

650L Container Review Issues

10 CFR 71.95 Reportable Items

Background

As a result of configuration issues identified on the Model 702 Type B container, a review of the 650L manufacturing records was initiated to determine if any similar issues existed where the packages in use did not meet the approved design under the CoC.

This review was initiated on 12 November 2014.

Results

The review of drawings and inspection records for the 650L package identified an issue where the containers in use do not fully comply with the CoC requirements.

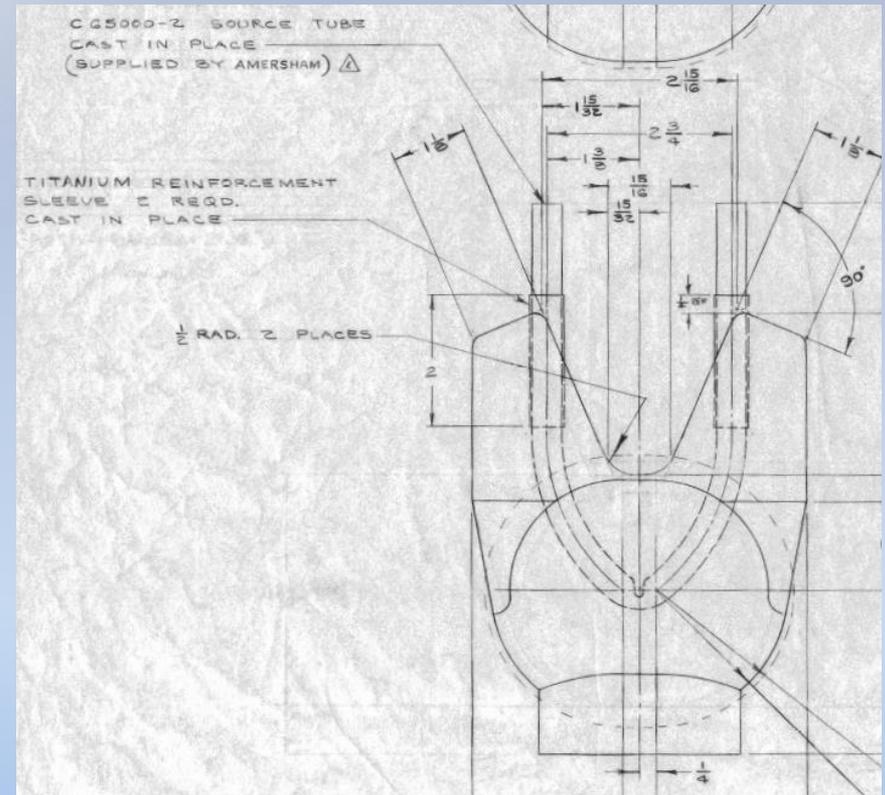
650 to 650L Conversion Records

In some cases, the inspection records were incomplete. In cases where the initial conversion from the old 650 style unit to the current 650L configuration could not be supported by QC records, these packages were pulled from use until they could be inspected and documented as to compliance. Of the roughly 390 containers in active use, this affected a group of 39 units.

Results

Titanium Sleeves on Shield Assemblies

Review of the production drawing from 1979 shows the addition of titanium sleeves on the outside of the titanium source tubes which are then incorporated into the shield after the DU is poured. These sleeves are not currently shown/referenced on the descriptive drawing but are present on all shields used in 650L in transport.



