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Secretary
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DOCKET NUMBER
PROPOSED RULE **PR** 72
(65FR3397)

Attention: Rulemakings and Adjudications Staff

Subject: Rulemaking Comments on the NAC International Universal Multi-Purpose Canister Storage (NAC-UMS) System

- References:
1. U.S. Nuclear Regulatory Commission Memorandum, Susan F. Shankman to Catherine Haney, dated November 1, 1999
 2. Safety Analysis Report for the UMS Universal Storage System, Revision 2, NAC International, dated October 26, 1999 (Docket No. 72-1015)
 3. Proposed Rule: Addition of NAC Universal Multi-Purpose Canister Storage (NAC-UMS) System to the 10 CFR 72.214 List of Approved Spent Fuel Storage Casks, Federal Register 65FR3397, dated January 21, 2000

The purpose of this letter is to provide comments from the NAC Nuclear Technology Users Group (NUTUG) on the Reference 3 Proposed Rulemaking for the NAC Universal Multi-Purpose Canister Storage (NAC-UMS) System. NUTUG represents the group of utility owners that are committed to implementing the NAC-UMS, along with other storage and transport systems offered by NAC, at their plant sites.

The comments provided in Attachment 1 request changes to the draft Certificate of Compliance (CoC) including the Technical Specifications and the preliminary Safety Evaluation Report (SER). The proposed Technical Specifications continue the industry progress toward Improved Technical Specifications similar in format to those being used at many power reactor sites. NUTUG supports the use of standardized technical specifications in this format. Towards this casks as it focuses on safety based criteria in determining the content of the specifications, and provides a consistent approach between Part 50 and Part 72 regulations.

A number of NUTUG's comments request removal of certain specific requirements from the

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Technical Specifications. These suggestions are consistent with the Improved Technical Specifications proposed by industry and are based on the fact that these details are fully contained in the Safety Analysis Report and, as such, are governed by the conditions of 10 CFR 72.48. The 72.48 process provides assurance that any proposed change, test, or experiment that involves an unreviewed safety question will not be performed without prior Commission approval.

NUTUG is pleased to have participated with NAC in the design and licensing effort for the NAC-UMS System. We look forward to prompt completion of Rulemaking activities and issuance of a final SER/CoC for this system.

Should the NRC Staff have any questions, please contact me at (704) 382-4080.

Sincerely,

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ATTACHMENT 1
PUBLIC COMMENTS FROM NUTUG

1. A number of the NAC-UMS® license drawings require some minor revisions. The initial fabrication processes for the NAC-UMS® have identified the need for additional clarifications and corrections to address editorial omissions for some of the current license drawings. The requested revisions do not constitute design changes to the components nor do they require revision of the existing SAR text or supporting evaluations. Incorporation of the requested revisions will significantly enhance the fabrication inspection process. In addition, incorporation of these requested revisions will allow authorized users of the NAC-UMS® System to fabricate the components without processing 72.48 evaluations for minor variations with the current license drawings. The drawings affected include; 790-559, 790-560, 790-561, 790-562, 790-563, 790-564, 790-570, 790-575, 790-581, 790-582, 790-583, 790-584, 790-585, 790-595 and 790-605. The specific changes requested for each drawing are identified in Attachment 2 to this document.
2. Either plate or forging material should be permitted for both the Shield Lid and Structural Lid of the Transportable Storage Canister. NUTUG requests that either plate or forging materials be allowed for use in fabrication of these lids. The requested change is to allow specification of either Plate or Forging of ASME SA240 or ASME SA182 for both the Shield Lid and Structural Lid. Only minor differences exist between properties for the plate and forging materials and these differences do not affect the performance of the components in the NAC-UMS® System.
3. To provide for a safer approach and greater flexibility in the loading and use of the NAC-UMS® system, NUTUG requests that the Technical Specifications be revised to extend the LCO completion time frames based on a variable heat loading, as appropriate. The design basis heat load time frames do not provide for an optimal approach to the loading and use of the first canisters or those canisters that contain fuel with a significantly lower heat loads. Lower thermal loading will provide for extended time frames for many of the current LCO's, thereby enhancing operational safety when loading canisters with lower heat loads. NUTUG proposes that time frames for 20kW, 17kW, 14 kW, 11 kW, and 8kW be added to the current 23kW design maxim heat load used in developing the current LCO time frame.

