



September 27, 2001
DCS-TNW0109-14
RMG-01-044

Mr. Timothy Kobetz
Project Manager, Spent Fuel Project Office
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Subject: TN West Comments on the Preliminary Certificate of Compliance and Safety Evaluation Report for Standardized Advanced NUHOMS[®] System (TAC No. L23203).

Reference: Timothy Kobetz to Rob Grenier letter dated September 21, 2001; Preliminary Certificate of Compliance and Safety Evaluation Report for Standardized Advanced NUHOMS[®] System (TAC No. L23203).

Dear Mr. Kobetz:

Transnuclear West Inc. (TN West) has reviewed the reference document. Attachments 1 and 2 provide a summary of our comments resulting from this review.

Attachment 1 identifies several significant issues of concern. TN West requests an opportunity to discuss these issues with the staff to reach a satisfactory resolution prior to the initiation of "rule making" process for the reference document.

Please contact Mr. U. B. Chopra (510-744-6053) or me (510-744-6020) if you require any additional information in support of this submittal.

Sincerely,

Robert M. Grenier
President and Chief Operating Officer

Docket 72-1029

Attachments: As stated.

cc: File: SCE-01-0007.01

Transnuclear West Inc.
39300 Civic Center Drive, Suite 280, Fremont, CA 94538
Phone: 510-795-9800 • Fax: 510-744-6002

NMSS01Public

ATTACHMENT 1 to RMG-01-044

TN WEST COMMENTS WHICH REQUIRE RESOLUTION

Item No.	Doc	Page	Section	Para	Type	Comment	Suggested Revision
1	SER	4-1	4.1	1 st	Correction	<p>Revise the last two sentences of this paragraph to make the heat load limits consistent with Tech Spech 2.1.</p> <p>Basis: Tech Specs 2.1 and TNW analysis allow 13.706 kW for MOX fuel and 14 kW for UO2 Fuel.</p>	<p>Revise the last two sentences of this paragraph to read <i>“While the applicant has analyzed several components of the Standardized Advanced NUHOMS® System for higher heat loads in the SAR, the staff’s thermal review as stated in this SER does not approve the use of any of the components of the Standardized Advanced NUHOMS® System, when loaded with MOX zircaloy clad fuel, for heat loads higher than 13.706 kW. For UO2 stainless steel clad fuel, the maximum allowed heat load is 14 kW. Should the applicant request approval of heat loads higher than these for the storage of spent fuel in a Standardized Advanced NUHOMS® – 24PT1 DSC under this C of C, the staff will conduct an independent review of a separate submittal at that time.”</i></p>
2	SER	4-4	4.3	2 nd	Correction	<p>Revise 1st sentence limiting DSC total heat load to be consistent with that for stainless clad fuel as discussed later in this sentence.</p> <p>Basis: For stainless clad fuel the total heat load analyzed and specified in the Tech Spec is 14 kW.</p>	<p>Revise first sentence to read <i>“to dissipate 14.0 kw, which....”</i></p>
3	SER	4-5	4.3.2	1 st	Concern	<p>The discussion of the insolation value used does not acknowledge the supporting basis for the value used that was submitted in the associated RAI response and a revision to Section 4.4.2.2 of the SAR (SAR Rev. 3).</p> <p>Basis: RAI response and SAR Section 4.4.2.2 revision.</p>	<p>Insert the following sentence after the fourth sentence ending in <i>“...Fundamentals Handbook”</i>:</p> <p><i>“The applicant provided a revision to the SAR substantiating the basis for the absorbed solar insolation value used in Revision 3 of the SAR. In addition, the applicant provided results of sensitivity analysis which showed a small rise in maximum concrete temperature.”</i> Delete last sentence of this paragraph.</p>

