

~~OFFICIAL USE ONLY – SECURITY RELATED INFORMATION~~

November 8, 2013

Mr. Donald W. Olson
President, COO
Columbiana Hi Tech, LLC
1802 Fairfax Road
Greensboro, North Carolina 27407

SUBJECT: CERTIFICATE OF COMPLIANCE NO. 9196, REVISION NO. 27, FOR THE
MODEL NO. UX-30 TRANSPORTATION PACKAGE

Dear Mr. Olson:

As requested by your application dated August 27, 2013, supplemented September 20, 2013, enclosed is Certificate of Compliance No. 9196, Revision No. 27, for the Model No. UX-30 transportation package. Changes made to the enclosed certificate are indicated by vertical lines in the margin. The staff's safety evaluation report is also enclosed.

The approval constitutes authority to use the package for shipment of radioactive material and for the package to be shipped in accordance with the provisions of Title 49 of the *Code of Federal Regulations* (49 CFR) 173.471. Those on the attached list have been registered as users of the package under the general license provisions of 10 CFR 71.17 or 49 CFR 173.471.

If you have any questions regarding this certificate, please contact me or John Vera of my staff at (301) 287-9165.

Sincerely,

/RA/

Michele Sampson, Chief
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

Docket No. 71-9196
TAC No. L24782

Enclosures: 1. Certificate of Compliance
No. 9196, Rev. No. 27
2. Safety Evaluation Report
3. Registered Users

Upon removal of Enclosure 3, this
document is uncontrolled

cc w/encls 1&2: R. Boyle, Department of Transportation
J. Shuler, Department of Energy, c/o L. F. Gelder

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ADAMS P8 Package No.: ML13312B012; Letter-SER ML13312B013; CoC ML13312B015

OFC:	SFST	E	SFST		SFST		SFST		SFST	
NAME:	Jvera		MDebose		DTarantino		ACsontos		MSampson	
DATE:	11/06/2013		11/6/2013		11/6/2013		11/7/2013		11/8/2013	

C=Without attachment/enclosure E=With attachment/enclosure N=No copy **OFFICIAL RECORD COPY**

SAFETY EVALUATION REPORT

Docket No. 71-9196
Model No. UX-30
Certificate of Compliance No. 9196
Revision No. 27

SUMMARY

By application dated August 27, 2013, supplemented September 20, 2013, Columbiana Hi Tech, LLC, requested an amendment of Certificate of Compliance No. 9196, for the Model No. UX-30 package. The amendment requested allowance of the use of the current revision of American National Standards Institute (ANSI) N14.1 and International Standards Organization (ISO) 7195 Codes.

EVALUATION

Staff has reviewed the requested allowance of the use of the current revision of American National Standards Institute ANSI N14.1 and ISO 7195 Codes. Staff finds that there are no significant changes from the previously approved version of ISO 7195. Staff reviewed the changes in the ANSI N14.1 2012 version and finds that the changes do not reduce the level of safety from the previously approved version. Table 1 provides specific staff findings for the changes in the ANSI N14.1 2012 version. Staff finds that use of the current standards will not reduce package safety.

Table 1.

ANSI N14.1 2012 Revision	Finding
Paragraph 5.2.1: Adds requirements (acceptance criteria) for fillet welds to be in accordance with 3.6 of American Welding Society (AWS) D1.1 and the code. Adds coupling installation instructions to include screwing in an appropriate sized national pipe thread (NPT) plug into the coupling before any welding. After welding is completed, the coupling should be allowed to cool before removal of the plug. Added requirements for American Society for Testing and Materials (ASTM) A131 Grade - E Steel. The Charpy V-notch impact test and acceptance criteria shall be as specified in ASTM A131.	The staff finds the following: The added fillet requirements of AWS D1.1 to be acceptable as this is the industry recognized standard for welding. The added coupling installation instructions to be acceptable as this is a proven good shop/production process used to preserve the integrity of the coupling/plug. The added requirements for ASTM A131 to be acceptable as this is the industry recognized standard. Materials under this specification can be categorized as ordinary strength and higher strength. Mechanical properties such as elongation and toughness are evaluated using tension test and Charpy V-notch impact test.
5.2.3: Changed entire paragraph to read: "5.2.3 Testing A qualified inspector shall witness all testing.	The staff finds the change to be acceptable as the most conservative of safety criteria has not changed, "no leakage shall be permitted," for