Results

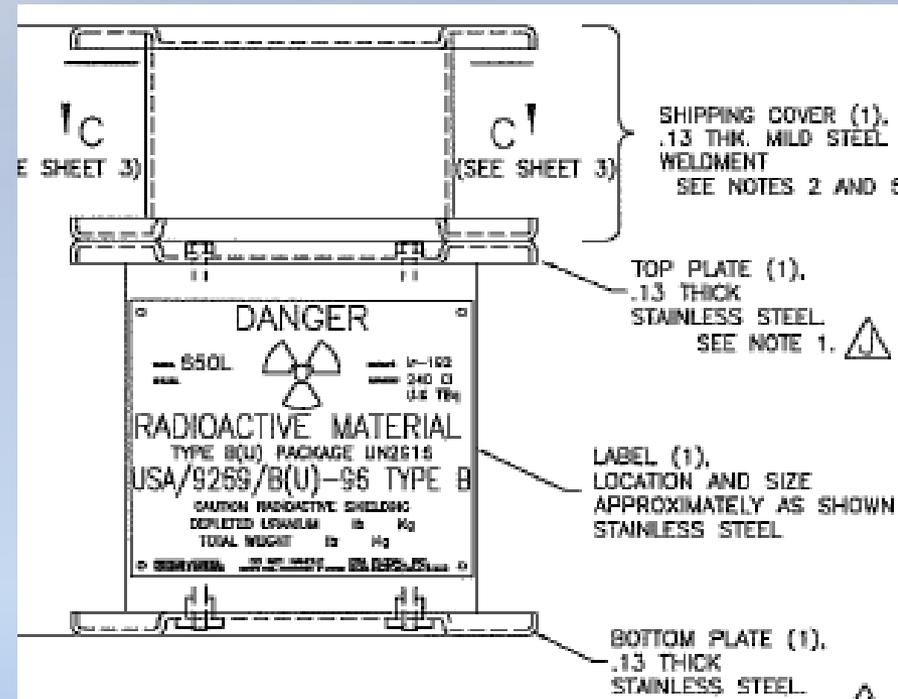
Titanium Sleeves on Shield Assemblies - continued

The test units used to demonstrate compliance to transport requirements incorporated these titanium sleeves and since the omission will have no safety significance or adverse impact on the package transport integrity, we request continued shipment of these packages while amendment is processed to update the CoC.

Results

Top and Bottom Plate Flanges

In 2010 a new material requirement was added to the descriptive drawing R65006 Rev J Note 1 which specified the stainless steel used for the top and bottom plates would comply to SAE 30304 per AMS5513.



NOTES:

1. TOP PLATE AND BOTTOM PLATE ARE SAE 30304 PER AMS5513.

Results

Top and Bottom Plate Flanges - continued

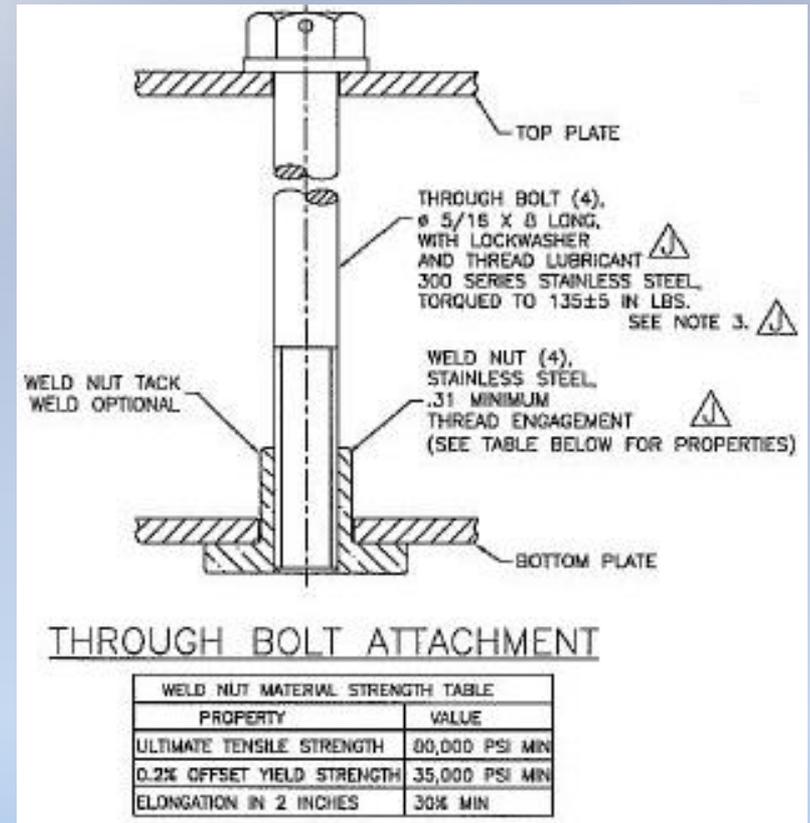
Inspection records for these components indicate they comply with 304 stainless steel but not to the specific standard on drawing R65005 Rev J.