ATTACHMENT 1 to RMG-01-044

TN WEST COMMENTS WHICH REQUIRE RESOLUTION

Item No.	Doc	Page	Section	Para	Type	Comment	Suggested Revision
4	SER	4-8	4.4.1.2	2 nd	Correction	<p>The fuel effective conductivity is based on test data, as discussed in SAR Section 4.2k, and therefore incorporates the effects of radiation, conduction and convection as they are present in the experimental configuration.</p> <p>Basis: SAR Section 4.2k.</p>	<p>Delete the last 2 sentences and add: <i>“Fuel effective conductivity is based on test data, as discussed in SAR section 4.2k, and therefore includes the effects of radiation, conduction and convection, as present in the test configuration.”</i></p>
5	SER	4-10	4.5.2.1	2 nd	Correction	<p>Both heat load limits, 14kW and 13.706 kW should be specified.</p> <p>Basis: Tech Specs and TNW analyses support both heat loads.</p>	<p>Delete the last sentence and add a new one which reads <i>“The applicant’s analysis of the fuel cladding temperatures for the maximum heat load of 13.706kW (with zircaloy clad MOX fuel) and a maximum heat load of 14kW (all stainless clad UO2 fuel assemblies), showed that the stainless steel and zircaloy clad fuel remain below their acceptable temperatures (See SER Table 4-1).”</i></p>
5a	SER	4-15	4.5.4.2	4	Clarification	<p>Does the model permit gas flow and convective heat transfer in the flow channels labeled 1 through 29 in Figure 4.2(a)? What is considered the lateral direction? What is the assumption for the vertical direction?</p>	<p>Clarify what is meant by the term “flow channel” and the statement that “this model did not consider natural convection in the lateral direction.”</p>
6	SER	4-20	4.5.4		Clarification	<p>TNW requested detailed information regarding the COBRA analysis performed by the NRC staff as confirmatory analysis to understand the model used by the staff. Will the staff be providing additional information beyond that provided in the SER? If not, additional information regarding the treatment of convective heat transfer in the COBRA analysis is requested as well as references to the specific spent fuel cask test configurations with which the code has been benchmarked.</p> <p>Basis: Additional information is required in order for TNW to understand the model used by the staff.</p>	<p>Provide additional information in the SER or via a separate submittal.</p>

ATTACHMENT 1 to RMG-01-044

TN WEST COMMENTS WHICH REQUIRE RESOLUTION

Item No.	Doc	Page	Section	Para	Type	Comment	Suggested Revision
7	SER	4-20	4.5.4.3 "Comparison of ...", should be Section 4.5.4.4		Concern	This section appears to be unnecessary. A complete analysis of the differences between the two codes has not been performed by the staff or by TNW, therefore characterization of the HEATING analysis as "non-conservative" is not adequately supported. The conclusions provided may be based on the additional conservatism in the COBRA analysis. <i>See Note 1 at the end of Table 1 for further discussion..</i>	Delete this section.
8	SER	4-21	4.5.5	1 st	Concern	As discussed with respect to Section 4.5.4.3 (4.5.4.4) above, no conclusive determination that the HEATING analysis is "non-conservative" has been made. Benchmarking of the HEATING code may be performed against any applicable test data, and not be limited to INEEL and PNNL data. The INEEL and PNNL data are for vertical storage casks, whereas for the Advanced NUHOMS system, horizontal test data would provide a better correlation. <i>See Note 1 at the end of Table 1 for further discussion..</i>	Delete "; however the staff finds..." to the end of the paragraph.
9	SER	5-3	5.2.1	Last	Clarification	The last statement in this section states that "The advanced NUHOMS System is not authorized to store waste classified as "Greater Than Class C". It is our understanding that this does not preclude a utility possessing a 10CFR50 license from storing GTCC waste on the same ISFSI as the Advanced NUHOMS system using some of the same components such as the module or canister shell, as long as this activity is covered under its Part 50 license. Basis: Storage of GTCC waste on the same ISFSI under the Part 50 license is not required to be authorized under this Part 72 license.	None required, clarification requested.

ATTACHMENT 1 to RMG-01-044

TN WEST COMMENTS WHICH REQUIRE RESOLUTION

Item No.	Doc	Page	Section	Para	Type	Comment	Suggested Revision
10	SER	5-4	5.3	1 st	Concern	<p>It is not clear why a 3-D analysis would be required for "higher source terms".</p> <p>Basis: The implication that 3-D shielding analysis would be required for future applications which use higher source terms does not appear to be substantiated by the NRC's confirmatory analysis which states in section 5.4.9 that "The staff's calculated dose rates were in general agreement with the SAR values and were somewhat lower due to modeling assumptions used in SAS4, and slightly lower source terms,...".</p>	<p>Replace the last 2 sentences of this paragraph with a new sentence which reads "<i>The staff considers this 2-D code acceptable for this application based on the confirmatory analyses performed, see Sections 5.2.2.3 and 5.4.9 of this SER.</i>"</p>
11	SER	5-5	5.4.1		Concern	<p>It is not clear why a 3-D analysis would be required for "higher source terms".</p> <p>Basis: The implication that 3-D shielding analysis would be required for future applications which use higher source terms does not appear to be substantiated by the NRC's confirmatory analysis which states in section 5.4.9 that "The staff's calculated dose rates were in general agreement with the SAR values and were somewhat lower due to modeling assumptions used in SAS4, and slightly lower source terms,...".</p>	<p>Replace the last 2 sentences of this paragraph with a new sentence which reads "<i>The staff considers this 2-D code acceptable for this application based on the confirmatory analyses performed, see Sections 5.2.2.3 and 5.4.9 of this SER.</i>"</p>

