Luminant

Rafael Flores
Senior Vice President &
Chief Nuclear Officer
rafael.flores@luminant.com

Luminant Power
P O Box 1002
6322 North FM 56
Glen Rose, TX 76043

T 254.897.5590
F 254.897.6652
C 817.559.0403

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March 9, 2012

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

SUBJECT: COMANCHE PEAK NUCLEAR POWER PLANT, UNITS 3 AND 4
DOCKET NUMBERS 52-034 AND 52-035
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION NO. 6222 (SECTION 3.9.6) AND 6310 (SECTION 01)

Dear Sir:

Luminant Generation Company LLC (Luminant) submits herein the response to Requests for Additional Information (RAIs) No. 6222 (CP RAI #244) Question 03.09.06-22 and all questions in RAI No. 6310 (CP RAI #246) for the Combined License Application for Comanche Peak Nuclear Power Plant Units 3 and 4. The RAIs address inservice testing and special nuclear material.

The other two questions in CP RAI #244 were answered in letter TXNB-12006 on February 27, 2012. 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 March 9, 2012.

Sincerely,

Luminant Generation Company LLC

RD Bridges for
Rafael Flores

Attachments: 1. Response to Request for Additional Information No. 6222 (CP RAI #244) Question 03.09.06-22
2. Response to Request for Additional Information No. 6310 (CP RAI #246)

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NRO

Electronic distribution w/attachments:

Rafael.Flores@luminant.com
mlucas3@luminant.com
jeff.simmons@energyfutureholdings.com
Bill.Moore@luminant.com
Stephanie.Moore@energyfutureholdings.com
rbird1@luminant.com
Allan.Koenig@luminant.com
Timothy.Clouser@luminant.com
Ronald.Carver@luminant.com
David.Volkening@luminant.com
Bruce.Turner@luminant.com
Eric.Evans@luminant.com
Robert.Reible@luminant.com
donald.woodlan@luminant.com
John.Conly@luminant.com
Jcaldwell@luminant.com
David.Beshear@txu.com
Ashley.Monts@luminant.com
Fred.Madden@luminant.com
Dennis.Buschbaum@luminant.com
Carolyn.Cosentino@luminant.com
NuBuild Licensing files
sfrantz@morganlewis.com
jrund@morganlewis.com
tmatthews@morganlewis.com
regina.borsh@dom.com
diane.aitken@dom.com
askolhek@bechtel.com
yoshinori_fujiwara@mhi.co.jp
kano_saito@mhi.co.jp
yuzukiytsu_suzuki@mhi.co.jp
Luminant Records Management (.pdf files only)
shinji_kawanago@mnes-us.com
masanori_onozuka@mnes-us.com
ck_paulson@mnes-us.com
joseph_tapia@mnes-us.com
russell_bywater@mnes-us.com
□uzuki□_mcconaghy@mnes-us.com
mutsumi_ishida@mnes-us.com
yukako_hill@mnes-us.com
□uzuki□t_kellenberger@mnes-us.com
ryan_sprengel@mnes-us.com
al_freitag@mnes-us.com
□uzuki_hoshi@mnes-us.com
rjb@nei.org
kra@nei.org
□uzuki□.takacs@nrc.gov
cp34update@certrec.com
michael.johnson@nrc.gov
David.Matthews@nrc.gov
Balwant.Singal@nrc.gov
Hossein.Hamzehee@nrc.gov
Stephen.Monarque@nrc.gov
jeff.ciocco@nrc.gov
michael.willingham@nrc.gov
john.kramer@nrc.gov
Brian.Tindell@nrc.gov
Alicia.Williamson@nrc.gov
Elmo.Collins@nrc.gov
Loren.Plisco@nrc.com
Susan.Vrahoretis@nrc.gov
Frank.Akstulewicz@nrc.gov
ComanchePeakCOL.Resource@nrc.gov
hickste@earthlink.net

Attachment 1

Response to Request for Additional Information No. 6222 (CP RAI #244)
Question 03.09.06-22

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.: 6222 (CP RAI #244)

SRP SECTION: 03.09.06 - Functional Design Qualification and Inservice Testing Programs for Pumps, Valves, and Dynamic Restraints

QUESTIONS for Component Integrity, Performance, and Testing Branch 1 (AP1000/EPR Projects) (CIB1)

DATE OF RAI ISSUE: 12/14/2011

QUESTION NO.: 03.09.06-22

As a supplement to RAI 2772 question 03.09.06-2, the NRC staff requested in RAI 6027 question 03.09.06-14 that the Comanche Peak COL applicant confirm that the Comanche Peak FSAR combined with the US-APWR DCD provides a full description of the IST program for pumps, valves, and dynamic restraints for Comanche Peak Units 3 and 4. The staff requested that the Comanche Peak COL applicant submit any planned modifications to the Comanche Peak FSAR to fully describe the IST program where the US-APWR DCD provisions need to be supplemented. The staff also requested that the Comanche Peak COL applicant clarify the reference to Nonmandatory Appendix A, "Preparation of Test Plans," of the ASME OM Code in the Comanche Peak FSAR to specify that the IST program for Comanche Peak Units 3 and 4 must satisfy the ASME OM Code, as incorporated by reference in 10 CFR 50.55a.

In its response to RAI 6027 question 03.09.06-14, the Comanche Peak COL applicant stated that the planned revisions to the US-APWR DCD by MHI will provide a full description of the IST program for Comanche Peak Units 3 and 4. The Comanche Peak COL applicant also stated that MHI plans to revise the US-APWR DCD to delete the reference to the ASME OM Code, Appendix A, and that a similar change will be made to the Comanche Peak FSAR. Since submittal of the Comanche Peak response, MHI has indicated plans to revise the US-APWR DCD to specify in a COL Information Item that the COL applicant is responsible for fully describing the IST program for pumps, valves, and dynamic restraints.

As a supplement to RAI 03.09.06-14, the NRC staff requests that the Comanche Peak COL applicant revise the Comanche Peak FSAR to respond to the COL Information Item by referencing the provisions in the US-APWR DCD and specifying any plant-specific information in the Comanche Peak FSAR to provide a full description of the IST program for pumps, valves, and dynamic restraints to be used at Comanche Peak Units 3 and 4. The staff also requests that the Comanche Peak COL applicant clarify its response to RAIs 03.09.06-15 and 16 regarding the COL Information Item as part of its response to this supplemental RAI.

ANSWER:

MHI submitted a supplement to DCD RAI 801-5897 in letter UAP-HF-12062 on March 8, 2012 to reinstate and revise COL Item 3.9(6) and revise COL Item 3.9(8). The revised COL Item 3.9(6) requires "the COL Applicant to provide the program for dynamic restraints in accordance with the ASME OM Code." The revised COL Item 3.9(8) requires the COL Applicant to "administratively control the edition and addenda to be used for the IST program and to provide a full description of their IST program for pumps, valves, and dynamic restraints."