NAC has completed the necessary evaluations to supplement the existing Technical Specifications with varying time frames for each applicable reduced heat load. These evaluations used the same methods employed in developing the current time frames present in the SAR. This additional flexibility will further prevent entering LCO actions unnecessarily. NAC is prepared to submit copies of the extended time frames and revised

analyses upon request.

4. NUTUG requests that Section 1.b (page 2 of 4, last paragraph) of the Certificate of Compliance be revised to read: "To minimize contamination of the TSC exterior and interior of the transfer cask, clean water is circulated in the gap between the transfer cask and the TSC during loading operations."
5. NUTUG requests that the language of LCO 3.1.1 (Canister Maximum Time in Vacuum Drying) with respect to "in-pool cooling" be clarified such that it does not restrict such cooling to the spent fuel pool only. In some plant configurations, the use of the cask loading area or area other than the fuel pool may be desirable for providing such cooling. Additionally, the 2nd FREQUENCY for both SR 3.1.1.1 and SR 3.1.1.2 is requested to be revised to "as required to meet the LCO time limits".
6. NUTUG requests that the language of LCO 3.1.5 (Canister Helium Leak Rate) be revised to read "...demonstrate a helium leak rate of less than or equal to..." rather than "...demonstrate a helium leak rate of less than...".
7. NUTUG requests that LCO 3.1.6 (CONCRETE CASK Heat Removal System) be revised to modify REQUIRED ACTION B.2.2 to allow for the use of supplemental cooling to the CONCRETE CASK with a completion time of 12 hours. Delete the reference to transferring the CANISTER to the TRANSFER CASK, as use of the TRANSFER CASK only is overly restrictive and may not be feasible in some conditions. This will allow for additional flexibility in providing cooling to the CANISTER without requiring the transfer to the TRANSFER CASK. Additionally, this flexibility will provide such cooling without the personnel exposure associated with the transfer of the CANISTER to the TRANSFER CASK.
8. Under LCO 3.1.6 (concrete Cask Heat Removal System), NUTUG requests that SR 3.1.6.2 be deleted. This surveillance is already required under A 5.4 under Administrative Controls and Programs. Additionally, A 5.4 should be revised to clearly state what off normal, accident or natural phenomena events the surveillance should be performed for. Reference to Chapter 11 of the SAR, NUREG-1536 or 10 CFR 72.24 and 72.122 would provide identification of which events would require surveillance.
9. NUTUG requests that LCO 3.1.7 (Fuel Cooldown Requirement) be deleted from the technical specifications as there are no design basis accidents that require fuel cooldown for removal from a sealed canister. The applicant has demonstrated that cooldown can be performed as required by the Thermal Evaluation section of NUREG-1536. If the Fuel Cooldown Requirements cannot be removed from the technical specification, it is recommended that they be moved to the Administrative Controls and Programs section.

10. The COMPLETION TIME for REQUIRED ACTION A.1 of LCO 3.2.1 (Canister Surface Contamination) is unnecessarily restrictive. NUTUG requests that the COMPLETION TIME be revised to 25 days as this LCO is not time dependent.
11. The COMPLETION TIME for REQUIRED ACTION A.2 of LCO 3.2.2 (CONCRETE CASK Average Surface Dose Rates) is unnecessary restrictive. NUTUG requests that the COMPLETION TIME be revised to 25 days.
12. NUTUG requests that Section A 5.2 of the Technical Specifications be revised to add the following sentence : "Appropriate mockup fixtures may be used to demonstrate and/or to qualify procedures, processes, or personnel in welding, weld inspection, vacuum drying, helium backfilling, leak testing and weld removal or cutting." This sentence should be added following Item A 5.2(n).
13. NUTUG requests that Table A5-1 of the Technical Specifications be revised to indicate a Lifting Height Limit of "< 24 inches". This is consistent with Section 11.2.4.2 of the Preliminary Safety Evaluation Report.
14. NUTUG requests that the language in B 2.1.2 of the Approved Contents and Design Features addressing preferential loading and center position loading of shortest cooled fuel be revised as follows:
 - The last two sentences of the first paragraph of this section should be deleted.
 - The second paragraph should be revised to delete reference to the "basket interior," which is described as the "basket center positions" in the previous paragraph.
 - The third paragraph should be moved prior to the current 1st paragraph.
 - The first sentence of the current 2nd paragraph should be made a separate paragraph, as it is not related to the text that follows it.
15. NUTUG requests that B 2.2.3 of the Approved Contents and Design Features be revised to include the phrase: "or demonstrate" between the (existing) words "restore" and "compliance".
16. NUTUG requests that the following additional Note be added to both Tables B2-2 and B2-4 of the Approved Contents and Design Features: "Parameters shown are nominal pre-irradiation values."
17. The parameters provided in B 3.4(6) of the Approved Contents and Design Features are not relevant to the drop accident condition, and are not relevant to the tip-over provided that the allowable seismic accelerations are not exceeded (i.e., the cask does not tip-over). Thus, NUTUG requests that Item 6 be revised to read: "In addition to the requirements of