Note 1

Comment No. 7 and 8: In the TNW model, each fuel assembly region is homogenized and the effective material thermal conductivity used for the homogenized regions is based on experimental data that correlate with the maximum fuel temperature. The middle of the active fuel region along the length of the fuel assembly is modeled and provides the maximum fuel region temperatures.

ATTACHMENT 1 to RMG-01-044

TN WEST COMMENTS WHICH REQUIRE RESOLUTION

TNW model of the fuel assembly region included 9 nodes per fuel assembly in the radial plane and 5 planes in the axial direction for a total of 45 nodes where temperatures are calculated for the hottest fuel assemblies rather than one as stated in the preliminary SER Section 4.5.4.3 (4.5.4.4). Note that even the model that is shown for the confirmatory analysis SER Section 4.5.4 appears to use a total of 70 rods to represent 180 fuel rods.

The maximum temperature in the DSC in the TNW model does not occur on the spacer disc/guide sleeve as indicated in the preliminary SER Section 4.5.4.3 (4.5.4.4). The maximum temperature occurs in the fuel assembly near the center of the DSC.

The HEATING7 code is used by TNW to calculate the fuel cladding temperature. NUREG-1536, in the Thermal Evaluation Section, page 4-7 under "Computer Programs", states "The applicant should use well-verified and validated computer code used to perform the thermal evaluation. The two codes most frequently encountered in SARs are ANSYS and HEATING". The SER states that "Finally, the applicant's thermal code has not been validated against actual fuel temperature data, and therefore cannot be considered reliable for predicting fuel clad temperatures given the current fuel parameters." In fact, the use of the HEATING code and the modeling approach of homogenizing the fuel assembly region were verified against actual test data for the NUHOMS-07P design in the report "NUHOMS Modular Spent-Fuel Storage System: Performance Testing" EPRI NP-6941/PNL-7327, dated September 1990. This test was performed for a NUHOMS horizontal storage system whereas the tests at INEEL seem to include only vertical storage casks.

ATTACHMENT 2 to RMG-01-044

MINOR COMMENTS (CLARIFICATIONS, CORRECTIONS, EDITORIAL ETC)

Item No.	Document	Page	Section	Para	Type	Comment	Suggested Revision
1	CoC	1	Conditions		Correction	Revise as suggested. No Appendix A included with CoC.	Change Appendix A to Attachment 1.
2	CoC	1	Conditions		Correction	Appendix A or B is not included, Approved Contents is contained in Attachment 1, Tech. Specs.	Change "Appendix A (Technical Specifications) and Appendix B (Approved Contents and Design Features)" to "Attachment 1 (Technical Specifications including Approved Contents and Design Features).
3	CoC	1	1.a	Title	Correction	Revise as suggested.	Change 24PT-1 to 24PT1.
4	CoC	2	1.b	3rd	Correction	Location of AHSM penetrations is incorrect.	Revise "at the top and bottom of the side walls" to "at front and top"
5	CoC	2	1.b	4th	Correction	The OS197 Transfer Cask is not required to meet, and does not meet all requirements of, NUREG-0612 and ANSI N14.6. Basis: See the following correspondence regarding this issue: VECTRA to NRC letter JWA-95-008, Axline to Sturz, dated 5/25/95 and NRC to VECTRA response, Travers to Axline, dated 7/21/95.	Delete first sentence. Revise 2nd sentence from "It is used..." to "The TC is used..."
6	CoC	3	6		Correction	Revise as suggested.	Change "the Appendix" to "Attachment 1".
7	CoC	3	7		Correction	Revise as suggested.	Change "the Appendix" to "Attachment 1".
8	CoC	4	9		Correction	Revise as suggested.	Change "the Appendix" to "Attachment 1".
9	TS, Att. 1	ii	Table of Contents	2.2.1, 2.2.2, 2.2.3	Correction	Change numbering of sections to 2.2.a, 2.2.b, 2.2.c and delete from Table of Contents.	Delete 2.2.1, 2.2.2 and 2.2.3 from Table of Contents.

