

FACULTAD DE INGENIERÍA UNAM DIVISIÓN DE EDUCACIÓN CONTINUA







División de Educación Continua, Facultad de Ingeniería, UKAM,

CURSOS ABIERTOS

DIPLOMADO EN RECIPIENTES A PRESIÓN

MÓDULO III

MARCADO Y CERTIFICACIÓN DE RECIPIENTES A PRESIÓN CONFORME A LA SECCIÓN VIII, DIV. 1 DEL CÓDIGO ASME CA 247

TEMA
APUNTES GENERALES

EXPOSITORES: ING. ORLANDO R. RIVERA MENDOZA
DEL 23 AL 27 DE ABRIL DE 2007
PALACIO DE MINERÍA

UNIVERSIDAD NACIONAL AUTONOMA DE MEXICO FACULTAD DE INGENIERIA DIVISIÓN DE EDUCACIÓN CONTINUA

CURSO / MODULO

MARCADO Y CERTIFICACION DE RECIPIENTES A PRESION

CONFORME A SECCION VIII, DIV.1 DEL CODIGO ASME

INSTRUCTOR
ING. ORLANDO R. RIVERA





FIG. UG-116 OFFICIAL SYMBOLS FOR STAMP TO DENOTE THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS' STANDARD

ASME CODE SECTION VIII, DIV.1 SYMBOL STAMPS FOR PRESSURE VESSELS

STAMPING DIRECTLY ON THE VESSEL

WHEN CODE STAMPING IS APPLIED DIRECTLY ON THE VESSEL, STAMPING MUST:

- DONE USING LETTERS AND FIGURES AT LEAST 5/16" HIGH.
- BE ARRANGED PER FIGURE UG-118 WHERE SPACE PERMITS.

STAMPING ON A NAMEPLATE

WHEN CODE STAMPING IS APPLIED TO A NAME-PLATE, THE STAMPING MUST COMPLY WITH THE FOLLOWING:

- IT IS ARRANGED PER UG-118.
- THE CODE SYMBOL AND MANUFACTURER'S SERIAL NUMBER MUST BE STAMPED.
- LETTERS AND FIGURES MUST BE AT LEAST 5/32" HIGH.
- THE NAMEPLATE MUST BE ATTACHED IN A CONSPICUOUS PLACE.
- THE SYMBOL MAY BE STAMPED PRIOR TO ATTACHMENT TO THE VESSEL HOWEVER, THE PROCEDURE MUST BE ACCEPTED BY THE A.L.
- THE A.I. DOES NOT HAVE TO WITNESS THE STAMPING OF THE CODE SYMBOL HOWEVER, HE MUST VERIFY THAT THE NAMEPLATE IS ATTACHED TO THE PROPER VESSEL.

REQUIRED NAMEPLATES

A NAMEPLATE IS REQUIRED ON:

- FERROUS VESSELS LESS THAN 1/4" THICK.
- NON-FERROUS VESSELS LESS THAN 1/2". THICK.

NOTE: A NAMEPLATE MAY BE USED AS AN OPTION ANYTIME, WHETHER REQUIRED OR NOT.

MODE OF INSPECTION

SECTION VIII, DIVISION 1 RECOGNIZES TWO TYPES OF AUTHORIZED INSPECTION. ONE IS BY THE AUTHORIZED INSPECTOR AND THE OTHER IS BY THE OWNER-USER INSPECTOR. THE STAMPING WOULD APPEAR AS FOLLOWS:

USER



USER INSPECTED SYMBOL

AUTHORIZED INSPECTION

TYPE OF CONSTRUCTION

THE TYPE OF CONSTRUCTION, I.E. WELDED, BRAZED, ETC., MUST BE INDICATED ON THE NAMEPLATE UNDER THE "U" SYMBOL. THE TYPES OF CONSTRUCTION AND THEIR SYMBOLS ARE AS FOLLOWS:

ARC/GAS WELDED W

• BRAZED B

• FORGE WELDED F

• RESISTANCE RES WELDED

W

POSTWELD HEAT TREATMENT

THE AMOUNT OF POSTWELD HEAT TREATMENT MUST BE INDICATED ON THE NAMEPLATE UNDER THE "U" SYMBOL. THE SYMBOLS ARE AS FOLLOWS:

• ENTIRE VESSEL

H.T.

• PART OF VESSEL

P.H.T.



W

L

RT-1

H.T.

CODE NAMEPLATE UG-118

THE ARRANGEMENT OF THE INFORMATION ON A CODE NAMEPLATE IS SHOWN IN FIGURE UG-118.

\sim	Certified by
SIIJ	Name of Manufacturer
ررك	psi ator (Max. allowable working pressure)
W (if arc or gas welded) RT (if radio- graphed)	OF atpsi (Min. design metal temperature)
HT (if postweld heat treated)	(Manufacturer's serial number)
· · · .	(Year built)

PARTS OF VESSELS

WHEN ONLY PART OF A VESSEL IS SUPPLIED BY A MANUFACTURER, THE WORD PART MUST APPEAR UNDER THE "U" SYMBOL STAMP. UG-116(h) GOES ON TO STATE THAT THE MANUFACTURER'S NAME, PRECEDED BY THE WORDS "CERTIFIED BY", AND SERIAL NUMBER MUST APPEAR ON THE NAME-PLATE.

REMOVABLE PARTS

UG-116(I) STATES "REMOVABLE PRESSURE PARTS SHALL BE PERMANENTLY MARKED IN A MANNER TO IDENTIFY THEM WITH THE VESSEL OR CHAMBER OF WHICH THEY FORM A PART. THIS DOES NOT APPLY TO MANHOLE COVER, HANDHOLE COVERS AND THEIR ACCESSORY PARTS PROVIDED THE MARKING REQUIREMENTS OF UG-11 ARE MET".

