

August 6, 2010

Mr. Pierre M. Saverot – Project Manager
Office of Nuclear Material Safety and Safeguards
Mail Stop: EBB-3D-02M
United States Nuclear Regulatory Commission
Executive Boulevard Building
6003 Executive Boulevard
Rockville, Maryland 20852

**RE: Amendment Request to Certificate of Compliance No. 9342
for the Model No. Versa-Pac Package, Docket No. 71-9342
and TAC No.**

Dear Mr. Saverot,

Century Industries would like to thank you and your staff for the hard work conducted during the review process on our package application and the issuance of the Certificate of Compliance Number 9342.

Certificate Number	Model Number
USA/9342/AF	VP-55 & VP-110

1. Contents Section 6 Amendment Request

During our review and the review of our customers, it was suggested that we request an amendment for clarification to the contents in Section 5(b)(1)C in that uranium carbide be allowed based upon the analysis of a U-metal-Carbon/Graphite mixture. The criticality analysis modeled U-metal and carbon mixtures, which were not very reactive in the Versa-Pac with the most reactive as demonstrated in the SAR was U-metal and high density poly.

Section 6.0 of the Versa-Pac Safety Analysis Report evaluated a fissile mass consisting of uranium metal moderated with a high density polyethylene plastic. As demonstrated in the SAR, the multiplication factor of the array is driven by the density of the hydrogen-based moderator. The evaluation (Section 6.6.2.2, *Increased Poly-Moderation Density*) further concluded that substitution of the hydrogen moderator with Carbon/Graphite moderation resulted in a significantly lower multiplication factor.

Section 6.2, *Fissile material contents*, of the Versa-Pac Safety Report therefore allows:

“Uranium oxides (U_xO_x), uranium metal (U-metal), uranyl nitrate crystals (UNX), and other uranium compounds (e.g., Uranyl Fluorides and Uranyl Carbonates) enriched up to 100 Wt% U-235. The uranium compounds may also contain carbon or graphite”

The above description was to allow Uranium-Carbon/Graphite compounds such as UC, U_2C_3 , and UC_2 in the context of “other uranium compounds”, as proposed in Section 6.2 and 1.2.2, since they are bound by the analysis of Uranium Metal. Also, the other uranium compounds, including UC, U_2C_3 , and UC_2 may also be mixed with carbon or graphite, as both moderator materials are bounded by the hydrogen (high density polyethylene) moderator evaluated in the SAR.

Since both “other uranium compounds” containing carbon and carbon/graphite moderating materials have been evaluated within the existing SAR and the existing SAR has been reviewed and approved by the NRC, no further NRC evaluation is needed to validate the inclusion of these materials within the packaging certification.

Thus, Century Industries requests that condition 5.(b)(1)C, be revised to delete the restrictions regarding uranium carbide. Century Industries proposes the following wording:

- Other uranium compounds, e.g., uranyl fluorides and uranyl carbonates. The uranium compounds may also contain or be mixed with carbon or graphite (U_xC_y), however uranium hydrides are not authorized for shipment.

Additional wording to provide clarification to the Versa-Pac SAR have been added in Sections 6.2, 6.6.2.2.2. The corrected pages are attached.

2. Section 1 Contents & Correction to 55 & 110 Gallon Drawings

Section 1, Paragraph 1.2.2, 1st paragraph has been corrected to reflect the changes that were made in Section 6.2 to maintain consistency within the SAR.

During the final review process of fabrication drawings while fabricating a training package, production of associated fixtures for the beginning of production packages and the development of production purchase orders, it has been discovered that the current Licensing Drawings for the 55 & 110 gallon model contains detail errors.

55 Gallon Drawings - The length of the internal structure is shown as 2'-2" on drawing VP-55-LD-2. This measurement should have been shown as 2'-2-5/8" in length, which was the actual measurement of the development and testing prototypes.

We would also request that additional changes be allowed to better show actual measurable items on the same detail, the space between the internal diameter of flange PH, which is currently shown as 1'-4-7/16", it is more indicative of the flange to be detailed as 1'-3-1/4" (Drawing VP-55-LD-2).

55 & 110 Gallon Drawings - We have also discovered two material specifications that should also be adjusted to indicate the appropriate listing of the materials that were utilized during the testing and development stages.

Item FG - The bolts were detailed on the design drawing as ASTM A449; the appropriate specification number is SAE J 429 Grade 5. This is the actual bolt designation that was utilized during the development stages. The physical properties are identical to that of ASTM A449 bolts. I have attached a copy of a fastener technical specification (Fastenal Industrial Blue Book) showing both bolt specifications. Also affected are the Materials of Construction Pages 1-9 and 1-10 of the SAR (Table 1-2 & Table 1-3).