ATTACHMENT 2 to RMG-01-044

MINOR COMMENTS (CLARIFICATIONS, CORRECTIONS, EDITORIAL ETC)

Item No.	Document	Page	Section	Para	Type	Comment	Suggested Revision
10	TS, Att. 1	2-2	2.2	2.2.1, 2.2.2, 2.2.3	Correction	Change numbering of sections to 2.2.a, 2.2.b, 2.2.c and delete from Table of Contents.	Change 2.2.1 to 2.2.a, 2.2.2 to 2.2.b and 2.2.3 to 2.2.c
11	TS, Att. 1	2-4	Table 2-2	11 th , 12 th and 15 th rows	Clarification	Revise as suggested.	11 th row – “%wt” should be “weight %”. 12 th row – “Theoretical Density” should be “Fuel Stack Height Theoretical Density”. 15 th row – Average U content, not needed, delete row.
12	TS, Att. 1	2-6	Table 2-4	Last general note	Clarification	Revise as suggested.	“w/o” should be “weight %”.
13	TS, Att. 1	3-6	3.1.3.B.1		Correction	SR 3.0.1 reference does not appear to be appropriate in this required action.	Delete “SR 3.0.1” or clarify its intended applicability.
14	TS, Att. 1	4-1	4.2.2	1 st	Clarification	Clarify that Table and Chapter references are for SAR.	Insert “FSAR” in front of “Table 3.2-1” and “Chapter 2”.
15	TS, Att. 1	4-2	Figure 4-1		Clarification	Add Note to figure indicating that all dimensions are in inches.	Add the following to the figure “Note: all dimensions in inches”.
16	TS, Att. 1	5-4	5.2.5.b)	1 st	Clarification	Clarify terminology.	Revise third sentence to read “..., the temperature differential is still greater than 100 °F, ...”
17	TS, Att. 1	5-5	5.2.5.c)	3 rd	Clarification	Clarify visual inspection requirement. Basis: Visual inspection is to be performed to ensure that vent SCREENS are not blocked. The screens protect the vents from blockage.	Change “...the air vents...” to “...the air vent screens...” in two places.
17a	TS, Att. 2	B 3-8	B3.1.1	LCO	Correction	Revise as requested. Vacuum pressure should be less than or equal to 3 torr.	Change <3 torr to ≤ 3 torr.
17b	TS, Att. 2	B 3-11	B3.1.2	ACTIONS	Correction	Revise as requested. TS 3.1.2 is for helium backfill only, which is independent of DSC heat load.	Delete second sentence. Revise the third sentence to read “These completion times are imposed to ensure...”

ATTACHMENT 2 to RMG-01-044

MINOR COMMENTS (CLARIFICATIONS, CORRECTIONS, EDITORIAL ETC)

Item No.	Document	Page	Section	Para	Type	Comment	Suggested Revision
18	SER	Cover Sheet and page 1-1 title			Correction	Delete redundant word, "SYSTEM", in title.	Revise to read "Transnuclear West Standardized Advanced NUHOMS Horizontal Modular Storage System for Irradiated Nuclear Fuel".
19	SER	1-2	1.1.1	1 st	Correction	Revise as suggested. Clarify the term "inserts". Basis: MOX fuel may be stored with or without control components.	Revise 2 nd sentence to read " <i>with or without inserts</i> ".
20	SER	1-2	1.1.1	1 st	Clarification	Revise as suggested. Basis: Tech Spec 2.1.	Insert the following after the third sentence of the paragraph " <i>The DSC may also include upto a maximum of two empty slots as necessary to accommodate fuel loading requirements.</i> "
21	SER	1-2	1.1.1	1 st	Editorial	Revise last sentence as suggested.	Revise last sentence to read "...two slots in the 24PT1-DSC <i>may</i> be filled with..."
22	SER	1-2	1.1.1	2 nd	Clarification	Revise as suggested. Basis: Shield plugs are not welded to any other component of the DSC. The bottom shield plug is not inside the confinement boundary.	Revise 2 nd sentence to read " <i>Shield plugs are provided at the top and bottom of the DSC for radiological shielding.</i> "
23	SER	1-2	1.1.2	1 st	Editorial	Revise as suggested.	Revise 4 th sentence to read "The function of the AHSM is <i>to</i> ensure that normal conditions and postulated accidents, including..."
24	SER	1-3	1.1.3	1 st	Editorial	Revise 1 st two sentences as suggested.	Insert "provides" after "NUHOMS System" in the first sentence. Delete redundant "the" in the second sentence.
25	SER	1-4	1.3.2	1 st	Editorial	Revise as suggested.	Revise to read "...24PT1-DSC <i>may</i> store upto..."
26	SER	1-4	1.5	F1.3	Editorial	Revise as suggested.	Revise F1.3 to say "...System <i>are provided in SAR</i> Sections 1, 2, and 6".
26a	SER	2-1	2.2.1	2	Editorial	Revise as suggested.	The words "function" and "initial" are misspelled.