The test units used to demonstrate compliance to transport requirements were compliant to 304 stainless steel. Materially, 304, 304L and SAE 30304 per AMS5513 materials are all corrosion resistant stainless steels with essentially equivalent material strength and ductility. As such, the components in current use on existing 650L packages are expected to perform identically to components tested for compliance to the normal and accident condition transport requirements. Since there is no safety significance or adverse impact on the package transport integrity, we request continued shipment of these packages while amendment is processed to update the CoC.

Results

Stainless Steel Through Bolts – SCR200

The production drawing specifies this screw as 300 Series stainless steel but does not require material compliance to ASTM F593, Group 1, Condition A. The ASTM standard compliance was added to the drawing in 2010.



3. THROUGH BOLTS MEET THE REQUIREMENTS OF ASTM F593 GROUP 1, CONDITION A.

Results

Stainless Steel Through Bolts – SCR200- continued

Inspection records for these components indicate they comply with 300 Series stainless steel but not to the ASTM standard on drawing R65005 Rev J.

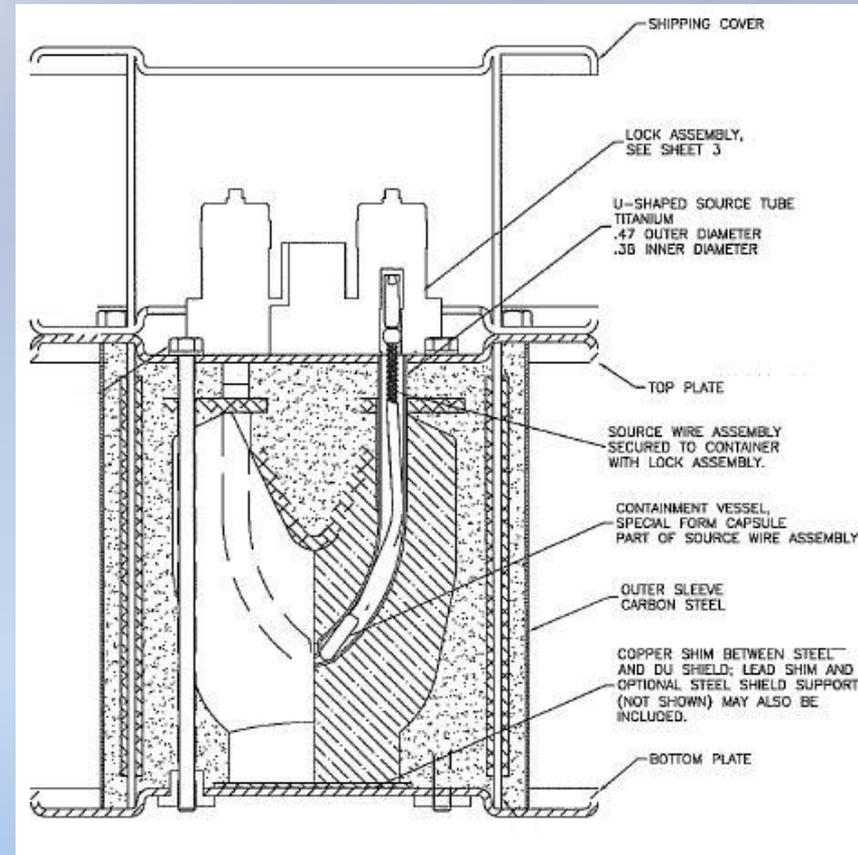
The test units used to demonstrate compliance to transport requirements were compliant to 300 Series stainless steel. The ASTM F593 Group 1 Condition A materials have essentially the same mechanical and corrosion resistance properties as Type 304, 304L and other 300 Series stainless steels.

As such, the components in current use on existing 650L packages and components compliant to the ASTM standard are expected to perform similarly to components tested for compliance to the normal and accident condition transport requirements. Since there is no safety significance or adverse impact on the package transport integrity, we request continued shipment of these packages while amendment is processed to update the CoC.

Results

Outer Sleeve Plating/Painting

The outer sleeve on drawing R65006 Rev J is specified as “carbon steel”. Review of latest production drawing for this component from 1992 calls for the component to be Zinc Plated, Yellow Chromate and also painted. These surface finish details are not currently specified on drawing R65006.



Results

Outer Sleeve Plating/Painting - continued

The addition of zinc plate, yellow chromate and paint on the outer sleeve will have no detrimental or adverse impact on the 650L package ability to comply with the Type B requirements.

All active 650L containers as well as the test units used to demonstrate compliance to transport requirements were included these material requirements.