10 CFR 72.212(b)(2)(ii), the seismic acceleration at the top surface of the ISFSI pad can not exceed the value provided in B 3.4 (3)."

18. NUTUG requests that B 3.5.2.1 (4) of the Approved Contents and Design Features be revised to read: "The CHF design shall incorporate an impact limiter for CANISTER lifting and movement if a qualified single failure proof crane is not used."
19. NUTUG requests that the following parameter definition clarifications be made to Table B3-2 of the Approved Contents and Design Features:
 - "D" is revised to read "Crane hook dead load"
 - "D*" is revised to read "Apparent crane hook dead load"
20. NUTUG requests that the first paragraph of Section 8.2 of the SER be revised to refer to Section A 5.6 for the transport evaluation program, not Section A 5.5.
21. NUTUG requests the removal of the inference in Chapter 10 of the SAR that a daily inspection of the VCC vents is an expected or routine activity. Identification of blocked VCC vents is accomplished by use of the temperature monitoring systems. Physical inspection of the VCC vents, especially daily, results in unnecessary exposure and is not in keeping with preferred ALARA practices.

ATTACHMENT 2
NUTUG REQUESTED DRAWING REVISIONS

1. **790-559 –**
 - Modify Transfer Adapter Connector body by drilling .5 diameter relief in the corners.
 - Add a "Blend" note for the chamfers where Items 3, 4, and 5 join.
 - Items 14 and 15 need thread class 3A added to their description.
 - Add Keeler and Long E-Series Epoxy Enamel to Note 3 as an alternative finish.
 - Change leader callout Sht 2, Zone F-3 IS) 4X Dia 1.38, C-Bore Dia 2.00 Depth 1.25 WAS) 4X Dia 1.13, C-Bore 1.63 Depth 1.06.
 - Change Drawing title IS) NAC-UMS® WAS) NAC-UMS™.
 - Item 17 IS) . . . UNC-2A. . . WAS) . . . UNC. . .
 - Add $\pm 5^\circ$ tolerance Sht 2, 3 places; Sht 3, 14 places.

2. **790-560 –**
 - Add note for Engrave/Stencil, as shown, Name, NAC Drawing No., and Empty Weight.
 - Incorporate attached inlet and outlet design.
 - Sheet 3, Zone F7, remove 1/2" partial pen weld.
 - Modify Note 14 to allow Item 43 to serve as backing for the inner shell weld.
 - Add details and part numbers for first row of lead brick to have flat bottoms, and the last row to have flat tops. Increase brick outer radius by .18 inches.
 - Remove heat transfer angles from assemblies 95 thru 99.
 - Add note to Item 19 to allow for undercut for thread relief.
 - Change Material for Item 43 to ASTM A36/A105/A516 Gr. 70.
 - Counterbore Door rails for Item 19 Door Lock Bolts.
 - Change material for Item 19 to 304 St.Stl., ASTM A276.
 - Sheet 3, Zone A7, add centerline dimension to rail.
 - Increase scuff plate I.D. to 14.0.
 - Add note for allowance of Commercial Grade Lead wool in open spaces in trunnion area.
 - Add note to split 40 lead brick and use as top and bottom pieces.
 - Add double groove weld to the inner and outer shells with Delta Note.
 - Add Delta Note as follows: Typical for seam and girth welds, number and location optional. Seam welds shall be offset
 - Delete note 11, move weight callouts to Assembly Title callouts.
 - Add +/- 5° tolerance to angular dimensions: Sht 5, 6 places; Sht 4, 5 places; Sht 2, 3 places.
 - Change Delta Note 16 IS) Cut one... WAS) Shear one...
 - Change dimension callout Sht 4 Zone E-7 IS) (1.2) cut plane... WAS) 1.2 shear

plane...

