JAN 28 1998
Sta. 37

ENGINEERING DATA TRANSMITTAL

Page 1 of 1

1. EDT 621896

2. To: (Receiving Organization)	3. From: (Originating Organization)	4. Related EDT No.:
Packaging Engineering	Packaging Engineering	NA
5. Proj./Prog./Dept./Div.:	**6. Design Authority/ Design Agent/Cog. Engr.:**	**7. Purchase Order No.:**
03E00	P. C. Ferrell	NA
8. Originator Remarks:		**9. Equip./Component No.:**
For approval.		NA
		10. System/Bldg./Facility:
		NA
11. Receiver Remarks: **11A. Design Baseline Document?** [ ] Yes [X] No		**12. Major Assm. Dwg. No.:**
		NA
ENGINEERING DATA TRANSMITTAL		**13. Permit/Permit Application No.:**
		NA
		14. Required Response Date:

15. DATA TRANSMITTED

(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Approval Desig-nator	(G) Reason for Trans-mittal	(H) Origi-nator Dispo-sition	(I) Receiv-er Dispo-sition
1	HNF-2167		0	Safety Evaluation for Packaging (Onsite) Nitrogen Trailers Propane Tanks	SQ	1		

16. KEY

Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 2. Release 3. Information 4. Review 5. Post-Review 6. Dist. (Receipt Acknow. Required)	1. Approved 2. Approved w/comment 3. Disapproved w/comment 4. Reviewed no/comment 5. Reviewed w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION
(See Approval Designator for required signatures)

(G) Reason	(H) Disp.	(J) Name (K) Signature (L) Date (M) MSIN	(G) Reason	(H) Disp.	(J) Name (K) Signature (L) Date (M) MSIN
		Design Authority	1	/	AJ Kostelnik* AK PERTELCON 1/28/98 S7-12
		Design Agent	1	/	S.S. Shireman* 1/28/98
1	/	Cog.Eng.: PC Ferrell* PC Ferrell 1/28/98 H1-15			
1	/	Cog. Mgr.: JG Field* 1/28/98 H1-15	1	1	*SAFER REVIEW BOARD 1/28/98
1	/	QA: CR Hoover* 1/28/98 H1-15			
1	/	Safety: T Romano* 1-28-98 H1-15			
		Env.			

18.	19.	20.	21. DOE APPROVAL (if required) Ctrl. No.
P. C. Ferrell P.C. Ferrell 1/28/98		J. G. Field 1/28/98	[ ] Approved [ ] Approved w/comments [ ] Disapproved w/comments
Signature of EDT Originator / Date	Authorized Representative for Receiving Organization / Date	Design Authority/ Cognizant Manager / Date	

BD-7400-172-2 (05/96) GEF097

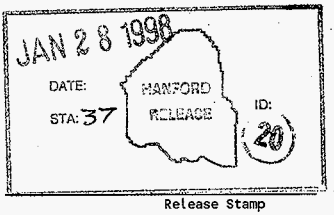
Safety Evaluation for Packaging (Onsite) Nitrogen Trailers Propane Tanks

P. C. Ferrell
Waste Management Federal Services, Inc., Northwest Operations,
Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: EDT 621896 UC: 513
Org Code: 03E00 Charge Code: N4J2E
B&R Code: EW3120074 Total Pages: ~~6~~ 5

Key Words: Safety Evaluation for Packaging, Onsite, Nitrogen Trailers Propane Tanks

Abstract: The purpose of the Safety Evaluation for Packaging (SEP) is the evaluation and authorization of the onsite transport of propane tanks that are mounted on the Lockheed Martin Hanford Corporation Characterization Project's nitrogen trailers. This SEP authorizes onsite transport of the nitrogen trailers, including the propane tanks, until May 31, 1998.



Release Stamp

Janis Aardal 1-28-98
Release Approval Date

Approved for Public Release

SAFETY EVALUATION FOR PACKAGING (ONSITE)
NITROGEN TRAILERS PROPANE TANKS

The purpose of this Safety Evaluation for Packaging (SEP) is the evaluation and authorization of the onsite transport of the propane tanks that are mounted on the Lockheed Martin Hanford Corporation (LMHC) Characterization Project's nitrogen trailers. The three nitrogen trailers (HO-64-4966, HO-64-4968, and HO-64-5170) are rated for 1,361 kg (30,000 lb) and are equipped with tandem axles and pintel hitches. Permanently mounted on each trailer is a 5,678 L (1,500 gal) cryogenic dewar that is filled with nitrogen, and a propane fired water bath vaporizer system, and a 454 L (120 gal) propane tank. The nitrogen trailer system is operated only when it is disconnected from the tow vehicle and is leveled and stabilized. When the trailers are transported, the propane tanks are isolated via closed supply valves.