ATTACHMENT 2 to RMG-01-044

MINOR COMMENTS (CLARIFICATIONS, CORRECTIONS, EDITORIAL ETC)

Item No.	Document	Page	Section	Para	Type	Comment	Suggested Revision
26b	SER	2-2	2.3.1	1 st	Editorial	Revise as requested.	Revise last sentence to read "...to ensure <i>that</i> the gas cannot escape."
26c	SER	2-2	2.3.4	1 st	Editorial	Revise as requested	Change HSM to AHSM.
27	SER	2-3	2.4		Editorial	Revise as suggested.	Change "as" to "is" at the beginning of the last line.
28	SER	3-1	3.0	1 st	Editorial/ Clarification	Revise as suggested.	Revise third sentences to read "For the on-site transfer system used with the Advanced Standardized NUHOMS System, the transfer cask, OS197 TC, was previously reviewed and approved by the staff with the NUHOMS [®] -24P DSC (<i>Docket 72-1004</i>). The evaluation only considers the transfer cask system to the extent that <i>it has not been previously...</i> "
29	SER	3-1	3.0	2 nd	Editorial	Revise as suggested.	Change "basement" to "basemat" in 2 nd sentence.
30	SER	3-1	3.0	3 rd	Editorial	Revise as suggested.	Revise 3 rd from last sentence to say "... <i>and</i> providing for testing of other appropriate means..."
31	SER	3-2	3.1	1 st	Editorial	Revise as suggested.	Revise 2 nd sentence to read "... , which allows storage of..."
32	SER	3-4	3.1.1.2	3 rd	Correction	Delete minimum pad thickness. Basis: Each general licensee needs to determine minimum pad thickness based on the applicable site specific criteria.	Delete "(3' minimum thickness)".
33	SER	3-4	3.1.2.1.1	1 st	Clarification	Weight of DSC with FF cans is 79,400 Basis: SAR Table 3.2-1, last note.	Revise 3 rd sentence to read "The weight of the ...24PT1-DSC is 79,400 pounds ...".
34	SER	3-5	3.1.2.1.1	2 nd	Correction	Design value of AHSM is 320,000 lbs.	"320,00" should be "320,000".
35	SER	3-5	3.1.2.1.3		Correction	The pressure test is performed at the fabricator shop and does not include either of the two top cover plates. Basis: Code Case N-595-1.	Revise 2 nd sentence to read "...24PT1-DSC <i>top</i> cover plates in place."

ATTACHMENT 2 to RMG-01-044

MINOR COMMENTS (CLARIFICATIONS, CORRECTIONS, EDITORIAL ETC)

Item No.	Document	Page	Section	Para	Type	Comment	Suggested Revision
36	SER	3-6	3.1.2.1.7		Editorial	Revise as suggested.	Delete redundant "of the" in 3 rd sentence.
37	SER	3-7	3.1.2.1.10		Correction	Revise as suggested.	Reference to Section K.11 should be Section 11.2.2.
38	SER	3-7	3.1.2.1.11		Correction	Revise as suggested.	"design" in the last line should be "analysis".
39	SER	3-8	3.1.3		Correction/ Clarification	Revise as suggested. The OS197 also allows for the use of a water neutron shield in lieu of NS-3.	"AHMS" and "HMS" should be "AHSM" and "HSM". Add the following prior to the 3 rd sentence from the end of the paragraph " <i>The OS197 also allows for the use of a water neutron shield in lieu of NS-3 for neutron shielding.</i> "
40	SER	3-9	3.1.3	4 th	Editorial	Revise as suggested.	Revise the next to last sentence to read "...Advanced NUHOMS system, credit is taken for..."
41	SER	3-10	3.2.1	2 nd and 3 rd	Editorial/ Correction	Revise as suggested.	Figure "3.6.6" should be "3.6-6" in the third paragraph. "21PT1-DSC" should be "24PT1-DSC" in the fourth paragraph.
42	SER	3-10	3.2.2	2 nd and 3 rd	Correction	Last sentence of 2 nd paragraph is incorrect. Reference to Table 3.6-12 at the end of the 3 rd paragraph is incorrect.	Revise last sentence of 2 nd paragraph to read "There is no significant loading resulting from the pressure loads <i>for the basket assembly, therefore, the 39 loading combinations were somewhat simplified</i> ". Delete reference to Table 3.6-12 in third paragraph; this table does not provide loading combinations.
43	SER	3-13	3.3.2	Item j	Correction	Delete item j, it is redundant to item g.	Delete item j, it is redundant to item g.
44	SER	3-14	3.3.2	Next to last	Correction	Incorrect reference to Table 3.1-12 (should be Table 3.1-11).	Change "Table 3.1-12" to "Table 3.1-11".