The IST program consists of two parts, the pre-service and the operational test programs. The initial pre-service portion is performed in conjunction with the design, procurement, construction, and initial test program as part of plant construction and the pre-operational startup test programs. The activities associated with the IST program are described in DCD Subsection 3.9.6. The second part of the IST program is the operational test program performed by the licensee. The DCD describes the IST activities and the COLA describes the programmatic implementation. Collectively, this is the IST program. The DCD description includes both the pre-service and operational portions of the IST program. The initial program is used to establish the IST performance baseline for pumps, valves and dynamic restraints (snubbers) as outlined in DCD Subsection 3.9.6. The baseline performance data is then used in the operational test program to verify that operational performance values remain acceptable.

FSAR Subsection 3.9.6 has been revised to expand the description of the IST program and address the revised COL items. As shown in the markup, the FSAR no longer adopts non-mandatory Appendix A of the ASME OM Code.

The response to Question 03.09.06-15 remains valid except for the wording of COL Item 3.9(8), which has been superseded by the wording in the attached markup. With respect to the Luminant response to Question 03.09.06-16, the portion regarding the use of "IST program plan" remains valid, but the information concerning COL Item 3.9(6) is superseded by the attached markup of the FSAR.

Impact on R-COLA

See attached marked-up FSAR Revision 2 pages 3.9-2, 3.9-3, 3.9-5, and 3.9-6.

Impact on S-COLA

This response is considered standard.

Impact on DCD

None.

The design specification for snubbers installed in harsh service conditions (e.g., high humidity, temperature, radiation levels) is evaluated for the projected life of the snubber to assure snubber functionality including snubber materials (e.g., lubricants, hydraulic fluids, seals).

3.9.6 Functional Design, Qualification, and Inservice Testing Programs for Pumps, Valves, and Dynamic Restraints

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STD COL 3.9(8) ~~Replace the second sentence of the third paragraph in DCD Subsection 3.9.6 with the following.~~Replace the fourth paragraph from the end of DCD Subsection 3.9.6 with the following. RCOL2_03.09.06-15

~~The inservice testing (IST) program for pumps, valves, and dynamic restraints is administratively controlled to ensure that the equipment will be capable of performing its safety function throughout the life of the plant.~~The US-APWR utilizes the ASME OM Code, 2004 Edition through the 2006 Addenda (or the optional ASME Code Cases listed in NRC RG 1.192 that is incorporated by reference in paragraph (b) of 10 CFR 50.55a, subject to the applicable limitations and modifications) (Reference 3.9-13) for developing the IST Program for ASME Code, Section III, Class 1, 2 and 3 safety-related pumps, valves and dynamic restraints in US-APWR Subsection 3.9.6. The inservice testing (IST) program for pumps, valves, and dynamic restraints including the ASME OM Code edition and addenda to be used for the IST program is administratively controlled to ensure that the equipment will be capable of performing its safety function throughout the life of the plant.

Inservice Testing Program Description RCOL2_03.06-22

The CPNPP Units 3 and 4 IST program incorporates the IST program described in US-APWR DCD Section 3.9.6 and its subsections as expanded in this FSAR subsection. The IST program is developed in accordance with the requirements delineated in ASME Code Section XI Rules for Inservice Inspection of Nuclear Power Plant Components, the ASME OM Code, the plant Technical Specifications, and good engineering practices. The IST relies on baseline information obtained during plant construction and startup testing. The program is implemented in general conformance with NUREG-1482 (Reference 3.9-60), Guidelines for Inservice Testing at Nuclear Power Plants. [also see NUREG-1482, Revision 2 (Reference 3.9-201), APPENDIX A: Guidelines for Inservice Testing Program for Pumps and Valves at Nuclear Power Plants and APPENDIX B: Guidelines for Inservice Examination and Testing Program for Dynamic Restraints (Snubbers) at Nuclear Power Plants]. In addition, the development of the IST relies on the guidance provided in Sections 5 (Guidance for Developing and Implementing IST Programs) and 8 (IST Program Guidance for New Reactors) of

NUREG 1482, as well as other applicable regulatory guidance documents referenced in these NUREG documents. RCOL2_03.06-22

Aspects of the IST program will:

a. verify the appropriate Code Class for each component of the plant, identify the system boundaries for each class of components subject to test or examination, and identify the components exempt from testing or examination requirements

b. verify the design and arrangement of system components to include allowance for adequate access and clearances for conducting the tests and examinations (done as part of the initial design verification phase and for any subsequent plant modifications)

c. verify that appropriate IST requirements are captured in procurement specifications for ASME components

d. prepare plans and schedules for the implementation of the IST program and the performance of IST activities

e. prepare written test and examination instructions and procedures. In formulating program procedures, the appropriate code edition and addenda are to be identified and administratively controlled.

f. verify the qualification of personnel who perform and evaluate examinations and tests in accordance with the QAP

g. perform the required tests and examinations

h. record the required test and examination results that provide a basis for evaluation and facilitate comparison with the results of subsequent tests or examinations

i. evaluate tests and examination results

j. maintain adequate test and examination records in accordance with the QAP requirements

k. retain test and examination records for the service lifetime of the component or system

l. assure that any plant changes that impact IST requirements are evaluated and the IST program is adjusted accordingly

m. provide for the training of personnel assigned to perform IST functions

STD COL 3.9(6) The IST program, including pumps, valves and dynamic restraints, will be developed and implemented per the milestone schedule provided in Table 13.4-201 for the Inservice Testing Program. RCOL2_03.06-21

3.9.6.2 IST Program for Pumps

STD COL 3.9(11) Replace the ~~third~~seventh paragraph in DCD Subsection 3.9.6.2 with the following. DCD_03.09.06-53

The site-specific safety-related pump IST parameters and frequencies are provided in Table 3.9-202.

3.9.6.3 IST Program for Valves

STD COL 3.9(12) Replace the fifth paragraph in DCD Subsection 3.9.6.3 with the following.

The types of testing and frequencies of site-specific valves subject to IST in accordance with the ASME Code are provided in Table 3.9-203.

3.9.6.4 IST Program for Dynamic Restraints

RCOL2_03.09.06-14
RCOL2_03.09.06-22

STD COL 3.9(6) Replace the second paragraph in DCD Subsection 3.9.6.4 with the following.

The IST program for dynamic restraints is implemented in accordance with the ASME OM Code.~~The IST program plan for dynamic restraints (snubbers) complies with the requirements in the latest edition and addenda of the Nonmandatory Appendix A of ASME OM Code incorporated by reference in 10 CFR 50.55a (Reference 3.9-29). The IST program plan for dynamic restraints will be provided 12 months prior to fuel load.~~

3.9.9 Combined License Information

Replace the content of DCD Subsection 3.9.9 with the following.

STD COL 3.9(1) ***3.9(1)*** *Snubber functionality*

This COL item is addressed in Subsection 3.9.3.4.2.5

CP COL 3.9(2) ***3.9(2)*** *Classification of CPNPP Unit 3 reactor internals as prototype*

This COL item is addressed in Subsection 3.9.2.4.1.