<p>1. Hydrostatic Strength Test: Cylinders shall be subjected to a hydrostatic strength test of the type set forth in the Code. No leaks shall be permitted. The test pressure shall be twice the MAWP. Prior to inspection for leaks the pressure shall be lowered to 1.5 times the MAWP or 200 psig, whichever is the greater. Defects, if any, shall be repaired as permitted in the Code, and a retest shall follow.</p> <p>2. Pneumatic Leak Test: A pneumatic leak test at 100 psig shall be carried out on all connections, fittings, and valve seats (and packing where provided) using an appropriate leak-testing fluid. The sensitivity of this test shall be at least 10^{-3} atmospheres • cm³/s. "No leakage shall be permitted."</p>	<p>both the hydrostatic and pneumatic tests specified.</p>
<p>6.6.2: Changed coupling description to read: "2. Couplings. Modified half-coupling per Figure 14, forged ASTM A-105. Note: ASTM A106 Grade C may be used in lieu of ASTM A-105." " Modified Seal Loop description to read: "5. Seal Loop(s). Rod, ASTM A36."</p>	<p>The staff finds the change/modification to be acceptable as these specifications are the recognized national standards. ASTM A105 covers standards for forged carbon steel piping components, that is, flanges, fittings, valves, and similar parts, for use in pressure systems at ambient and higher-temperature service conditions, ASTM A106 covers carbon steel pipe for high-temperature service. These pipes are suitable for welding, bending, flanging, and similar forming operations and ASTM A36 covers carbon steel shapes, plates, and bars of structural quality for use in riveted, bolted, or welded construction for general structural purposes.</p>
<p>6.6.6: Plug description is modified to allow (add) the use of socket head plugs in lieu of hex head plugs.</p>	<p>The staff finds this modification acceptable as good production practice in that the operating geometry or form of this component may change, however the mechanical fit and function remain the same.</p>
<p>6.6.7: Changes were made to the valve and plug installation instructions to include the use of socket head plugs along with adding specific requirements for use of torque wrenches and specifying minimum thread engagement of fittings.</p>	<p>The staff finds the addition of socket head plugs and added requirements for use to be acceptable as this addition does not affect the form, fit, or function of the cylinders.</p>
<p>6.6.10: Changed paragraph to add allowance for the use of filtered dry air or nitrogen to a maximum dew point of -30 °F for the purposes of purging the cleaned cylinders.</p>	<p>The staff finds this change to be acceptable as nitrogen is an inert gas used to provide undesirable chemical reactions such as oxidation and hydrolysis. Purified nitrogen and</p>

	argon gases are most commonly used as inert gases due to their high natural abundance in air.
6.5.11: Added specific requirements for documenting water weight/capacity on certifications and cylinder name plates, etc. Also delineates specific records required (certifications, as-built-drawings, manufacturer's data report, etc.) and records retention requirements for the same.	The staff finds the added specific requirements to be acceptable as they provide an increased level of detail and description.
7.1.9: Paragraph has been modified to change "Test for Seat Leakage" method and added reference to details for types of test found in standards American Petroleum Institute (API) Std. 527 and Fluid Controls Institute (FCI) 70-2. Additionally, the pressure-test minimum time of 1 minute has been added to this paragraph. Added the requirement that the National Gas Taper (NGT) thread shall be covered with a cap or similar fitting to protect the threads and to keep the valve inlet clean during shipment and storage.	The staff finds the change to be acceptable as the most conservative of safety criteria has not changed, "no leakage shall be permitted." Further, added detail/description of the test has been provided in API 527, Seat Tightness of Pressure Relief Valves. Describes methods of determining the seat tightness of metal- and soft-seated pressure relief valves, including those of conventional, bellows, and pilot-operated designs. In addition, NGT screw thread connections are intended for transmission of dangerous gases and the added requirements for protection are good shop/production/transport safety practices.
7.1.10: Deletes requirement to send one "untinned valve" with each lot of fifty valves or less. (This requirement was Para 6.15.9 in ANSI N14.1-2001).	The staff finds the deletion of this requirement to be acceptable as nothing has changed as the previous 2001 version allowed this requirement to be waived by the purchaser.
7.3: Added "Valve Maintenance on Cylinders in Use" requirements to ANSI N14.1-2012. This subject matter is not addressed in ANSI N14.1-2001 edition. This paragraph provides specific requirements to "retighten packing nut," "packing and/or stem replacement," and "packing nut replacement" instructions for cylinder valves.	The staff finds the added maintenance to be acceptable as it provides specific requirements to promote safety of the component/system and provides good shop/production practices.

CONDITIONS

The following changes have been made to the certificate of compliance:

Conditions No. 6 and No. 7 were updated to authorize use of the 2012 edition of ANSI N14.1 or use of the 2005 edition of ISO 7195 in conjunction with ANSI N14.1.

Condition No. 12 has been revised to reflect the required packaging marks (Package Identification Number USA/9196/B(U)F-96) since a previous authorization for different marking expired on February 2011.

Condition No. 14 was updated to authorize use of Revision No. 26 of the certificate until November 30, 2014.

The References section was updated to include this amendment request.

CONCLUSION

The requested changes do not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Issued with Certificate of Compliance No. 9196, Revision No. 27, on 11/8/2013.