



UNITED STATES  
**NUCLEAR REGULATORY COMMISSION**  
REGION IV  
1600 EAST LAMAR BLVD  
ARLINGTON, TEXAS 76011-4511

August 23, 2012

Rafael Flores, Senior Vice President  
and Chief Nuclear Officer  
Attention: Regulatory Affairs  
Luminant Generation Company LLC  
Comanche Peak Nuclear Power Plant  
P.O. Box 1002  
Glen Rose, TX 76043

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT - NRC EXAMINATION  
REPORT 05000445/2012301; 05000446/2012301

Dear Mr. Flores:

On June 19, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed an initial operator license examination at Comanche Peak Nuclear Power Plant, Units 1 and 2. The enclosed report documents the examination results and licensing decisions. The preliminary examination results were discussed on June 14, 2012, with you and other members of your staff. A telephonic meeting was conducted on July 3, 2012, with Mr. G. Struble, Simulator and License Examination Manager, who was provided the NRC licensing decisions. On July 23, 2012, the results of the examination activities were communicated to Mr. S. Smith, Plant Manager, and other members of your staff via telephone.

The examination included the evaluation of ten applicants for reactor operator licenses, three applicants for instant senior reactor operator licenses and five applicants for upgrade senior reactor operator licenses. The license examiners determined that all of the applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses have been issued. There were three post examination comments submitted by your staff. The Enclosure contains details of this report and summarizes post examination comment resolution.

A licensee-identified violation was identified during this examination. It is described in more detail in the examination report.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

**/RA/**

Mark S. Haire, Chief  
Operations Branch  
Division of Reactor Safety

Dockets: 50-445; 50-446  
Licenses: NPF-87; NPF-89

Enclosure  
NRC Examination Report 05000445/2012301; 05000446/2012301  
w/Attachment(s)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION IV

Dockets: 50-445, 50-446

Licenses: NPF-87, NPF-89

Report: 05000445/2012301; 05000446/2012301

Licensee: Luminant Generation Company, LLC

Facility: Comanche Peak Nuclear Power Plant, Units 1 and 2

Location: FM-56,  
Glen Rose, Texas

Dates: June 11-July 23, 2012

Inspectors: S. Hedger, Chief Examiner  
M. Bloodgood, Operations Engineer  
G. Callaway, Reactor Technology Instructor  
B. Larson, Senior Operations Engineer  
D. Strickland, Operations Engineer  
B. Tindell, Resident Inspector

Approved by: Mark Haire, Chief  
Operations Branch  
Division of Reactor Safety

## SUMMARY OF FINDINGS

ER 05000445/2012301; 05000446/2012301; June 11 through July 23, 2012; Comanche Peak Nuclear Power Plant, Units 1 and 2; Initial Operator Licensing Examination Report.

NRC examiners evaluated the competency of ten applicants for reactor operator licenses, three applicants for instant senior reactor operator licenses and five applicants for upgrade senior reactor operator licenses at Comanche Peak Nuclear Power Plant, Units 1 and 2.

The licensee developed the examinations using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1. The written examination was administered by the licensee on June 19, 2012. NRC examiners administered the operating tests on June 11-16, 2012.

The examiners determined that all of the applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses have been issued.

A. NRC-Identified and Self-Revealing Findings

None.

B. Licensee-Identified Violations

A severity level IV violation that was identified by the licensee has been reviewed by the examiners. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. The violation and corrective action tracking number are listed in Section 4OA7 of this report.

## REPORT DETAILS

### 4. OTHER ACTIVITIES (OA)

#### 4OA5 Other Activities (Initial Operator License Examination)

##### .1 License Applications

###### a. Scope

NRC examiners reviewed all license applications submitted to ensure each applicant satisfied relevant license eligibility requirements. The examiners also audited two of the license applications in detail to confirm that they accurately reflected the subject applicant's qualifications. This audit focused on the applicant's experience and on-the-job training, including control manipulations that provided significant reactivity changes.

###### b. Findings

No findings were identified.

##### .2 Examination Development

###### a. Scope

NRC examiners reviewed integrated examination outlines and draft examinations submitted by the licensee against the requirements of NUREG-1021. The NRC examination team conducted an onsite validation of the operating tests.

###### b. Findings

No findings were identified.