3.9(3) *Deleted from the DCD.*

3.9(4) *Deleted from the DCD.*

3.9(5) *Deleted from the DCD.*

STD COL 3.9(6) ***3.9(6)*** ~~*Program plan for IST of dynamic restraints*~~*Program for IST of dynamic restraints in accordance with the ASME OM Code.* RCOL2_03.0 9.06-14 RCOL2_03.0 9.06-22

This COL item is addressed in Subsection 3.9.6.4.

3.9(7) *Deleted from the DCD.*

STD COL 3.9(8) ***3.9(8)*** ~~*Administrative control of the edition and addenda used for the IST program*~~*Administrative control of the edition and addenda to be used for the IST program and to provide a full description of their IST program for pumps, valves, and dynamic restraints.* RCOL2_03.0 9.06-15 RCOL2_03.0 9.06-22

This COL item is addressed in Subsection 3.9.6.

3.9(9) *Deleted from the DCD.*

STD COL 3.9(10) CP COL 3.9(10) ***3.9(10)*** *Site-specific active pumps*

This COL item is addressed in Subsection 3.9.3.3.1, and Table 3.9-201.

STD COL 3.9(11) CP COL 3.9(11) ***3.9(11)*** *Site-specific, safety-related pump IST parameters and frequency*

This COL item is addressed in Subsection 3.9.6.2, and Table 3.9-202.

STD COL 3.9(12) CP COL 3.9(12) ***3.9(12)*** *Testing and frequency of site-specific valves subject to IST*

This COL item is addressed in Subsection 3.9.6.3, and Table 3.9-203.

3.9.10 References

RCOL2_03.0 9.06-22

Add the following reference after the last reference in DCD Subsection 3.9.10.

3.9-201 Guidelines for Inservice Testing at Nuclear Power Plants, NUREG-1482; Revision 2.

Attachment 2

Response to Request for Additional Information No. 6310 (CP RAI #246)

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.: 6310 (CP RAI #246)

SRP SECTION: 01 - Introduction and Interfaces

QUESTIONS for Reactor Security and Programs Branch (NSIR/DRP/RSPLB)

DATE OF RAI ISSUE: 2/7/2012

QUESTION NO.: 01-9

(U) Provide information on the amount of uranium hexafluoride (UF6) to be utilized on-site. Provide information on where the UF6 will be stored, how much will be on-site, the enrichment, how it will be stored and transported on-site, what it will be used for, and how it will be processed. If UF6 is to be utilized on-site, additional information that satisfies the security requirements contained in the Interim Compensatory Measures Orders (ICMO) EA-03-225, dated March 6, 2003 [Safeguards Information] will be requested once the security review under 10 CFR Part 73.67 commences. In addition to the additional security requirements, a Critical Target Area (CTA) analysis must be completed and the results provided to the staff for review.

(U) Regulatory Basis: In accordance with 10 CFR 70.9(a) Information provided to the Commission by an applicant for a license or by a licensee or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the applicant or the licensee shall be complete and accurate in all material respects. In addition, in accordance with 10 CFR 70.23(a) an application for a license will be approved if the Commission determines that: (3) The applicant's proposed equipment and facilities are adequate to protect health and minimize danger to life or property.

This is a follow-up request for additional information to RAI 6209 (Letter Number 198) Question Number 4.

ANSWER:

In the response to RAI No. 6209 (CP RAI #198) Question 2, submitted on May 6, 2011 (ML11129A156), Luminant revised FSAR Subsection 12.2.1.1.10 to include the following statement:

> During the period prior to the implementation of the Emergency Plan (in preparation for the initial fuel loading following the 52.103(g) finding), no specific materials related emergency plan will be necessary because:

a. No byproduct material will be received, possessed, or used in a physical form that is "in unsealed form, on foils or plated sources, or sealed in glass," that exceeds the quantities in Schedule C in 10 CFR 30.72, and

b. The source material to be received, possessed, or used does not involve uranium hexafluoride in excess of 50 kilograms in a single container or 1000 kilograms total.

No 10 CFR Part 40 specifically licensed source material, including natural uranium, depleted uranium, and uranium hexafluoride, will be received, possessed, or used prior to initial fuel loading.

Additionally, a COLA Part 10 License Condition 2.B.(3)(i) was added in the response to RAI #198 Question 1, which states:

Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use, prior to the finding in Section 2.D.(3), such byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts that do not exceed the quantities in Schedule C of 10 CFR 30.72, and does not include uranium hexafluoride in excess of 50 kilograms in a single container or 1000 kilograms total;

FSAR Subsection 12.2.1.1.10 and Part 10 License Condition 2.B.(3)(i) have been revised to clearly state that there will not be any UF6 received at this facility.

Impact on R-COLA

See attached marked up FSAR Revision 2 page 12.2-3 and COLA Part 10 Revision 2 page 4.

Impact on S-COLA

This response is site specific.

Impact on DCD

None.

During the period prior to the implementation of the Emergency Plan (in preparation for the initial fuel loading following the 52.103(g) finding), no specific materials related emergency plan will be necessary because:

a. No byproduct material will be received, possessed, or used in a physical form that is "in unsealed form, on foils or plated sources, or sealed in glass," that exceeds the quantities in Schedule C in 10 CFR 30.72, and

b. The source material to be received, possessed, or used does not ~~involve~~include any uranium hexafluoride ~~in excess of 50 kilograms in a single container or 1000 kilograms total~~. RCOL2_246_01-09

No 10 CFR Part 40 specifically licensed source material, including natural uranium, depleted uranium, and uranium hexafluoride, will be received, possessed, or used prior to initial fuel loading.

12.2.3 Combined License Information

Replace the content of DCD Subsection 12.2.3 with the following.

CP COL 12.2(1)
STD COL 12.2(1)

12.2(1) *Additional sources*

This COL item is addressed in Subsection 12.2.1.1.10 and Table 12.2-201.

CP COL 12.2(2)
STD COL 12.2(2)

12.2(2) *Additional storage space and radwaste facilities*

This COL item is addressed in Subsection 12.2.1.1.10 and Section 12.5.

CP COL 12.2(3)

12.2(3) *Radiation Protection Program provisions for limiting the radiation levels of the RWSAT and PMWTs.*

This COL item is addressed in Section 12.5.

CP COL 12.2(4)

12.2(4) *Ensuring the radioactivity concentration in the RWSAT and PMWTs remain under the levels described in the DCD.*

This COL item is addressed in Section 12.5.