The propane tanks are rated as storage containers for permanent installation on consumer premises. The propane tanks are not rated for normal transport and are not U.S. Department of Transportation (DOT) specification tanks. However, propane storage containers may be shipped under DOT regulations if they meet the requirements of 49 CFR 173.315(j). This regulation allows for the transport of propane tanks to and from the seller and consumer locations. The following is an evaluation of the propane tank's compliance with 49 CFR 173.315(j).

1. The tank must be constructed in compliance with the requirements of the American Society of Mechanical Engineers (ASME) Code and must be marked to indicate compliance in the manner specified by the respective code.

   Evaluation: The attached data reports verify that the propane tanks meet this requirement. The tanks were fabricated and are currently marked in accordance with the ASME Code.

2. Each tank must be equipped with safety devices in compliance with the requirements for safety devices on containers as specified in the National Fire Protection Association (NFPA) pamphlet no. 58 (NFPA 1995).

   Evaluation: Each propane tank has a safety valve that was installed by the manufacturers per the requirements of NFPA pamphlet no. 58 (NFPA 1995).

3. The containers shall be so braced or otherwise secured on the vehicle as to prevent relative motion while in transit. Valves or other fittings shall be adequately protected against injury during transport.

   Evaluation: The propane tanks are bolted to the trailers and will not move relative to the surrounding equipment mounted on the trailers. A protective shroud is placed over most of the tank valving during transport. The propane tank is located between the nitrogen tank and the vaporizer system, and is inboard from the sides of each trailer. As such, the propane tanks are adequately protected and secured during transport.

4. Storage tanks of less than 473 L (125 gal) may be shipped when charged with propane in compliance with DOT filling density.

   Evaluation: This requirement will need to be verified prior to each shipment.

Although the propane tanks meet the requirements of 49 CFR 173.315(j), they are not rated for continuous transport and are not DOT specification containers. As a result of this finding, this SEP was prepared to authorize interim use of the nitrogen trailers while a permanent solution can be developed.

This SEP authorizes onsite transport of the nitrogen trailers, including the propane tanks until May 31, 1998.

REFERENCES

49 CFR 173.315, 1996, "Compressed gases in cargo tanks and portable tanks," *Code of Federal Regulations*, as amended.

NFPA, 1995, *Standard for the Storage and Handling of Liquefied Petroleum Gases*, Pamphlet No. 58, prepared by the Technical Committee on Liquefied Petroleum Gases and acted on by National Fire Protection Association, Inc., at Fall Meeting, November 14-16, 1994 in Toronto, Ontario, Canada, issued February 7, 1995.

ATTACHMENT: MANUFACTURER'S DATA REPORT FOR THE PROPANE TANKS.

FORM U-1A MANUFACTURERS' DATA REPORT FOR PRESSURE VESSELS
(Alternate Form for Single Chamber, Completely Shop-Fabricated Vessels Only) S/O
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. Manufactured and Certified by AMERICAN WELDING & TANK CO., DIVISION OF PLANT CITY STEEL CO (Name) HARSCO CORP-PLANT #5,5520 OLD BINGHAM HWY,WEST JORDAN,UT 840 (Address)

2. Manufactured for STOCK (Name)

3. Location of Installation (Address)

4. Type: HORIZONTAL (Horiz. or Vert. Strk) 7SA003284-7SA003342 (Mfg's. Serial No.) A-120,REV.8 (Drawing No.) (Nat'l. Bd. No.) 1994 (Year built)

5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction, and workmanship conform to ASME Rules, Section VIII, Division 1 1992 (Year)
1992 (Addenda Date) N/A (Code Case Nos.) N/A (Special Service per UG-120(d))

6. Shell: SA-414-G (Mat'l. (Spec. No., Grade)) .159" (Nom. Thk. (in.)) 0 (Corr. Allow. (in.)) 2' 0" O.D. (Diameter (Inside or Outside)) 4'-6.25" (Length (Overall) (ft. & in.))
SNGL.WLD. (Long (Welded, Dbl., Sngl. Lap, Butt))

7. Seams: WLD.DBL.BUTT FULL (R.T. (Spot, Full)) 100 (Eff. %) -- (H.T. Temp. (°F)) -- (Time (hr.)) OFFSET (Girth (Welded, Dbl., Sngl., Lap, Butt)) SPOT (R.T. (Spot, Partial, or Full)) 1 (No. of Courses)

8. Heads: (a) SA-455 (Mat'l. (Spec. No., Grade)) (b) SA-455 (Mat'l. (Spec. No., Grade))

	Location (Top, Bottom, Ends)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knuckle Radius	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius	Flat Diameter	Side to Pressure (Convex or Concave)
(a)	END	.159"	0			2:1				CONCAVE
(b)	END	.159"	0			2:1				CONCAVE

If removable, bolts used (describe other fastenings) N/A (Matl., Spec No., Gr., Size, No.)

