internal use which are necessary in order to have one copy available for public viewing in the appropriate docket files in the public document room in Washington, DC and in local public document rooms as may be required by NRC regulations if the number of copies submitted is insufficient for this purpose. Copies made by the NRC must include the copyright notice in all instances and the proprietary notice if the original was identified as proprietary.