Proposed License Condition	Source
1. Receipt, Possession and Use of Byproduct, Source and Special Nuclear Material (SNM) 2.B PROPOSED LICENSE CONDITION Subject to the conditions and requirements incorporated herein, the Commission hereby licenses Luminant Generation Company LLC: (1) Pursuant to Sections 103 and 185.b of the Act and 10 CFR Part 52, to construct, possess, use, and operate the facility at the designated location in accordance with the procedures and limitations set forth in this license; (2) (i) Pursuant to the Act and 10 CFR Part 70, to receive and possess at any time, special nuclear material as reactor fuel in accordance with the limitations for storage and amounts required for reactor operation, described in the FSAR, as supplemented and amended; (ii) Pursuant to the Act and 10 CFR Part 70, to use special nuclear material as reactor fuel, after the finding in Section 2.D.(3) of this license has been made, in accordance with the limitations for storage and amounts required for reactor operation, and described in the FSAR, as supplemented and amended; (3) (i) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use, prior to the finding in Section 2.D.(3), such byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts that do not exceed the quantities in Schedule C of 10 CFR 30.72, and does not include any uranium hexafluoride ~~in excess of 50 kilograms in a single container or 1000 kilograms total~~; (ii) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use, after the finding in Section 2.D.(3), any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required.	Based on Model COL discussed with NRC and DCWGs on 2/26/2011 and 10 CFR 30, 40 and 70. Luminant response to RAI-198. NOTE: Numbering of license conditions based upon the Model COL discussed with the NRC and DCWGs on 2/26/2011.

RCOL2_246_01-09

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.: 6310 (CP RAI #246)

SRP SECTION: 01 - Introduction and Interfaces

QUESTIONS for Reactor Security and Programs Branch (NSIR/DRP/RSPLB)

DATE OF RAI ISSUE: 2/7/2012

QUESTION NO.: 01-10

(U) Clarify the following points in your Part 11 submittal dated May 6, 2011, titled *Special Nuclear Material (SNM) Control and Accounting (MC&A) Program Description* Revision 0:

1. Page MC&A-3 states the SNM custodian is responsible for the functions that relate to the control of SNM. What position has responsibility for the implementation of the SNM control and accounting function?

2. Page MC&A-4 states the accounting group maintains procedures for SNM in the plant's possession as required in 10 CFR 74.19(b). Which group is responsible for maintaining records as required under 10 CFR 74.19(d)?

3. Page MC&A-5, *Unit of Control*, states that units of SNM that require control are the items defined in paragraph 2.6. Is 2.6 the correct reference since that is the definition for *item control area*? Did you mean to refer generically to 2.0 since several definitions contain SNM that would require control or to another specific definition such as 2.5?

4. Please clarify the following information in your May 6, 2011 submittal, Part 7:
Your exemption request to 10 CFR 70.22(b), 70.32(c) and the associated parts of 74 is titled, "Basis for Exemption from 10 CFR 50.71(e)(3)(iii)." Request you review this and re-title page 1-1 to reflect the topic of the exemption request.

(U) Regulatory Basis: The applicant requests a material license pursuant to 10 CFR 30, 10 CFR 40, and 10 CFR 70. In regards to clarification and additional information requested above, 10 CFR 70.9 *Completeness and accuracy of information* states in part:
(a) Information provided to the Commission by an applicant for a license or by a licensee or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the applicant or the licensee shall be complete and accurate in all material respects.

10 CFR 70.22, *Content of Applications* states the following in (d) and (e):
(d) The Commission may at any time after the filing of the original application, and before the expiration of the license, require further statements in order to enable the Commission to determine whether the

application should be granted or denied or whether a license should be modified or revoked. All applications and statements shall be signed by the applicant or licensee or a corporate officer thereof. (e) Each application and statement shall contain complete and accurate disclosure as to all matters and things required to be disclosed.

This is a follow-up request for additional information to RAI 6209 (RAI Letter Number 198), Question Number 6.

ANSWER:

1. The SNM Custodian is responsible for the overall implementation of the SNM MC&A program. This position resides in CPNPP reactor engineering (sometimes called core performance engineering), under the Systems Engineering group that reports to the Director of Site Engineering as shown in FSAR Figure 13.4-204. SNM MC&A Subsection 3.1 has been amended to state that the responsibility for custody and inventory control of SNM and the SNM Custodian resides in reactor engineering. Additionally, FSAR Subsection 13.1.1.2.2 has been revised to state that this position resides in the Systems Engineering group reporting to the Director of Site Engineering. Generic titles are used in the FSAR and SNM MC&A as the titles are subject to change over time.

2. The SNM MC&A accounting records are developed by the SNM Custodian who resides in reactor engineering under the Director of Site Engineering. SNM MC&A, Section 3 and FSAR Subsection 13.1.1.2.2 have been revised to state that that the maintenance of accounting records in accordance with 10 CFR 74.19(d) resides with the records management group.

3. Subsection 6.1 of the SNM MC&A Program Description should have referenced Paragraph 2.5 for the list of items that require control. This typographical error has been corrected.

4. COLA Part 7 "Exemption from 10 CFR 50.71(e)(3)(iii)" should have listed 10 CFR 70.22(b), 70.32(c), 74.31, 74.41 and 74.51 as the Basis for the Exemption in the title. This has been corrected.

In addition, the SNM MC&A Program Description in Part 11 of the COLA has been updated to provide appropriate references to the SNM Physical Protection Program Description which was submitted to the NRC via Luminant letter TXNB-11086 dated December 8, 2011.

Impact on R-COLA

See attached marked-up FSAR Revision 2 page 13.1-5.

See attached marked-up COLA Part 7 "Exemption from 10 CFR 50.71(e)(3)(iii)" Revision 0 (cover sheet, pages 1, 2, and 3)

See attached marked-up COLA Part 11 "SNM MC&A Program Description Revision 0" pages 1, 2, 3, 4, 6, and 10.

Impact on S-COLA

This response is considered standard.

Impact on DCD

None.

related to plant reliability, and providing for the development and implementation of an integrated administrative services program.

- Director, Site Engineering - The Director, Site Engineering reports directly to the Vice President, Nuclear Engineering and Support and is responsible for systems engineering and plant reliability, assuring the consistency of design documentation, providing Operations with timely design engineering services for analyses and technical evaluations, assuring that design activities conducted for Comanche Peak meet the requirements of the design control program, assuring that design outputs are consistent with the design basis of the plant, and providing engineering specialists.

- Director, NuBuild Project – The Director, NuBuild Project, reports directly to the Vice President, Nuclear Engineering and Support, and is responsible for establishing and managing the NSSS and A/E contracts, and also for the new nuclear plant licensing, engineering, procurement, construction, operational development, and QAPD implementation activities.

- Manager, NuBuild Quality Assurance – The Manager, NuBuild Quality Assurance, reports directly to the Vice President, Nuclear Engineering and Support, and is responsible for developing and maintaining the NuBuild QA Program, evaluating compliance with the QA program, and managing the QA organization resources responsible for independently planning and performing activities to verify effective implementation of the QA Program, including but not limited to new nuclear plant activities in engineering, licensing, document control, corrective action program, and procurement. The Manager NuBuild Quality Assurance is responsible for NuBuild QA activities until QA responsibilities are transitioned to the operating organization under the direction of the Director, Oversight and Regulatory Affairs. This transition will occur after receipt of the COL and prior to 30 days before initial fuel load.