9. MAWP 250 psi at max. temp. 650 °F
Min. design metal temp. -20 °F at 15 psi. Hydro., pneu., or comb. test pressure 375 psi.

10. Nozzles, Inspection and Safety Valve Openings:

Purpose (Inlet, Outlet, Drain, etc.)	No.	Dia. or Size	Type	Mat'l.	Nom. Thk.	Reinforcement Mat'l.	How Attached	Location
OUTLET	2	.75"	FLG	SA-105	3000#	INHERENT	WELDED	SHELL
INLET	1	1.25"	FLG	SA-105	3000#	INHERENT	WELDED	SHELL
GAUGE	1	1.25"	FLG	SA-105	3000#	INHERENT	WELDED	SHELL
SAFETY VALVE	1	.75"	FLG	SA-105	3000#	INHERENT	WELDED	SHELL

11. Supports: Skirt ND (Yes or No) Lugs (No.) Legs 4 (No.) Other (Describe) Attached SHELL/WELDED (Where & How)

12. Remarks: Manufacturers' Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: N/A (Name of part, item number, Mfg's. name and identifying stamp)

120 GAL CAPACITY STORAGE TANK FOR LIQUEFIED PETROLEUM GAS, AG, NON-CORROSIVE SERVICE,24" DIAMETER X 68" O.A.L.,U.L. LISTED, CIRCUMFERENTIAL JOINTS CONSTRUCTED PER UW-13.1(K),CONSTR PER PROVISIONS OF UG-90(C)(2) AND UG-20(F) REAL TIME RADIOSCOPIC EXAMINATION PERFORMED.

CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1. "U" Certificate No. 29724 expires 10/20 94

Date 1/27/94 Co. Name AMERICAN WELDING & TANK CO. (Manufacturer) Signed [signature] (Representative)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by AMERICAN WELDING & TANK CO. at WEST JORDAN, UTAH

I, the undersigned, holding a valid commission issued by The National Board of Boiler and Pressure Vessel Inspectors and the State or Province of UTAH and employed by KEMPER NATIONAL INSURANCE COMPANIES have inspected the component described in this Manufacturers' Data Report on 1/27 , 19 94 , and state that to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with the ASME Code, Section VIII, Division 1. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturers' Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 2-10 , 19 94 Signed [signature] (Authorized Inspector) Commissions UT 416 (Nat'l. Bd. (incl. endorsements), State, Prov. and No.)

FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS

(Alternative Form for Single Chamber, Completely Shop-Fabricated Vessels Only)
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

S/O W-69.5/20

Plant # 0

Manufactured and certified by Trinity Industries Inc. County Road 31 New London MN 56273
(NAME AND ADDRESS OF MANUFACTURER)

Manufactured for STOCK
(NAME AND ADDRESS OF PURCHASER)

3. Location of installation UNKNOWN
(NAME AND ADDRESS)

4. Type HORIZ (HORIZ. OR VERT TANK) 739180. (MFGR'S SERIAL NO.) F-42301-120 r1 (CRN) (DRAWING NO.) 54280 (NAT'L. BD. NO.) 1993 (YEAR BUILT)

5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction, and workmanship conform to ASME Rules, Section VIII, Division 1 1989 (YEAR)

to DEC/90 (ADDENDA (DATE)) (CODE CASE NOS.) (SPECIAL SERVICE PER UG 120 (C))

6. Shell: SA414G (MATL (SPEC. NO., GRADE)) .159" (NOM. THK. (IN.)) 0" (CORR. ALLOW. (IN.)) 11'-11.626" (DIAM. I.D. (FT. & IN.)) 41'-4.125" (LENGTH (OVERALL) (FT. & IN.))