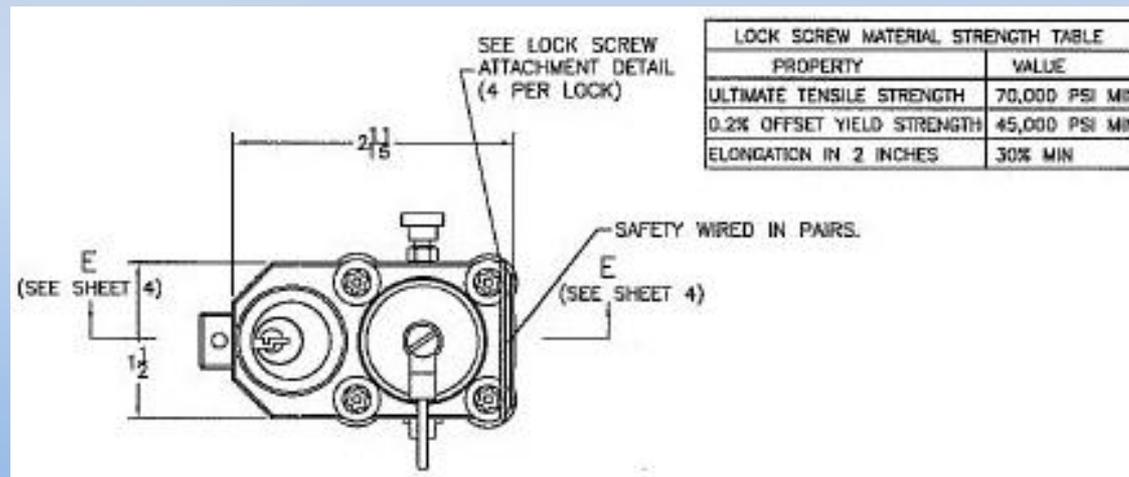
Continued transport of 650L containers is requested since the units in transport will perform as well as the tested specimens and their continued use will have no adverse impact on the package integrity during transport.

Since there is no safety significance or adverse impact on the package transport integrity, we request continued shipment of these packages while amendment is processed to update the CoC.

Results

Lock Assembly Attachment Screws – 65021

Although the production drawing currently complies with the material requirements from R65006 Rev J, components that were tested and that are in use on 650L containers in transport were accepted to an earlier revision of the drawing that only required the screws to be 18-8 stainless steel. The material strength requirements were added to the descriptive drawing in 2010. At that time, this requirement should have been conditioned to apply only to components fabricated after 1 Nov 2010 as it did not account for historical components in use in the field.



Results

Lock Assembly Attachment Screws – 65021 - continued

The 65021 screws used in 650L packages today and our current inventory of replacement components (~3,000) are 300 Series (18-8) stainless steel which is the same material used on the Type B test specimens to demonstrate package compliance.

The values given in the material strength table of drawing R65006 Rev J have essentially the same mechanical properties as the 18-8 and other 300 Series stainless steels used to product tamperproof button head screws.

As such, the components in current use on existing 650L packages and components compliant to the requirements on drawing R65006 Rev J are expected to perform as well as components tested for compliance to the normal and accident condition transport requirements. Since there is no safety significance or adverse impact on the package transport integrity, we request continued shipment of these packages while amendment is processed to update the CoC.

Justification for Continued Use

The issues identified, though technically not compliant to the CoC requirements, represent non-safety significant issues that were either omitted from the current container description or were representative of test unit construction used to demonstrate package compliance to transport requirements.

The 650L is heavily relied upon to ensure sources are provided to Industrial Radiography licensees for use in the performance of non-destructive inspection and testing. Stopping shipment of all potentially affected 650L packages (~390 containers which are used for roughly 250 shipments per month), would have a significantly adverse impact our ability to support these companies.

Justification for Continued Use

The inability to provide sources to Industrial Radiographers, pending processing of an amendment to the 650L CoC, would have a direct, negative impact on public health and safety.

Failure to supply sources could prevent inspection and acceptance of structures necessary to ensure public safety (e.g., pipeline welds, steel beam weldments, etc. for containers whose continued use will have no adverse safety or integrity impact.

As such we request continued transport of 650L packages (except for those pending inspection for full unit conversion), during the time necessary to amend CoC 9269 to update drawing R65006 to reflect container configurations currently in use.