- Systems Engineering Supervisors - The Systems Engineering Supervisors report directly to the Director, Site Engineering. The Systems Engineering Supervisors provide oversight to the systems engineers, including providing technical direction to the operating organization and operating support organizations, maintain training and qualification requirements of system engineers, providing technical support for plant surveillance testing and maintaining design configuration control of plant SSCs. The reactor engineering group (core performance engineering) is responsible for providing records related to the special nuclear material (SNM) control and accounting program to records management to ensure that the records are maintained as required under 10 CFR 74.19. A reactor engineer (systems engineer) is assigned as the SNM custodian. The SNM custodian is responsible for the implementation of the SNM control and accounting program. RCOL2_246_01-10

13.1.1.2.3 Oversight and Regulatory Affairs Organization

- Director, Oversight and Regulatory Affairs - The Director, Oversight and Regulatory Affairs, reports directly to the Executive Vice President and Chief

Comanche Peak Nuclear Power Plant Units 3 and 4

COL Application

Part 7

Exemption from 10 CFR 70.22(b), 74.31, 74.41 and 74.5150.71(e) (3) (iii)

RCOL2_ 246_01-10

~~Revision 0~~

Exemption 1:

Basis for Exemption from 10 CFR ~~50.71(e)(3)(iii)~~70.22(b), 74.31, 74.41 and 74.51 | RCOL2_ 246_01-10

In accordance with the provisions of 10 CFR §§ 52.7, 50.12, 70.17(a) and 74.7, Luminant Generation Company LLC (Luminant), hereby requests an exemption from the requirements of 10 CFR §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51 for Comanche Peak Nuclear Power Plant (CPNPP) Units 3 and 4. Section 70.22(b) requires an application for a license for special nuclear material (SNM) to contain a full description of the applicant's program for material control and accounting (MC&A) of special nuclear material under §§ 74.31, 74.33, 74.41, and 74.51. Section 70.32(c) requires a license authorizing the use of SNM to contain and be subject to a condition requiring the licensee to maintain and follow a SNM control and accounting program, measurement control program, and other material control procedures, including the corresponding records management requirements. However, §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51 contain exceptions for nuclear reactors licensed under 10 CFR Part 50. The regulations applicable to the MC&A of SNM for nuclear reactors licensed under 10 CFR Part 50 are provided in 10 CFR Part 74, Subpart B, §§ 74.11 through 74.19, excluding § 74.17. The purpose of this exemption request is to seek a similar exception for CPNPP Units 3 and 4 under 10 CFR Part 52, such that the same regulations will be applied to the special nuclear material MC&A program for Comanche Peak Units 3 and 4 as nuclear reactors licensed under 10 CFR Part 50.

Background

Nuclear reactors licensed under Part 50 are explicitly excluded from the requirements of §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51. There is no technical or regulatory reason to treat nuclear reactors licensed under Part 52 differently than reactors licensed under Part 50 with respect to the MC&A provisions in 10 CFR Part 74. As indicated in the Statement of Considerations for 10 CFR § 52.0(b) (72 Fed. Reg. 49352, 49372, 49436 (Aug. 28, 2007)), applicants and licensees under Part 52 are subject to all of the applicable requirements in 10 CFR Chapter I, whether or not those provisions explicitly mention a Combined Operating License (COL) under 10 CFR Part 52. This regulation clearly indicates that plants licensed under Part 52 are to be treated no differently than plants licensed under Part 50 with respect to the substantive provisions in 10 CFR Chapter I (which includes Parts 70 and 74). Specifically, the exception for nuclear reactors licensed under Part 50, as contained in §§ 70.22(b), 70.32(c), 74.31, 74.41, or 74.51, should also be applied to reactors licensed under Part 52.

An exemption from the requirements of §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51 would not mean that an MC&A program would be unnecessary or that the COL application would be silent regarding MC&A. To the contrary, the MC&A requirements in Subpart B to Part 74 would still apply to the COL just as they are to licenses issued under Part 50. Additionally, the application for CPNPP Units 3 and 4 will describe the MC&A program for satisfying Subpart B to Part 74.

Provisions for Granting an Exemption

Pursuant to 10 CFR § 52.7 and § 50.12, the NRC may grant an exemption from requirements contained in 10 CFR Parts 52 and 50 provided that the following conditions are satisfied:

1. The requested exemption is authorized by law;
2. The requested exemption will not present an undue risk to the public health and safety;
3. The requested exemption is consistent with the common defense and security; and
4. Special circumstances are present.

The criteria in § 50.12 encompass the criteria for an exemption in 10 CFR §§ 70.17(a) and 74.7, the specific exemption requirements for Parts 70 and 74, respectively. Therefore, by demonstrating that the exemption criteria in § 50.12 are satisfied, this request also demonstrates that the exemption criteria in §§ 52.7, 70.17(a) and 74.7 are satisfied. The four criteria are addressed below.

1) This exemption is consistent with the Atomic Energy Act or any other statute and is therefore authorized by law.

2) An exemption from the requirements of 10 CFR §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51 would not present an undue risk to public health and safety. The exemption would treat CPNPP Units 3 and 4 similarly to Part 50 license applicants, who are excluded from the regulations in question. Furthermore, the application for CPNPP Units 3 and 4 will contain a description of the Material Control and Accountability (MC&A) program for special nuclear material under Subpart B to Part 74. Therefore, the exemption from 10 CFR §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51 would not present an undue risk to public health and safety.

3) An exemption from the requirements of 10 CFR §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51 would not be inconsistent with the common defense and security. The exemption would treat CPNPP Units 3 and 4 similarly to Part 50 license applicants, who are excluded from the regulations in question. Furthermore, the application for CPNPP Units 3 and 4 will contain a description of the MC&A program for CPNPP Units 3 and 4 under Subpart B to Part 74. Therefore, the exemption from §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51 is consistent with the common defense and security.

4) The exemption request involves special circumstances under 10 CFR § 50.12(a)(2)(ii). This subsection defines special circumstances as when "[application of the regulation in the particular circumstances would not serve the underlying purpose of the rule or is not necessary to achieve the underlying

purpose of the rule]." Since the Commission determined that the requirements in 10 CFR §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51 are unnecessary for Part 50 applicants, those requirements are also unnecessary for Part 52 applicants.

Environmental Assessment

The proposed action would exempt CPNPP Units 3 and 4 from the requirement of 10 CFR §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51 for Comanche Peak Units 3 and 4. Section 70.22(b) requires an application for a license for SNM to contain a full description of the applicant's program for MC&A of SNM under §§ 74.31, 74.33, 74.41, and 74.511. Section 70.32(c) requires a license authorizing the use of SNM to contain and be subject to a condition requiring the licensee to maintain and follow a SNM material control and accounting program, measurement control program, and other material control procedures, including the corresponding records management requirements. However, §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51 contain exceptions for nuclear reactors licensed under 10 CFR Part 50. The regulations applicable to the MC&A of special nuclear material for nuclear reactors licensed under 10 CFR Part 50 are provided in 10 CFR Part 74, Subpart B, §§ 74.11 through 74.19, excluding § 74.17. The purpose of this exemption request is to seek a similar exception for Comanche Peak Units 3 and 4 under 10 CFR Part 52, such that the same regulations will be applied to the special nuclear material MC&A program for Comanche Peak Units 3 and 4 as nuclear reactors licensed under 10 CFR Part 50.