7. Seams: WELD, DBL (CIRC. WELDED, DBL., SNGL., LAP, BUTT) FULL (R.T. (SPOT OR FULL)) 100% (EFF. (%)) (R.T. TEMP. (F)) (TIME (HR.)) UW13.1(k) (GIRTH (WELDED, DBL., SNGL., LAP, BUTT)) UW11(a(5(b (R.T. (SPOT, PARTIAL, OR FULL)) 1 (NO. OF COURSES)

8. Heads: (a) Matl. SA414G (SPEC. NO., GRADE) (b) Matl. (SPEC. NO., GRADE)

Seg. Seams: H.T.: R.T.: Eff:

	LOCATION (TOP/ BOTTOM, ENDS)	MINIMUM THICKNESS	CORROSION ALLOWANCE	CROWN RADIUS	KNUCKLE RADIUS	ELLIPTICAL RATIO	CONICAL APEX ANGLE	HEMISPHERICAL RADIUS	FLAT DIAMETER	SIDE TO PRESSURE (CONVEX OR CONCAVE)
(A)	ENDS	.158"	0"			2:1				CONCAVE
(B)										

If removable, bolts used (describe other fastenings) (MATL., SPEC. NO., GR., SIZE, NO.)

9. MAWP 250 psi at Maximum Temp. 125 DEG. F
Min. design metal temp -20 DEG.F AT 250 psi test pressure 500 psi HYDROSTATIC
Nozzles, inspection and safety valve openings:

PURPOSE (INLET, OUTLET, DRAIN)	NO.	DIAM. OR SIZE	TYPE	MATL.	NOM THK	REINFORCEMENT MATL.	HOW ATTACHED	LOCATION
MULTIVLV	1	.75"	CPLG	SA105	FLGD		UW16.2(c	
FLOAT GA	1	1"	CPLG	SA105	FLGD		UW16.2(c	
FILL	1	1.25"	CPLG	SA105	FLGD		UW16.2(c	
RELIEF	1	.75"	CPLG	SA105	FLGD		UW16.2(c	
LIQ.PLUG	1	.75"	CPLG	SA105	FLGD		UW16.2(c	
LIQ OUT	1	.75"	CPLG	SA105	FLGD		UW16.2(C	

11. Supports: Skirt NO (YES OR NO) Lugs (NO.) Legs 4 (NO.) Other L.LUGS, DOME CLPS (DESCRIBE) Attached HEAD, SHELL, WELDED (WHERE AND HOW)

12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report: (NAME OF PART, ITEM NUMBER, SERIAL NUMBER, NAME AND IDENTIFYING STAMP)

120 WG AG LPG TANK FOR NON-CORROSIVE SERVICE.
CONSTRUCTED UNDER THE PROVISIONS OF UG-90 (C) (2).
LINE 9: MDMT/PSI BASED ON UG-20 (F).
*REAL TIME RADIOSCOPIC EXAM.LONG SEAM

CERTIFICATE OF SHOP COMPLIANCE

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1. "U" Certificate of Authorization No. 10,919 which expires 01/07, 19 95
Date 02/19/1993 Co. Na. Trinity Industries Inc. (MANUFACTURER) Signed (REPRESENTATIVE)

CERTIFICATE OF SHOP INSPECTION

Vessel constructed by Trinity Industries Inc. at New London MN 56273

I the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of Minnesota and employed by Western National Mutual Ins Co

have inspected the pressure vessel described in this Manufacturer's Data Report on 02/19, 19 93, and state that to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Code, Section VIII, Division 1. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied concerning the pressure vessel described in the Manufacturers' Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any personal injury or property damage or a loss of any kind arising from or connected with this inspection.

Date 02/19/1993 Signed (AUTHORIZED INSPECTOR) Commissions MN 93-69 NAT'L BD. 7957 B (NAT'L BOARD (INCL. ENDORSEMENTS), STATE, PROV, AND NO.)

TRI 437-CON (1-90)

DISTRIBUTION SHEET

To	From	Page 1 of 1
Distribution	Packaging Engineering	Date 01/27/98
Project Title/Work Order		EDT No. 621896
Safety Evaluation for Packaging (Onsite) Nitrogen Trailers Propane Tanks (HNF-2167, Rev. 0)		ECN No. NA

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
R. M. Boger	S7-12	X			
J. E. Corbett	S7-01	X			
R. N. Dale	S7-12	X			
R. E. Falon	S7-12	X			
T. R. Farris	S7-12	X			
P. C. Ferrell	H1-15	X			
J. G. Field	H1-15	X			
R. E. Freeman	S7-12	X			
C. R. Hoover	H1-15	X			
W. J. Kennedy	S7-03	X			
A. J. Kostelnik	S7-12	X			
J. S. Lee	S7-03	X			
T. Romano	H1-15	X			
J. S. Schofield	S7-12	X			
D. H. Shuford	S7-01	X			
J. F. Sickels	S7-03	X			
HNF-2167 File	H1-15	X			
Central Files	B1-07	X			