Item BB - This request is a material specification correction from A36 to A1018. The A1018 material is a cold finished, low carbon product that provides better case hardening and machinability properties than that of A36. It also was utilized during the development and testing of the Versa-Pac for the blind nut holders, (Drawing VP-55-LD-1 and VP-110-LD-1).

We have also revised SOP 6.11 to reflect a correction in the ASTN specification requirement from D579 to the current C209 for moisture content evaluation in the foam.

There has been no structural or material change in the package as it was designed; tested and approved and should not require any additional evaluation beyond the drawing and SAR adjustments.

Affected pages Section 1 include the additional wording to Section 1.2.2, Page 1-5, Material Specification Pages 1-9 & 1-10, Drawing Pages 1-14, 1-15, 1-16 & 1-17 and SOP correction on page 1-22.

We would therefore respectfully request that an amendment to the Certificate of Compliance 9342 be granted for these drawing corrections and for the addition of uranium carbide to the acceptable materials that can be transported in the Versa-Pac Shipping Container.

We would also request that this revision be granted prior to August 24, 2010, if possible due to our impending customer schedule commitments and the livelihood of our company.

If you or your staff have any questions, or need any additional information, please let me know.

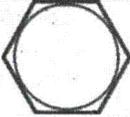
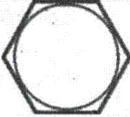
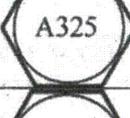
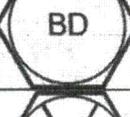
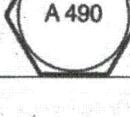
Sincerely,



William M. (Mike) Arnold
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FASTENER TECHNICAL INFO

Mechanical Specifications for Externally Threaded Fasteners with Grade Markings

Specification	Material	Size Range (in.)	Min. Proof Strength (psi)	Min. Tensile Strength (psi)	Core Hardness Rockwell		Min. Yield Strength (psi)	Grade Identification Marking
					Min.	Max.		
SAE J429-Grade 1	Low or medium carbon steel	1/4 - 1 1/2	33,000	60,000	B70	B100	36,000	
SAE J429-Grade 2		1/4 - 3/4	55,000	74,000	B80	B100	57,000	
		7/8 - 1 1/2	33,000	60,000	B70	B100	36,000	
ASTM A307-Grade A	Low or medium carbon steel	1/4 - 4		60,000	B69	B100		
ASTM A307-Grade B	Low or medium carbon steel	1/4 - 4		60,000(min) 100,000(max)	B69	B95		
SAE J429-Grade 5	Medium carbon steel: quenched & tempered	1/4 - 1	85,000	120,000	C25	C34	92,000	
		1 1/8 - 1 1/2	74,000	105,000	C19	C30	81,000	
ASTM A449-Type 1	Medium carbon steel: quenched & tempered	1/4 - 1	85,000	120,000	C25	C34	92,000	
		1 1/8 - 1 1/2	74,000	105,000	C19	C30	81,000	
		1 3/4 - 3	55,000	90,000			58,000	
ASTM A325-Type 1	Medium carbon steel: quenched & tempered	1/2 - 1	85,000	120,000	C25	C34	92,000	
		1 1/8 - 1 1/2	74,000	105,000	C19	C30	81,000	
ASTM A354 Grade BD	Medium carbon alloy steel: quenched & tempered	1/4 - 2 1/2	120,000	150,000	C33	C39	130,000	
		Over 2 1/2 - 4	105,000	140,000	C31	C39	115,000	
SAE J429-Grade 8	Medium carbon alloy steel: quenched & tempered	1/4 - 1 1/2	120,000	150,000	C33	C39	130,000	
SAE J429-Grade 8.2	Low carbon boron steel: quenched & tempered	1/4 - 1	120,000	150,000	C33	C39	130,000	
FNL Grade 9	Medium Carbon Alloy Steel	1/4 - 1-1/4	140,650	180,000	C38	C42	159,500	
ASTM A490-Type 1	Medium carbon alloy steel: quenched & tempered	1/2 - 1 1/2	120,000	150,000(min) 173,000(max)	C33	C39	130,000	
ASTM A574 Alloy Steel Socket Head Cap Screw	Medium carbon alloy steel: quenched & tempered	#0 - 1/2 over 1/2 - 2	140,000 135,000	180,000 170,000	C39 C37	C45 C45	153,000	
ASTM F835 Alloy Steel Socket Button & Flat Countersunk Head Cap Screw	Medium carbon alloy steel: quenched & tempered	#0 - 1/2 Over 1/2		145,000 135,000	C39 C37	C44 C44		
ASTM F1554 Anchor Bolts, Steel Grade 36	Low or medium carbon steel	1/4 - 4		58,000 - 80,000			36,000	

TECHNICAL INFORMATION