ATTACHMENT 2 to RMG-01-044

MINOR COMMENTS (CLARIFICATIONS, CORRECTIONS, EDITORIAL ETC)

Item No.	Document	Page	Section	Para	Type	Comment	Suggested Revision
44a	SER	3-14	3.3.3	2 nd	Correction	Delete second sentence "Stress allowables are based on the same criteria as is the 24PT1-DSC shell". Basis: The 24PT1-DSC shell assembly stress allowables are based on Subsection NB. Basket components stress allowables are based on NG or NF.	Change second sentence to read " <i>Stress allowables for basket components are based on Subsection NG or Subsection NF of the ASME Code, as appropriate</i> ".
45	SER	3-14	3.3.3	1 st	Correction	The reference in the next to last sentence should be for the inner top cover plate not the outer bottom cover plate.	Change "outer bottom" to "inner top" in the next to last sentence.
46	SER	3-15	3.5	2	Clarification	The referenced code edition is not the code edition utilized in the design of the 24PT1-DSC.	Change to say "...Division 1, 1992 including the 1994 Addenda."
46a	SER	3-15	3.5	4	Clarification	The referenced code edition is not the code edition utilized in the design of the AHSM.	Change "ACI 318-99" to "ACI 318-97".
47	SER	4-1	4.0		Editorial	Revise as suggested.	Revise first sentence to read "...power plants in areas with high seismic activity". Also, change "ASHM" to "AHSM" in the same sentence.
48	SER	4-1	4.1	2 nd	Correction	618 F in second sentence should be 604 F.	Change "618 F (326 C) to "604 F (318 C)".
49	SER	4-6	4.3.4		Correction	Incorrect reference to Table 4-1 (should be Table 4-2).	Revise last sentence to read "...insolation values outlined in Table 4-2"
50	SER	4-7	4.4.1	2 nd	Editorial	Revise as suggested.	Revise second last sentence to read "A discussion of the staff's"
51	SER	4-9	4.4.3		Correction	Revise as suggested.	Reference last sentence to read "... are summarized in SER Table 4-2".
52	SER	4-9	4.4.3.2		Correction	The blocked vent condition uses a boundary temperature of the off-normal condition. Reference to Table 4-1 should be Table 4-2.	Revise the second sentence to read "...include the DSC off-normal condition.....in SER Table 4-2".

ATTACHMENT 2 to RMG-01-044

MINOR COMMENTS (CLARIFICATIONS, CORRECTIONS, EDITORIAL ETC)

Item No.	Document	Page	Section	Para	Type	Comment	Suggested Revision
53	SER	4-9	4.4.3.3		Typo	Revise as suggested.	Change "bask" to "basket" in the second sentence.
54	SER	4-10	4.5.2.1	2 nd	Correction	Revise as suggested.	Reference to Section 4.2 should be Section 4.1.
55	SER	4-11	Table 4-3	Note 3	Editorial	Revise as suggested.	Revise Note 3 to read "Applicant will conduct testing..."
56	SER	4-14 to 4-20	4.5.4	Various	Editorial	Revise as suggested.	Change DSC designation from "24PT-1 DSC" to 24PT1-DSC" to match previous sections of SER.
56a	SER	4-20	4.5.4.3	1 st	Correction	Revise as requested.	Revise fifth sentence to read "...a varying DSC shell temperature based on a 16 kw heat load."
57	SER	4-20	4.5.4.3		Editorial	The document contains two paragraph 4.5.4.3 sections	Change section number for second 4.5.4.3 to 4.5.4.4
58	SER	4-22	4.7	8	Correction	Revise as suggested.	Date for Reference 8 should be 1995.
58a	SER	5-1	5.0	2 nd	Editorial	Revise as suggested.	Revise last sentence to say "application" instead of amendment.
58b	SER	5-1	5.1.1	2 nd	Correction	Change the description of neutron absorbing material, NS3, to delete the word polymer. NS3 is not a polymer.	Change last sentence to say "... 2 inches of neutron absorbing material, NS3..."
58c	SER	5-2	5.2.1	2 nd	Correction	Change the description of the contents authorized to match the Tech Specs.	Revise the first sentence to say "... with the remaining assemblies intact WE 14x14 SC..."
59	SER	5-4	5.3.1	1 st	Correction	Revise as suggested. Basis: Not appropriate for PWR fuel payload. Basket materials are neglected in some models but not others (See SAR Chapter 5).	Delete the 2 nd sentence.
60	SER	5-6	5.4.4		Correction	Revise as suggested.	Revise first sentence to read " Chapter 11 of the SAR .."
61	SER	5-7	5.4.8	1 st	Correction	Revise as suggested. Basis: See Tables 10.2-1 to 10.2-5 of the SAR.	Distances specified in the 2 nd sentence should be 6.1 to 500 meters (not 6 to 600 meters).