The proposed action will not result in any impact on the environment. The exemption would only clarify the applicability of the identified regulations and establish consistency between CPNPP Units 3 and 4 and the fleet of operating plants licensed under 10 CFR Part 50. Consequently, the exemption would not authorize any activity that could have an impact on the environment.

The only alternative to the proposed action would be not issuing the exemption (i.e., the "no action" alternative). This alternative would not accomplish the purpose of the proposed action (to clarify the applicability of the regulations and establish consistency). The "no action" alternative would not have a different environmental impact. Both the proposed action and the no action alternative would have no impact on the environment.

Conclusions

As demonstrated above, the exemption complies with the requirements of 10 CFR §§ 50.12, 52.7, 70.17, and 74.7. For these reasons, approval of the requested exemption is requested from the regulations of 10 CFR §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51, as described herein.

Exemption Wording for COL

The facility is exempt from the requirements of 10 CFR §§ 70.22(b), 70.32(c), 74.31, 74.41, and 74.51.

Comanche Peak Units 3 and 4

Special Nuclear Material (SNM) Control and Accounting (MC&A) Program Description

1. Scope

The MC&A Program establishes guidelines concerning control of and accounting for SNM at Comanche Peak Units 3 and 4 in accordance with Subpart B of 10 CFR Part 74.

The criteria prescribed in the MC&A Program are applicable to SNM and various material mixtures containing SNM. Generally, the SNM involved is plutonium, U-233, or uranium enriched in the isotope U-235. SNM is typically in the form of pellets encapsulated in fuel rods. Criteria are established for the SNM control and accounting system, including criteria for the receipt, internal control, physical inventory, and shipment of SNM.

In addition to the information provided in this program description, the following Comanche Peak Units 3 and 4 licensing basis documents provide the regulatory basis that describes how the applicable requirements for material control and accounting defined in 10 CFR 74 will be met:

- Information related to amounts of SNM as reactor fuel required for reactor operation is provided in FSAR Section 4.1.
- Information related to storage of SNM as reactor fuel is provided in FSAR Section 9.1.
- Information related to the organizational structure for Comanche Peak Units 3 and 4, including those responsible for SNM material control and accounting, is provided in FSAR Section 13.1.
- Information related to training of personnel, including those responsible for SNM material control and accounting, is provided in FSAR Section 13.2.
- Information related to implementation of this Special Nuclear MC&A Program is provided in FSAR Table 13.4-201
- Information related to plant procedures, including those used to control SNM, is provided in FSAR Section 13.5.
- Information on the Physical Protection and Control of SNM is contained in "SNM Physical Protection Program Description," Rev. 0, December 2011 (this control is in place prior to fuel receipt and prior to full implementation of the Physical Security Program per 10 CFR 73.55). RCOL2_246_01-10

2. Definitions

In this program description, the following definitions shall apply:

2.1. Book inventory (inventory of record). A master database or listing of all SNM currently possessed, reflecting the input of all material control records.

2.2. Fuel assembly. The grouping of fuel components combined as an integral unit for use in a nuclear reactor.

2.3. Fuel component. The smallest structurally discrete part of a fuel assembly that contains SNM. This is normally a fuel rod for intact components, but includes rod fragments, or pellets (or significant fraction thereof) if the rod structural integrity is not maintained.

2.4. Fuel component container. A container that provides protection to fuel components comparable to that afforded by an intact fuel assembly and that is held to the same accounting standards as a fuel assembly, in that the container has the following attributes:

- The container is specifically designed to contain rods/rod fragments;
- The container is stored in the fuel storage racks; and
- The use of specialized handling tools and equipment is required to access the SNM stored in the container.

2.5. Item. Fuel assembly, fuel component container, non-fuel SNM container, sealed container, reassembled reactor vessel, or a discrete piece of SNM (fuel or non-fuel) that is not stored in a container.

2.6. Item control area (ICA)/ Controlled Access Area (CAA). A defined area within the access controlled area for which the SNM (fuel assemblies, fuel components, or non-fuel SNM) is maintained in such a way that, at any time, an item count and related SNM quantities can be obtained from the records for the SNM located within the area. ICAs/CAA have defined physical boundaries; these generally comprise fresh and irradiated fuel storage areas, including reactor vessels, spent fuel pools, and non-fuel SNM storage areas.

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2.7. Item count (piece count). Visual verification that an item is in the location documented in the material control records. Verification of an item's identification number is not necessary for a piece count.

2.8. Material control records. Records of SNM receipt, internal transfer, reconstitution, acquisition, inventory, and shipment (including disposal).

2.9. Non-fuel SNM. Items containing SNM that are not intended for use as fuel, e.g., fission detectors.

2.10. Non-fuel SNM container. A container used to store non-fuel SNM items, which has the following attributes:

- The container is specifically designed or evaluated for storage of SNM;
- The container is stored in an area with controlled access; and
- The use of specialized handling tools and equipment is required to access the SNM stored in the container.

2.11. Physical inventory. Determined on a measured basis of the quantity of SNM on hand at a given time; a complete check of all material on hand. The methods of physical inventory and associated measurements will vary depending on the material to be inventoried and the process involved. The typical physical inventory at a power reactor plant consists of an item count (piece count) of SNM in each ICA.

2.12. Sealed container. Container storing SNM that has been sealed with a tamper-safing device or other mechanical means; e.g., welding.

2.13 Special nuclear material (SNM). Plutonium, U_{233}, uranium enriched in the isotope U-233 or in the isotope U-235, and any other material which the Nuclear Regulatory Commission (NRC), pursuant to the provisions of Section 51 of the Atomic Energy Act of 1954, as amended, determines to be SNM.

2.14 Tamper-safing. The use of a device on a container in a manner and at a time that ensures a clear indication of any violation of the integrity of the contents of the container.

3. Organizational Requirements

3.1. Delegation of Responsibilities and Authority

3.1.1 Reactor engineering (sometimes called core performance engineering) is part of system engineering, and has responsibility for custody and inventory control of all SNM on site. The reactor engineering manager assigns the SNM Custodian and reports through system engineering to the Director of Site Engineering. RCOL2_246_01-10

3.1.2 Material control functional and organizational relationships are set forth in writing in organizational directives, instructions, procedures, manuals, and other documents. Documentation includes position qualification requirements and definitions of authority, responsibilities, and duties. Activities involving handling, accounting, or control of SNM are verified by a second person. Specific assignments of responsibilities are prescribed for all facets of the SNM control system. Delegation of material control responsibilities and authority are in writing.

3.2 SNM Custodian

The SNM custodian is a reactor engineer (systems engineer) responsible for the performance of the functions that relate to the custody, inventory control and accounting of SNM. The SNM Custodian resides in reactor engineering under the Director of Site Engineering. All records generated will be provided to the records management group in accordance with 10 CFR 74.19 (d). RCOL2_246_01-10

3.3 Experience or Training

Personnel responsible for SNM control and accounting have experience or training applicable to their functions.