The operating test, RO written examination, and SRO written examination submitted by the facility licensee were within the range of acceptability expected for a proposed examination.

NRC examiners provided outline, draft examination and post-validation comments to the licensee. The licensee satisfactorily completed comment resolution prior to examination administration.

##### .3 Operator Knowledge and Performance

###### a. Scope

On June 19, 2012, the licensee proctored the administration of the written examinations to all eighteen applicants. The licensee staff graded the written examinations, analyzed the results, and presented their analysis and post-examination comments to the NRC on June 27, 2012.

The NRC examination team administered the various portions of the operating tests to all eighteen applicants on June 11-16, 2012.

b. Findings

No findings were identified.

All of the applicants passed the written examination and all parts of the operating test. The final written examination, final operating test, and post-examination analysis and comments may be accessed in the ADAMS system under the accession numbers noted in Attachment 1.

The examination team noted a generic weakness with knowledge and ability on one of the plant's time critical operator actions. One of the tasks evaluated in a Job Performance Measure (JPM) was to complete the transfer to cold leg recirculation for the Containment Spray system. Based on analysis in your FSAR document, it is assumed that this action can be completed within 70 seconds. Although all applicants were able to complete the actions needed to establish cold leg recirculation, sixteen of the eighteen applicants that took the examination could not meet the time expectation. This issue has been documented in your corrective action program in Condition Report, CR-2012-006255.

.4 Simulation Facility Performance

a. Scope

The NRC examiners observed simulator performance with regard to plant fidelity during examination validation and administration.

b. Findings

No findings were identified.

A discrepancy was found in the simulator during the validation of JPM examination material. The licensee documented the issue in Condition Report CR-2012-004317, and it is described in Attachment 2 of this report.

.5 Examination Security

a. Scope

The NRC examiners reviewed examination security during both the onsite preparation week and examination administration week for compliance with 10 CFR 55.49 and NUREG-1021. Plans for simulator security and applicant control were reviewed and discussed with licensee personnel.

b. Findings

No findings were identified.

.6 Facility Post Examination Comments

The facility provided the examiners with three post administration comments on the written examination (RO Question 24, 46, and 71). The following are the respective questions, the licensee comments, and the examiners' evaluation of the licensee's comments:

**RO QUESTION # 24**

Given the following conditions:

- Unit 1 Station Service Water (SSW) was in an abnormal lineup with Station Service Water Pump (SSWP) 1-01 running and SSWP 1-02 in STANDBY.
- Component Cooling Water Pump (CCWP) 1-02 is out of service for preventative maintenance.
- Subsequently SSWP 1-01 trips and SSWP 1-02 automatically starts.

Which of the following describes the SSWP AUTO start feature and system alignment using ABN-501, Station Service Water System Malfunction?

SSWP 1-02 AUTO started when...

- A. The header pressure in Train A SSW dropped to 10 psig.  
Cross connect Train A SSW Unit 1 with Train A SSW Unit 2.
- B. The return header flow in Train A SSW dropped to 16,456 GPM.  
Cross connect Train A SSW Unit 1 with Train A SSW Unit 2.
- C. The return header flow in Train A SSW dropped to 16,456 GPM.  
Ensure CCWP 1-01 running with both Train Safeguards Loop Isolation Valves open.
- D. **The header pressure in Train A SSW dropped to 10 psig.  
Ensure CCWP 1-01 running with both Train Safeguards Loop Isolation Valves open.**

**LICENSEE COMMENT**

Applicant feedback is that Answer A can also be considered a correct answer in addition to Answer D as contained in the approved answer key.

Support for Answer A:

The lineup of Answer D does not ensure long term cooling of essential loads is met. The applicants recognized from their training that this was the case and thus looked for an answer which assured long term cooling of loads as opposed to the intended answer of the system alignment in accordance with ABN-501. As such, the applicants realized



that ABN-501 also contained instructions for cross connecting SSW between the units and thus perceived Answer A as the correct answer.

### **NRC RESOLUTION**

Per Procedure ABN-501, "Station Service Water System Malfunction," Revision 9, the action to cross-connect the Unit 1 and 2 SSW systems is not allowed based on the given conditions in the question. The situation involves a SSW pump trip, and the SSW pump that was in standby automatically starts. There is no indication given in the question that there is abnormal pressure or flow for the SSW system after SSW pump 1-02 automatically starts. Therefore, Unit 1 has SSW flow provided.