3. 790-561 -

- Add plan detail locating gussets on jack base Item 4.
- Modify Note 6 to read, "Items may be fabricated using multiple sections. All seams between sections must be seal welded upon assembly."
- Detail Item 3 for bar, forging, or plate fabrication. Make tolerances $\pm .13$. Mat'l: A36/A105.
- Dimension 45° between vertical axis and inlet centerline for assembly -94 and -95 thru -99.
- Add tolerance of $+ .3 / - .0$ to Item 12, Sheet 2, Zone D7.
- Sheet 2, Zone B8, remove all around symbol and add note to tail "hook ends."
- Change Item 26 to a 5/8 - 11 square nut. Indicate tack weld attachment. On assembly -93, locate as currently detailed. On assembly -94, locate 2 adjacent to both sides of item 14 and locate 2 on the 45° leg of item 13. Note that each should be located tangent to the effective O.D. of the VCC.
- Sheet 2, Zone E6, redimension the Nelson studs using ordinate dimensioning and noting typ for each.
- Add note the baffle, assy -92 can be manufactured from multiple pieces.
- Add longitudinal seam weld for baffle, assy -92.
- Sheet 2, Zone A7, change fillet weld to seal weld.
- Add seal weld to O.D. of Base weldment shield ring, Item 11.
- Add double groove weld with Delta Note 4 to Item 15 for seam/girth welds.
- B.O.M. Items 6, 7, and 8 IS) Carbon Steel WAS) Steel.
- Remove 45° from Delta Note 4.
- Change angular dimensions to add ± 5 Deg.: Sht 1, 5 places; Sht 2, 6 places.
- Delete fillet weld callout, Sht 1, Zone E-6.
- Add Delta Note to Balloon (26) in Assembly -93 only, "Locate face of Item 26 flush with 68" radius profile."
- Add Delta Note 6 to B.O.M. Item 11.
- Change dimension Sht 2, Zone B-6 IS) 19.4 WAS) 19.38.
- Add 3/16 fillet all around to plan view of Detail C-C (Item 15).

4. 790-562 -

- Add 5/8-11 x 1.0 long, St.Stl. bolts with flatwashers for inlet/outlet screen attachment hardware.
- Modify -93 and -94 screen details to coincide with new attachment details incorporated in the base and vent weldments (790-561-94 and -93). Include prebending of -93.
- Add note indicating screen attachment points are to be plugged prior to forming.
- Add dimensions req'd to properly locate Item 31 on the Lift anchor.
- Change dimension (2 places) Sht 2, Zone D-6, D-4 IS) 2.0 WAS) 2.00

- Delete Delta Note 12.
 - Change Delta Note 9 to read, "Install per manufacturers instructions."
 - Change Qty for BOM items 28 and 29 IS) 4 WAS) 16.
 - Add Balloon (28) and (29) and Delta Note 9 to Balloon (30) Sht 1, Zone C-8.
5. 790-563 –
- Zone D3, Change .60 diameter hole to .6 diameter.
 - Steel stamp "LIFT" 3/8" Tall letters at the 3 tapped holes.
6. 790-564 –
- Create a second, alternate lid, utilizing 1.5 inches of NS-3 for shielding.
 - Add seam weld for Item 2, geometry, number and location optional, seal weld minimum.
 - Add tolerance $\pm 5^\circ$ to leader callout Zone F-4.
7. 790-570 –
- Change material spec Item 4 to ASTM A249/A213.
 - Sheet 1, Zone C6, change note to top end only.
 - Remove notches (drain holes) from the bottom of the basket assembly.
8. 790-575 –
- Sh2, Items 5 and 6, make tolerance on chamfer $\pm 5^\circ$.
 - Remove notches from tube bottom.
 - Add Delta Note indicating assessment of internal tube dimension is by 5.7" square x 12' min. long gage.
 - Add alternate flange detail (tube thru flange weldment).
 - Sht 1, Zone D6, change 6.59 dim to 6.6.
 - Detail A-A, change pictorial of poison to remove radiused edges.
 - Detail A-A, Dim (.135) changes to $.135 \pm .005$.
 - Sht 2, Item 3 and 4 dim $5.34 \pm .06$ changes to $5.340 \pm .062$.
 - Sht 2, Section C-C, dim 5.3 min inside flat changes to 5.4 min inside flat.
 - Add tolerance $\pm 5^\circ$ to leader Sht 1, Zone D-6.
9. 790-581 –
- Sht 2, Items 7, 8, and 9, make tolerance on chamfer $\pm 5^\circ$.
 - Remove notches from tube bottom.
 - Add alternate flange detail (tube thru flange weldment).
 - Add Delta Note indicating assessment of internal tube dimension is by 8.65 square X 12' min long gage.
 - Sht 1, Zone D6, change 9.65 dim to 9.7.

