

December 27, 2004

Mr. Robert Link, Manager  
Environmental, Health, Safety and Licensing  
Framatome ANP, Inc.  
2101 Horn Rapids Road  
Richland, WA 99352-0130

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR CLARIFICATION OF  
FRAMATOME ANP, INC., (RICHLAND) LICENSE, CHAPTER 4, "NUCLEAR  
CRITICALITY SAFETY," (TAC L31839)

Dear Mr. Link:

We have completed our review of your application for amendment of Materials License SNM-1227, transmitted by letter dated July 7, 2004, and stated our acceptance by letter dated August 19, 2004.

We understand that the reason for the amendment is that the methodology used to calculate bias and uncertainty is inconsistent with the current license. However, additional information, consistent with the level of detail specified in the Standard Review Plan (NUREG-1520) is necessary to continue our review. The information should be revised to reflect the actual methodology being used. Therefore, the initial technical review has identified some submittal information or technical issues that require additional information. The additional information, specified in the enclosure, should be provided within 30 days of the date of this letter.

Pending additional information which answers the RAI questions, we anticipate completing our review by the end of February 2005. This date could change depending on the findings of our technical review, urgent assignments, or other factors. We will promptly communicate any significant changes to this schedule.

If you have any questions regarding this letter, please contact me at (301) 415-6155 or via e-mail to [MNB@nrc.gov](mailto:MNB@nrc.gov).

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter 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>.

Please note that on October 25, 2004, the NRC suspended public access to ADAMS, and initiated an additional security review of publicly available documents to ensure that potentially sensitive information is removed from the ADAMS database accessible through the NRC's web site. Interested members of the public may obtain copies of the referenced documents for review and/or copying by contacting the Public Document Room pending resumption of public access to ADAMS. The NRC Public Document Room is located at NRC Headquarters in Rockville, MD, and can be contacted at (800) 397-4209 or (301) 415-4737 or [pdr@nrc.gov](mailto:pdr@nrc.gov).

Sincerely,

/RA/

Merritt N. Baker, Project Manager  
Fuel Cycle Facilities Branch  
Division of Fuel Cycle Safety  
and Safeguards  
Office of Nuclear Material Safety  
and Safeguards

Docket No.: 70-1257  
License No.: SNM-1227

Enclosure: Request For Additional Information

R. Link

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Decemeber 27, 2004

Please note that on October 25, 2004, the NRC suspended public access to ADAMS, and initiated an additional security review of publicly available documents to ensure that potentially sensitive information is removed from the ADAMS database accessible through the NRC's web site. Interested members of the public may obtain copies of the referenced documents for review and/or copying by contacting the Public Document Room pending resumption of public access to ADAMS. The NRC Public Document Room is located at NRC Headquarters in Rockville, MD, and can be contacted at (800) 397-4209 or (301) 415-4737 or [pdr@nrc.gov](mailto:pdr@nrc.gov).

Sincerely,

/RA/

Merritt N. Baker, Project Manager  
Fuel Cycle Facilities Branch  
Division of Fuel Cycle Safety  
and Safeguards  
Office of Nuclear Material Safety  
and Safeguards

Docket No.: 70-1257  
License No.: SNM-1227

Enclosure: Request For Additional Information

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**ML050060393**

\*see previous concurrence

OFFICE	FCFB		FCFB		FCFB	
NAME	M. Baker*		J. Muszkiewicz		J. Lubinski	
DATE	12/16/04		12 / 22 /04		12/ 27 /04	

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**Request for Additional Information  
FANP-Richland Validation Amendment**

1. Provide change pages to License Application, Section 4.2.1, containing a reference to (including the date and revision number) and summary description of, either a manual or a documented, reviewed, and approved validation report, for each methodology used to determine subcritical limits at your facility.

10 CFR 70.61(d) requires, in part, that “the risk of nuclear criticality accidents must be limited by assuring that under normal and credible abnormal conditions, all nuclear processes are subcritical, including use of an approved margin of subcriticality for safety.” This requires that calculational techniques used to ensure subcriticality are appropriately validated. NUREG-1520, Section 5.4.3.4.1(7), states “The applicant includes a reference to. . . and summary description of, either a manual or a documented, reviewed, and approved validation report. . . .”

2. Provide change pages to License Application, Section 4.2.1, explaining your method for determining calculational bias  $\Delta k_b$  and uncertainty  $\Delta k_u$ , in sufficient detail to permit an understanding of the methodology.

10 CFR 70.61(d) requires, in part, that “the risk of nuclear criticality accidents must be limited by assuring that under normal and credible abnormal conditions, all nuclear processes are subcritical, including use of an approved margin of subcriticality for safety.” This requires that calculational techniques used to ensure subcriticality are appropriately validated. NUREG-1520, Section 5.4.3.4.1(7), states “The applicant includes a reference to. . . and summary description of, either a manual or a documented, reviewed, and approved validation report . . . The summary description of a reference manual or validation report should have. . . (a) A summary of the theory of the methodology that is sufficiently detailed and clear to allow understanding of the methodology.” This consists of information similar to that removed from the current version of the license application.