In Procedure ABN-501, the operations staff would implement Section 2.0, "Station Service Water Pump Trip," based on this situation. This section does not have procedural direction to cross-connect Unit 1 and 2's SSW systems. This cross-connection is allowed if the operations staff was involved in a total loss of SSW service for Unit 1. This is addressed in procedure ABN-501, Section 5.0. However, the conditions given in the question would not necessitate entry into this procedural section. Taking these actions based on the given conditions would result in making an error in procedural usage. Therefore, the request to give credit for Answer A is denied. Answer D is the only correct answer.

### **RO QUESTION #46**

Which of the following describes the basis for the Component Cooling Water (CCW) System valve realignment upon receipt of a Containment Isolation Phase B actuation?

- A. Reduces Diesel Generator loading requirements with Containment Spray in operation.
- B. Reduces heat load on CCW System by eliminating unnecessary cooling requirements.
- C. **Ensures CCW System is not an additional potential radioactive release path from Containment.**
- D. Ensures that CCW System meets design cooling function for loads within Containment during Design Basis Loss of Coolant Accident.

### **LICENSEE COMMENT**

Applicant feedback is that Answer D can also be considered a correct answer in addition to Answer C as contained in the approved answer key.

Support for Answer D:

- The question was intended to verify the applicant's knowledge of the purpose behind isolating portions of CCW system during a Design Basis Large Break LOCA which would result in a Phase B Containment Isolation at 18.2 psig. However, some of the applicants construed Answer D to be referring to the spectrum of Design Basis Loss of Coolant Accidents. As such, in accordance with Technical Specification Bases 3.3.2 ESFAS Instrumentation for Phase A

Containment Isolation, "For these types of events, forced circulation cooling using the reactor coolant pumps (RCPs) and SGs is the preferred ... method of decay heat removal."

- Conversely the same Technical Specification Bases for Phase B Containment Isolation states, "For these events, forced circulation using the RCPs is no longer desirable."
- The Technical Specification Bases further discusses the reasoning for the Containment Isolations which support the approved answer key. However, with respect to interpreting Answer D as the "design cooling function" of the RCPs and thus CCW being isolated by Phase B as the RCPs are no longer needed, a reasonable logic path appears to exist resulting in concluding that Answer D is the correct answer.

### **NRC RESOLUTION**

The question addresses the basis for a valve alignment change in the Containment Isolation System (CIS). Per the cited Technical Specification Bases document, Section B 3.3.2, "Containment Isolation provides isolation of the containment atmosphere, and all process systems that penetrate containment, from the environment. This Function is necessary to prevent or limit the release of radioactivity to the environment in the event of a large break LOCA." When the CIS Phase B signal is received, CCW system valves close that isolate the cooling to the Reactor Coolant Pumps (RCPs) in containment. The reason why these valves are closed as part of the CIS is to isolate a potential leak path from containment to the outside environment. While the valve alignments made by the CIS may affect heating loads on various systems incidentally, this is not the purpose, i.e. *the basis*, for the CIS actuations.

The request to give credit for Answer D is denied. Answer C is the only correct answer.

### **RO QUESTION #71**

Which of the following is required if a liquid radioactive release is terminated due to a high radiation alarm on the associated release monitor?

- A. Document the alarm in the unit logs. Once the high radiation alarm clears the release may be recommenced with the current permit.
- B. **When the cause of the high radiation alarm is determined, the release may be recommenced once a new permit is issued.**
- C. Initiate a Condition Report to determine the cause of the high radiation alarm, obtain Shift Manager approval to recommence the release with a new permit.
- D. Raise the high radiation alarm setpoint with Chemistry Manager's approval and obtain Shift Manager's concurrence to recommence release with the current permit.

## **LICENSEE COMMENT**

Applicant feedback is that Answer C can also be considered a correct answer in addition to Answer B as contained in the approved answer key.

Support for Answer C:

- The first part of the answer is correct in that STA-421 would require that a Condition Report be initiated. Additionally, the Shift Manager is the individual responsible for approving a release in accordance with STA-603. As such, the applicants believed that obtaining Shift Manager approval for a new permit (also required by STA-603) implied that the cause of the alarm had been determined which was in contradiction to the intent of the answer key, however, is plausible within the operating construct of licensing applicants.