- Detail A-A, change pictorial of poison to remove radiused edges.
 - Detail A-A, Dim (.075) changes to $.075 \pm .005$.
 - Sht 2, Items 4, 5, and 6 dim $8.23 \pm .06$ changes to $8.230 \pm .062$.
 - Sht 2, Section C-C, dim 8.2 min inside flat changes to 8.3 min inside flat.
 - Add tolerance $\pm 5^\circ$ Sht 1, Zone D-5.
10. 790-582 -
- Modify Detail A-A per attached sketch.
 - Add a $15^\circ \pm 5^\circ$ X .8 leadin chamfer to the canister opening.
 - Change dimensions for lug placement to 1 decimal place.
 - Modify Delta Note 2 to be $\pm 5^\circ$ for angular positions.
 - Modify canister bottom chamfer and lug chamfers to be $\pm 5^\circ$.
11. 790-583 -
- Add alternate welding method of Item 2-6 to Item 1, where Item 1 may be faced down to provide adequate land for a 1/16 fillet weld.
 - Change Items 2-6 material spec to ASTM A249/A213.
12. 790-584 -
- Sheet 2, Item 7, Inside diameter should be 64.8.
 - Add note allowing for multiple piece construction of Item 6 utilizing full penetration welds.
 - Add lead-in chamfer to shield lid key slot, Detail E-E, $30^\circ \pm 5^\circ$ X .5.
 - Remove chamfers from one end of Item 8, Key.
 - Add tolerance $\pm 5^\circ$ Sht 2, 2 places; Sht 1, 14 places.
 - Change Dim Sht 1, Zone F-3 IS) 6 x 60° WAS) 6 x 60.0° .
13. 790-585 -
- Sht 1 of 2, Zone F6: Use 1/8 inch butt weld to attach key to support ring.
 - Sht 2 of 2, Detail A-A: Remove 3 sided form tail, make a two sided weld, 2 inches each side.
 - Sht 1, Zone F6, Change the shield lid support ring weld to 5/16 bevel with a 1/8 fillet back.
 - Remove Delta Note 6.
 - Add Delta Note, "At the option of the user, stainless steel (ASME SA240, Type 304L) shims of appropriate thickness may be used in the field welding of the shield lid (Item 17) to the canister shell," to shield lid closure weld.
14. 790-595 -
- Change material spec Item 4 to be ASTM A249/A213.
 - Delete Delta Note 2.
 - Add weld callout Sht 1, Zone C-6 IS) Top end only, seal weld WAS) fillet to

Item 4.

15. 790-605 -

- Sht 2, Items 5 and 6, make tolerance on chamfer $\pm 5^\circ$.
- Remove notches from tube bottom.
- Add alternate flange detail (tube thru flange weldment).
- Add Delta Note indicating assessment of internal tube dimension is by 5.95" square X 12' long gage.
- Sht 1, Zone D6, change 6.74 dim to 6.7.
- Detail A-A, change pictorial of poison to remove radiused edges.
- Detail A-A, Dim (.135) changes to $.135 \pm .005$.
- Sht 2, Item 3 and 4 dim $5.34 \pm .06$ changes to $5.340 \pm .062$.
- Sht 2, Section C-C, dim 5.3 min inside flat changes to 5.4 min inside flat.
- Add tolerance $\pm 5^\circ$ Sht 1, Zone D-6.