3. Provide change pages to License Application, Section 4.2.1, addressing the following topics with regard to validation of your calculational technique, or justify why proposed wording in the license application addresses these topics.

- a) A summary of the area or areas to which the reference manual or validation report applies.
- b) A commitment to apply the methodology only in the area or areas of applicability or provide justifications for applying the methodology outside the area or areas of applicability.

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- c) A commitment to use pertinent computer codes, assumptions, and techniques in the methodology.
- d) A commitment to properly perform the mathematical operations in the methodology.
- e) A commitment to use data based upon reliable and reproducible experimental measurements.
- f) A commitment to use plant-specific benchmark experiments and data derived therefrom to validate the methodology.
- g) A commitment to determine the bias, the uncertainty in the bias, the uncertainty in the methodology, the uncertainty in the data, the uncertainty in the benchmark experiments, and the margin of subcriticality for safety, when using the methodology.
- h) A commitment to use controlled software and hardware, when using the methodology.
- i) A commitment to use a verification process when using the methodology.

10 CFR 70.61(d) requires, in part, that “the risk of nuclear criticality accidents must be limited by assuring that under normal and credible abnormal conditions, all nuclear processes are subcritical, including use of an approved margin of subcriticality for safety.” This requires that calculational techniques used to ensure subcriticality are appropriately validated. NUREG-1520, Section 5.4.3.4.1(7), states “The applicant includes a reference to. . . and summary description of, either a manual or a documented, reviewed, and approved validation report . . .”. NUREG-1520, Section 5.4.3.4.1, goes on to state that the summary description should contain topics (a) through (i) enumerated above.

4. Provide change pages to License Application, Section 4.2.1, explaining in detail how the requirements of ANSI/ANS-8.1-1998, Section 4.3, will be implemented.

10 CFR 70.61(d) requires, in part, that “the risk of nuclear criticality accidents must be limited by assuring that under normal and credible abnormal conditions, all nuclear processes are subcritical, including use of an approved margin of subcriticality for safety.” This requires that calculational techniques used to ensure subcriticality are appropriately validated. NUREG-1520, Section 5.4.3.4.1(5), states that the applicant “commits to ANSI/ANS-8.1-1983 as it relates to methodologies.” Your proposed words in Sections 4.2.1 and 4.2.7 state that validation shall be conducted in accordance with Section 4.3 of ANSI/ANS-8.1-1998. However, NUREG-1520, Section 5.4, states that “If an applicant intends to conduct activities to which a standard applies and the standard has been endorsed by an NRC Regulatory Guide, then a commitment to comply with all the requirements (i.e., “shall”) of a standard is necessary but may not be sufficient to meet the acceptance criteria. Notwithstanding a general commitment to a standard, the applicant should clarify its intended compliance with those requirements in the standard that are expressed only as general principles by more specific commitments and descriptions in the application.”

5. Remove the citation to Reference 23 from License Application Section 4.2.8, or provide the appropriate reference to this in Chapter 4 of the License Application.

10 CFR 70.61(d) requires, in part, that “the risk of nuclear criticality accidents must be limited by assuring that under normal and credible abnormal conditions, all nuclear processes are subcritical, including use of an approved margin of subcriticality for safety.” This requires that calculational techniques used to ensure subcriticality are appropriately validated. Section 4.2.8 of the License Application, states that these references are “currently used by FANP in performing criticality safety analyses.” Reference 23 is cited in the current version of License Application Section 4.2.1, but not in the proposed revision. Therefore, there is no explanation as to how this reference will be used in performing criticality safety analyses. This information is needed for a clear understanding of your validation methodology.

6. State whether your validation report will indicate the computer programs used, the operations, recipes for choosing code options where applicable, cross section sets, and any numerical parameters necessary to describe input.

Regulatory Guide 3.71 has endorsed ANSI/ANS-8.1-1983, but has not endorsed the 1998 version of this standard. NUREG-1520, Section 5.4.2, states: “If an applicant commits to an unendorsed standard, then the applicant needs to demonstrate in the application why the unendorsed standard should be acceptable to NRC.” With regard to validation, the 1998 version of ANSI/ANS-8.1 omits the aforementioned items which were present in the (endorsed) 1983 version.

7. Revise your commitment to ANSI/ANS-8.5 in License Application Section 4.2.4.1 to indicate to which version of the standard you are committing.

SRP Section 5.4.3.4.2(15)(a) contains the acceptance criterion that “When using borosilicate glass raschig rings, the applicant commits to ANSI/ANS-8.5-1995.” A different version of this standard may not be acceptable to the NRC.