## **NRC RESOLUTION**

Based on review of the submission, both Answer B and C will be accepted as correct answers.

### **4OA6 Meetings, Including Exit**

The chief examiner presented the preliminary examination results to Mr. R. Flores, and other members of the staff on June 14, 2012. A telephonic meeting conveying the NRC licensing decisions was conducted on July 3, 2012, between Messrs. Sean D. Hedger, Chief Examiner, and Garry Struble, Simulator and License Examination Manager. Following this, a telephonic exit was conducted on July 23, 2012, between the chief examiner and Mr. S. Smith, with other members of the licensee staff.

Materials of a proprietary nature used during the examination will be redacted from documents made public.

### **4OA7 Licensee-Identified Violations**

The following Severity Level IV violation was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section 2.3.2 of the NRC Enforcement Policy, for being dispositioned as a Non-Cited Violation.

10 CFR 50.9(a) requires, in part, that information provided to the Commission by a licensee shall be complete and accurate in all material aspects. On June 5, 2012, the NRC gave approval to the licensee to administer a written examination to initial operating license applicants on June 19, 2012. The approval was made based on content of the written examination provided to the NRC on June 4, 2012. In this version of the written examination, Question 71 had been revised based on NRC comments so that it had only one correct answer. Previous draft revisions of the question had two plausible correct answers. The written examination was administered on June 19, 2012. On June 20, 2012, the licensee was conducting the post written examination analysis in accordance with NUREG-1021, ES-403, Section D.3.b. As part of this, the licensee reviews performance on missed questions for training deficiencies and wording problems. While completing this analysis, the licensee identified that the version of

Question 71 on the administered written examination was not the version that was approved on June 5, 2012. The licensee notified the NRC of the issue on the same day (June 20, 2012), and completed an extent of condition review that showed that this was the only written examination question provided in the form inconsistent with the questions approved on June 5, 2012. The violation was of very low safety significance because the performance deficiency did not contribute to the NRC making any incorrect regulatory decisions regarding issuance of operating licenses. The licensee entered this issue into their corrective action program as Condition Report CR-2012-006252.

ATTACHMENT 1: SUPPLEMENTAL INFORMATION

ATTACHMENT 2: ES-501 SIMULATOR FIDELITY REPORT

## **SUPPLEMENTAL INFORMATION**

### **KEY POINTS OF CONTACT**

#### **Licensee Personnel**

R. Flores, Senior Vice President and Chief Nuclear Officer  
R. Slough, Regulatory Affairs  
G. Struble, Simulator and License Examination Manager  
E. Skelton, Training Manager  
C. Rice, Operations Training  
S. Smith, Plant Manager

#### **NRC Personnel**

B. Tindell, Resident Inspector  
J. Kramer, Senior Resident Inspector

### **ADAMS DOCUMENTS REFERENCED**

Accession No. ML12201A247 - FINAL WRITTEN EXAMINATIONS  
Accession No. ML 12205A412 – FINAL OPERATING TEST  
Accession No. ML12201A866 - POST EXAMINATION ANALYSIS AND COMMENTS

Facility Licensee: Comanche Peak Nuclear Power Plant

Facility Docket No.: 50-445, -446

Operating Test Administered on: June 11-16, 2012

*This form is to be used only to report observations. These observations do not constitute audit or inspection findings and, without further verification and review in accordance with IP 71111.11, are not indicative of noncompliance with 10 CFR 55.46. No licensee action is required in response to these observations.*

While conducting the simulator portion of the operating tests, examiners observed the following items:

Item	Description
Emergency Diesel Generator (EDG) Fails to Operate as Expected When Dealing with Grid Instabilities	During examination validation, a proposed JPM involved Train A EDG paralleled to the Grid with subsequent lowering of grid frequency. When the Grid frequency was lowered, it is expected that the EDG will lower in frequency as well and increase its real load (kW/MW loading). However, when the Grid frequency was lowered, the EDG frequency and real load stayed the same. This JPM was removed from the examination to facilitate review by the simulator staff of the issue. This happened the week of May 14, 2012, but had been identified by licensee staff on April 26, 2012 (Condition Report CR-2012-004317).