ATTACHMENT 2 to RMG-01-044

MINOR COMMENTS (CLARIFICATIONS, CORRECTIONS, EDITORIAL ETC)

Item No.	Document	Page	Section	Para	Type	Comment	Suggested Revision
62	SER	6-2	6.0	4.a, c	Correction	Revise as suggested. Basis: Although not credited in this application burnup (item a) may be credited in criticality analysis per associated ISG.	Delete item 4.a and renumber the remaining items. Change item 4.3 to 4.b.
63	SER	6-2	6.1	3 rd	Correction	Revise as suggested.	Revise second sentence to read "TSs 4.2.3 and 4.2.4 require..."
64	SER	6-3	6.2	1 st	Correction	Revise as suggested.	Revise third sentence to read "...listed in SAR Sections 2.1.1 and 12.2.1.b."
65	SER	6-7	6.4.2	Table	Correction	Revise as suggested. Basis: SAR Table 6.1-1.	0.8644 with sigma of 0.0011 value should be 0.8641 with sigma of 0.0012. 0.9071 value should be 0.9086.
66	SER	6-8	6.5		Correction	Revise as suggested.	Reference to Revision 1 of the SAR should be Revision 5.
67	SER	7-1	7.1	1 st	Correction	Revise as suggested.	Revise second sentence to read "...identical to the FO and FC DSCs licensed by...."
68	SER	7-1	7.1	2 nd	Correction/ Clarification	Revise as suggested. Basis: Although some portions of the top and bottom closure assemblies are fabricated from 304 SS, some are fabricated from 316 SS. The outer bottom cover plate is not redundant and is designed in accordance with Code Case N-595-1.	Revise first sentence to read "...SAR Sections 1.2.1.1, 2.5.1,....." Revise second sentence to read "...drain system (also fabricated from <i>stainless steel</i>)", and the associated welds." Change "The outer top and bottom cover plates provide redundant sealing..." to "The outer top cover plates provide redundant sealing" in the 4 th sentence.
68a	SER	7-2	7.1	4th	Correction	Revise as suggested.	Revise last sentence to read "...with Subsection NB of the ASME Code...."
69	SER	7-2	7.1	5th	Correction	Leakage testing at the fabricator does not include the inner top cover per Code Case N-595-1.	Revise first sentence to read "...finished shell and the inner <i>bottom</i> cover plate at the fabricator;....".
70	SER	8-1	8.1.4		Correction	Revise as suggested.	Reference to "61BT" should be "24PT1", 2 places.
71	SER	8-2	8.2	1 st	Correction	Revise as suggested.	Reference to Section K.11 should be Chapter 11.

ATTACHMENT 2 to RMG-01-044

MINOR COMMENTS (CLARIFICATIONS, CORRECTIONS, EDITORIAL ETC)