3.4 Accounting and Inventory Control Group RCOL2_246_01-10

The SNM ~~accounting group~~Custodian maintains procedures for accounting and inventory control of SNM in the plant's possession as required in 10 CFR 74.19(b). The site records management group maintains long term records storage as required by 10 CFR 74.19 (d). RCOL2_246_01-10

3.5 Vendor/Contractor Oversight

A program is established to provide adequate oversight of vendors/contractors conducting activities involving handling, accounting, and control of SNM.

4. Material Control and Accounting Program

4.1. Procedures

Written procedures are prepared and maintained covering the SNM control and accounting system, as required in 10 CFR 74.19(b). These procedures shall address, as a minimum, the following topics:

(1) Organization and personnel responsibilities and authorities;
(2) Designation and description of ICAs;
(3) Material control records and reporting;
(4) Notification for events concerning SNM;
(5) Receiving and shipping SNM;
(6) Internal transfer of SNM;
(7) Physical inventory of SNM;
(8) SNM element and isotopic calculation method; and
(9) Characterization and identification of items as SNM or non-SNM to preclude loss of control of SNM items.

4.2. Configuration Control

the applicable ICA, as required in 10 CFR 74.19(a). A Nuclear Material Transaction Report is completed, as required in 10 CFR 74.15.

6. Internal Control

6.1. Unit of Control

Units of SNM that require control are the items defined in paragraph ~~2.6~~2.5. Each of these units is identified in the material control records by its serial number or other unique identifier (e.g., a physical description of the item) and location, as required in 10 CFR 74.19(a). RCOL2_246_01-10

6.2. Item Control Areas

ICAs are established for physical and administrative control of SNM. The number of ICAs is sufficient to establish control.

6.3. Internal Transfers

Transfers of SNM into, out of, or within an ICA are accomplished only upon written authorization of the SNM custodian or other individual(s) at the plant site responsible for the SNM program.
Written authorization is obtained prior to the movement. All transfers of SNM are documented using a material control record by the responsible person involved in each operation, and the book inventory is updated for the applicable ICA.

6.4. Non-SNM items

Non-SNM items stored with items containing SNM are clearly identified as such to preclude SNM items from being mistaken for non-SNM items. In accordance with the regulatory requirements of 10 CFR 70.22 (a) (4), each application for a 10 CFR Part 70 Special Nuclear Material (SNM) License shall include the name, amount, and specifications (including the chemical and physical form and, where applicable, isotopic content) of the special nuclear material the applicant proposes to use or produce. The radioactive material identified in Appendix A represents nominal values of known non-fuel SNM specifically required for use in each CPNPP US-APWR unit. RCOL2_246_01-10

FSAR Section 12.2 includes the requirements for written procedures that address leak-testing of radioactive sources (byproduct material, source material, and devices that contain SNM, as appropriate). The leak-test will be consistent with 10 CFR 20.1501 survey and monitoring requirements for evaluating the quantities of radioactive material and the potential radiological hazard of the radioactive source.

10. Records and Reports

Records are created and retained, as required in 10 CFR 74.19(a). The accounting records are the basis for the MC&A program. Quantitative data generated by calculations of changes in quantities and isotopic composition due to irradiation and decay are recorded and reported in accordance with Comanche Peak's recording and reporting procedures. The records and reports system include:

(1) An accounting system for maintaining the book inventory;
(2) Material control records maintained for each ICA;
(3) Reconciliation of the results of physical inventories to the book inventory;
(4) Recording the transfer of SNM into or out of each ICA;
(5) Recording movement of SNM between locations within an ICA, for ICAs where locations have been established;
(6) Recording the creation of items containing SNM, such as creation of a rod fragment;
(7) Recording the estimated quantity and origin of SNM which has been inadvertently separated from fuel upon the discovery of the separation;
(8) Reporting to the accounting group the transfer of SNM into, within, or out of an ICA, if applicable;
(9) Perpetual inventory records of each ICA, including the serial number or other unique identifier and location of each item in the ICA that contains SNM;
(10) Historical data of SNM in each nuclear fuel assembly, fuel component, or non-fuel SNM item while in Comanche Peak's possession; and
(11) Retention as required in 10 CFR Part 74.

11. System Review and Assessment

Reviews of the SNM MC&A program are conducted periodically. The results of the reviews are documented and reported in accordance with the requirements of the quality assurance or self-assessment program.

12. Physical Security

Protection of SNM is in accordance with the requirements of 10 CFR 73.67 and the Comanche Peak Physical Security Plan. Information on the Physical Protection and Control of SNM is contained in "SNM Physical Protection Program Description," Rev.0, December 2011. (This control is in place prior to fuel receipt and prior to full implementation of the Physical Security Program per 10 CFR 73.55.)

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RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Comanche Peak, Units 3 and 4

Luminant Generation Company LLC

Docket Nos. 52-034 and 52-035

RAI NO.: 6310 (CP RAI #246)

SRP SECTION: 01 - Introduction and Interfaces

QUESTIONS for Reactor Security and Programs Branch (NSIR/DRP/RSPLB)

DATE OF RAI ISSUE: 2/7/2012

QUESTION NO.: 01-11

(U) Provide specifics regarding non-fuel special nuclear material (SNM), the chemical or physical form, and the maximum amount at any one time for the requested material license under Title 10, Code of Federal Regulation (CFR) Parts 30, 40, and 70. Provide specific material information in accordance with requirements for 10 CFR 30.32, 10 CFR 40.31, and 10 CFR 70.21 and 70.22. Specific to the request for a SNM licensed pursuant to 10 CFR 70, identify the types of non-fuel SNM that is planned to be used, how it is to be used, and the quantities of SNM associated with these usages.

(U) Regulatory Basis: The applicant requests a material license pursuant to 10 CFR 30, 10 CFR 40, and 10 CFR 70 in Part 1, Section 1.1.3, to receive posses, and use byproduct, source, and SNM. The applicant is required to provide specific descriptions of the nuclear materials to include the types, chemical or physical form, and the maximum quantities, in accordance with the applicable requirements of 10 CFR 30, 10 CFR 40, and 10 CFR 70 for the license requested. Title 10 CFR 30.32 and 10 CFR 40.31 for license of byproduct and source material requires the applicant to include specific information of nuclear material requested and their use or purpose for the license. In accordance with 10 CFR 70.22(a)(4), applicants must include, the name, amount, and specifications (including the chemical and physical form and, where applicable, isotopic content) of the special nuclear material the applicant request to possess and use for a 10 CFR Part 70 license.

This is a follow-up RAI to RAI 6209 (RAI Letter Number 198) Question 5.

ANSWER:

Section 6.4 of COLA Part 11. entitled "Special Nuclear Material (SNM) Control and Accounting (MC&A) Program Description" has been revised to address NRC concerns regarding non-fuel SNM, including the chemical or physical form and the maximum amount at any one time being requested for material pursuant to 10 CFR Parts 30, 40, and 70. Appendix A has been added to the MC&A Program and contains a table that specifies this information.