Item No.	Document	Page	Section	Para	Type	Comment	Suggested Revision
72	SER	9-1	9.1.2		Correction	Leakage testing at the fabricator is performed for the shell and the inner <i>bottom</i> cover plate only. Basis: Code Case N-595-1.	2 nd sentence change "inner cover" to "inner <i>bottom</i> cover".
73	SER	9-2	9.1.3	Next to last	Correction	Revise as suggested.	Change "61BT" and "21PT" to 24PT1. Also, in the same sentence, revise the term "one square centimeter" to " <i>approximately</i> one square centimeter".
74	SER	9-3	9.1.4		Editorial	Revise as suggested.	Revise first sentence to read "...material <i>is</i> not tested..."
75	SER	9-3	9.3	2, 3	Correction	References 2 and 3 are not used in the SER text.	Delete references 2 and 3.
76	SER	10-1	10		Editorial	Revise as suggested.	In the last sentence add "in the" between "provided" and "Standardized".
77	SER	10-2 & 10-3	10.1 & 10.5	7 th bullet & 1 st paragraph	Correction	Revise as suggested. Basis: Draining of the cask is not required for the 24PT1-DSC.	Delete "(except when drained to use the crane)" from the 7 th bullet of Section 10.1 and delete the next to last sentence for the 1 st paragraph of Section 10.5.
78	SER	10-3	10.5	1 st	Clarification	Revise as suggested.	Revise the 2 nd sentence of the paragraph to read "The overall ALARA requirements are discussed in the Standardized FSAR (<i>Docket 72-1004</i>) and were not reviewed for this <i>application</i> ."
79	SER	11-2	11.2.3	1 st	Editorial	Revise as suggested.	Revise 3 rd sentence to read "...occurrence of this type of accident...."
80	SER	11-3	11.2.5	1 st	Correction	Revise as suggested.	4 th sentence, change "A cask drop" to "A cask end drop"
81	SER	11-3	11.2.6	1 st	Clarification	Revise as suggested.	Revise first sentence to read "...fuel tank of the <i>transfer/support equipment</i> with an engulfing fire ..."
82	SER	11-4	11.2.8	1 st	Clarification	Revise as suggested.	Add "against sliding" to the end of the 2 nd sentence.
83	SER	11-4	11.2.9.1	3 rd	Editorial	Revise as suggested.	Add "that" between "analyses" and "determine" in the last sentence.

ATTACHMENT 2 to RMG-01-044

MINOR COMMENTS (CLARIFICATIONS, CORRECTIONS, EDITORIAL ETC)

Item No.	Document	Page	Section	Para	Type	Comment	Suggested Revision
84	SER	11-5	11.2.9.2.2		Correction	Specify the thickness of the top shield and the rear and end shield walls.	Revise second sentence to read "...5-foot thick concrete top shield, 3-foot thick rear and end shield walls,..."
84a	SER	11-6	11.2.9.3.1		Clarification	Clarify the last sentence " Both seismic excitations are defined at the free surface, but are applied at the base of the soil foundation in the coupled model". Basis: It appears to be in conflict with the procedure described in 11.2.9.3.4 where the motion at the base of the model is obtained by a deconvolution process.	Either delete the last sentence or make it consistent with 11.2.9.3.4.
85	SER	11-7	11.2.9.3.2		Correction	Two sections numbered 11.2.9.3.2 have been included.	Change the second 11.2.9.3.2 to 11.2.9.3.3.
86	SER	11-7	11.2.9.3.4		Correction	Revise as suggested.	Change reference at end of section to 11.2.9.3.3.
87	SER	11-8	11.2.9.4.e		Editorial	Revise as suggested.	Change "sensitive" to "sensitivity".
88	SER	11-9	11.2.10	2 nd	Correction	This paragraph is not consistent with SAR.	Replace paragraph with the following " <i>Each exposed component of the AHSM is specifically designed to withstand tornado-generated missiles as discussed in the preceding paragraphs. Loss of structural bending strength of the shield wall(s) due to tornado missile impact, should it occur, is acceptable and does not affect the safe operation of the AHSM. Recovery from this event can be performed in a planned and deliberate manner to replace the shield wall(s), or removal of the AHSM from service. At no time is there a danger of a release of radioactive materials to the general public.</i> "

ATTACHMENT 2 to RMG-01-044

MINOR COMMENTS (CLARIFICATIONS, CORRECTIONS, EDITORIAL ETC)

Item No.	Document	Page	Section	Para	Type	Comment	Suggested Revision
89	SER	11-9	11.3	F11.2	Correction	Revise as suggested.	Revise to read "The spacing of casks is discussed in Sections 1 and 11 of the ..."
90	SER	11-10	11.4	Ref. 5	Clarification	Revise as suggested.	The drawings referenced are not part of the application. This reference should be to the SAR AHSM drawing.
90a	SER	12-1	12.0	2 nd	Editorial	Revise as suggested.	Add a space between the terms "instruments" and "and".
91	SER	12-1	12.2	1 st	Correction	Revise as suggested.	Change "appendix" to "attachment" in the 2 nd sentence. Change "Approved Contents" to "Fuel to be Stored" in the second bullet.
92	SER	14-1	14.2	3 rd	Correction	Revise as suggested.	Change "[cask designation]" to "Advanced NUHOMS System".