The radioactive material identified below represents nominal values of known non-fuel SNM specifically required for use in each US-APWR unit. The nominal values are based on the current design of the US-APWR neutron detectors; however, this design may change in the future.

Element and Mass Number	Chemical or Physical Form	Amount
Uranium 235 (approx. 93%) 234, 236 & 238 (approx. 7%)	Uranium Oxide in Incore Neutron Detector – Fission Chambers (8 detectors, including 4 spare)	4.4 mg of Uranium per fission chamber 8 fission chambers – total of approx. 35 mg
Uranium 235 (approx. 93%) 234, 236 & 238 (approx. 7%)	Uranium Oxide in Wide Range Neutron Detector – Fission Chambers (4 detectors, including 2 spare)	3 g of Uranium per fission chamber 4 fission chambers – total of approx. 12 g

The applicant for this 10 CFR 70 material license is technically qualified to engage in the proposed activities associated with this license based on the applicant's on-going experience in the safe operation of nuclear power plants as documented in FSAR Section 1.4.4.2, thereby satisfying the requirements of 10 CFR 70.22(a)(6). Furthermore, as stated in FSAR Table 13.4-201 Item 10, the appropriate radiation protection program elements will be implemented prior to the receipt of by-product, source or special nuclear material. These elements include organization, facilities, instrumentation and equipment, procedures (e.g., procurement, receipt, inventory, labeling, leak testing, surveillance, control, transfer, disposal, storage, issuance, and use of radioactive sources), and training of the Radiation Protection Program, thereby satisfying the requirements of 10 CFR 70.22(a)(4), (6), (7), and (8). In addition, adherence to the guidance contained in NEI 07-03A, which is incorporated by reference in FSAR Section 12.5, ensures that the appropriate Radiation Protection Program elements associated with organization, facilities, instrumentation and equipment, procedures and training will be in place before initial receipt of byproduct, source, or special nuclear material, thereby satisfying the requirements of 10 CFR 70.22 (a)(7) and (a)(8). FSAR Section 12.2 includes the requirements for written procedures that address leak-testing of radioactive sources (byproduct material, source material, and devices that contain SNM, as appropriate). The leak-test will be consistent with 10 CFR 20.1501 survey and monitoring requirements for evaluating the quantities of radioactive material and the potential radiological hazard of the radioactive source.

Disposal of the fission chambers will be consistent with the requirement established by operating procedures that specify the processes to be followed to ship waste that complies with the waste acceptance criteria of the disposal site, the waste classification and characteristic requirements of 10 CFR 61.55 and 61.53, and the requirements of third party waste processors as applicable. This process is identified in FSAR Section 11.4.

Prior to installation, the new fission chambers are stored in the new fuel storage area in the Reactor Building, which is an area protected by the fire protection program and fire protection system, as discussed in DCD Subsection 9A.3.44, Table 9A-2, Fire Zone FA2-210-13. Temporary storage of these non-combustible sealed sources is not specifically addressed in the US-APWR Fire Protection Analysis in DCD Appendix 9A, but the approach to extinguishing fires and containing material releases associated with the fission chambers would be similar to and bounded by the approach considered for the fuel handling area in general. The fuel handling area has been evaluated and determined acceptable for the storage of SNM in a full core load of new fuel. The hazards imposed by the relatively small quantity of

SNM associated with the fission chambers (less than 100 grams), does not challenge the existing Fire Protection Analysis for the new fuel storage. Further, the fission chambers that contain the non-fuel SNM are sealed and are tested periodically to confirm their leak-tightness. Therefore, the capabilities of the fire protection program and the fire protection equipment servicing this area are sufficient to meet the requirements of 10 CFR 70.22(a)(7) and 70.22(a)(8).

Impact on R-COLA

See attached marked-up COLA Part 11 "Special Nuclear Material (SNM) Control and Accounting (MC&A) Program Description" page MC&A-6 and new Appendix A (cover sheet and page MC&A-A1).

Impact on S-COLA

This response is considered standard.

Impact on DCD

None.

the applicable ICA, as required in 10 CFR 74.19(a). A Nuclear Material Transaction Report is completed, as required in 10 CFR 74.15.

6. Internal Control

6.1. Unit of Control

Units of SNM that require control are the items defined in paragraph ~~2.6~~2.5. Each of these units is identified in the material control records by its serial number or other unique identifier (e.g., a physical description of the item) and location, as required in 10 CFR 74.19(a). RCOL2_246_01-10

6.2. Item Control Areas

ICAs are established for physical and administrative control of SNM. The number of ICAs is sufficient to establish control.

6.3. Internal Transfers

Transfers of SNM into, out of, or within an ICA are accomplished only upon written authorization of the SNM custodian or other individual(s) at the plant site responsible for the SNM program.
Written authorization is obtained prior to the movement. All transfers of SNM are documented using a material control record by the responsible person involved in each operation, and the book inventory is updated for the applicable ICA.

6.4. Non-SNM items

Non-SNM items stored with items containing SNM are clearly identified as such to preclude SNM items from being mistaken for non-SNM items. In accordance with the regulatory requirements of 10 CFR 70.22 (a) (4), each application for a 10 CFR Part 70 Special Nuclear Material (SNM) License shall include the name, amount, and specifications (including the chemical and physical form and, where applicable, isotopic content) of the special nuclear material the applicant proposes to use or produce. The radioactive material identified in Appendix A represents nominal values of known non-fuel SNM specifically required for use in each CPNPP US-APWR unit. RCOL2_246_01-10

FSAR Section 12.2 includes the requirements for written procedures that address leak-testing of radioactive sources (byproduct material, source material, and devices that contain SNM, as appropriate). The leak-test will be consistent with 10 CFR 20.1501 survey and monitoring requirements for evaluating the quantities of radioactive material and the potential radiological hazard of the radioactive source.

Appendix A

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Non-Fuel Special Nuclear Material for Use in Each CPNPP US-APWR Unit

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Appendix A

Non-Fuel Special Nuclear Material for Use in Each CPNPP US-APWR Unit

In accordance with the regulatory requirements of 10 CFR 70.22 (a) (4), each application for a 10 CFR 70 Special Nuclear Material (SNM) License shall include the name, amount, and specifications (including the chemical and physical form and, where applicable, isotopic content) of the special nuclear material the applicant proposes to use or produce. The radioactive material identified below represents nominal values of known non-fuel SNM specifically required for use in each CPNPP US-APWR unit:

(a) Element and Mass Number	(b) Chemical or Physical Form	(c) Maximum Amount
Uranium 235 (approx. 93%) 234, 236 & 238 (approx. 7%)	Uranium Oxide in Incore Neutron Detector – Fission Chambers (8 detectors, including 4 spare)	4.4 mg of Uranium per fission chamber Eight fission chambers – total of approx. 35 mg
Uranium 235 (approx. 93%) 234, 236 & 238 (approx. 7%)	Uranium Oxide in Wide Range Neutron Detector – Fission Chambers (4 detectors, including 2 spare)	3 g of Uranium per fission chamber Four fission chambers – total of approx. 12 g