MINIATURE VESSELS

THE REQUIREMENTS FOR MINIATURE VESSELS ARE FOUND IN U-2(j). IT STATES THAT VESSELS MEETING THE CRITERIA GIVEN MAY BE BUILT WITHOUT INSPECTIONS BY AN A.I.. TO BUILD THESE VESSELS A FABRICATOR MUST HOLD THE "U" OR "S" STAMP. THE CRITERIA ARE:

- FULL R.T. IS NOT REQUIRED.
- QUICK ACTUATING CLOSURES MAY NOT BE USED.
- IT MUST BE 5 CU. FT. AND 250 P.S.I OR LESS OR,
- 1.5 CU. FT. AND 600 P.S.I. OR LESS.

THESE VESSELS MUST COMPLY WITH ALL OF THE RULES OF THE CODE WITH THE EXCEPTION OF INSPECTION BY AN A.I.. SOME JURISDICTIONS WILL NOT ACCEPT THESE TYPES OF VESSELS.

UG-90(c)(2) VESSELS

THE VESSELS COVERED BY THIS PARAGRAPH ARE IDENTICAL, MASS-PRODUCED VESSELS. THE A.I. IS NOT INVOLVED IN ALL INSPECTIONS. THE MANUFACTURER'S PERSONNEL PERFORM SOME OF THE INSPECTOR'S DUTIES. THE MANUAL MUST BE ACCEPTABLE TO THE AGENCY, THE JURISDICTION AND AN A.S.M.E. DESIGNEE. ANY REVISIONS ARE SUBJECT TO THE APPROVAL OF THESE ORGANIZATIONS. THE DATA REPORT MUST STATE CONSTRUCTED TO THE RULES OF UG-90(c)(2).

APPLICATION FOR AUTHORIZATION

ANY ORGANIZATION DESIRING A CERTIFICATE OF AUTHORIZATION SHALL APPLY TO THE B&PV COMMITTEE, ON FORMS ISSUED BY ASME, SPECIFYING THE STAMP DESIRED AND THE SCOPE OF CODE ACTIVITIES TO BE PERFORMED. THE APPLICATION SHALL IDENTIFY THE AUTHORIZED INSPECTION AGENCY PROVIDING CODE INSPECTION IN PLANT/FIELD SITE.

ISSUANCE OF AUTHORIZATION

AUTHORIZATION TO USE CODE SYMBOL STAMPS MAY BE GRANTED OR WITHHELD BY ASME IN ITS ABSOLUTE DISCRETION. IF AUTHORIZATION IS GRANTED, AND THE PROPER ADMINISTRATIVE FEE PAID, A CERTIFICATE OF AUTHORIZATION EVIDENCING PERMISSION TO USE ANY SUCH SYMBOL, EXPIRING ON THE TRIENNIAL ANNIVERSARY DATE THEREAFTER, EXCEPT FOR UM CERTIFICATES, WILL BE FORWARDED TO THE APPLICANT.

INSPECTION AGREEMENT

TO OBTAIN AND MAINTAIN A CERTIFICATE OF AUTHORIZATION TO USE THE U AND UM STAMPS, THE MANUFACTURER MUST HAVE IN FORCE AT ALL TIMES AN INSPECTION CONTRACT OR AGREEMENT WITH AN AUTHORIZED INSPECTION AGENCY TO PROVIDE INSPECTION SERVICES.

THE INSPECTION CONTRACT IS A WRITTEN AGREEMENT BETWEEN THE MFR. AND THE AIA WHICH SPECIFIES THE TERMS AND CONDITIONS UNDER WHICH THE INSPECTION SERVICES ARE TO BE FURNISHED AND WHICH STATES THE MUTUAL RESPONSIBILITIES OF THE MANUFACTURER AND THE AUTHORIZED INSPECTORS.

QUALITY CONTROL SYSTEM

ANY MANUFACTURER OR ASSEMBLER HOLDING OR APPLYING FOR A CERT. OF AUTHORIZATION TO USE THE U OR UM, SHALL HAVE, AND DEMONSTRATE, A QUALITY CONTROL SYSTEM TO ESTABLISH THAT ALL CODE REQUIREMENTS, INCLUDING MATERIAL, DESIGN, FABRICATION, EXAMINATION (BY THE MFR.), INSPECTION (BY THE A.I.) PRESSURE TESTING AND CERTIFICATION WILL BE MET.

EVALUATION FOR AUTHORIZATION AND REAUTHORIZATION

BEFORE ISSUANCE OR TRIENNIAL RENEWAL OF AN ASME CERTIFICATE OF AUTHORIZATION, THE MANUFACTURER'S FACILITIES AND ORGANIZATION ARE SUBJECT TO A JOINT REVIEW BY A REPRESENTATIVE(S) OF HIS INSPECTION AGENCY AND AN INDIVIDUAL CERTIFIED AS AN ASME DESIGNEE.

A WRITTEN DESCRIPTION OR CHECKLIST OF THE QUALITY CONTROL SYSTEM WHICH IDENTIFIES WHAT DOCUMENTS AND WHAT PROCEDURES THE MANUFACTURER WILL USE TO PRODUCE A CODE ITEM SHALL BE AVAILABLE FOR REVIEW.

THE PURPOSE OF THE REVIEW IS TO EVALUATE THE APPLICANT'S QUALITY CONTROL SYSTEM AND ITS IMPLEMENTATION. THE APPLICANT SHALL DEMONSTRATE SUFFICIENT ADMINISTRATIVE AND FABRICATION FUNCTIONS OF THE SYSTEM TO SHOW THAT HE HAS THE KNOWLEDGE AND ABILITY TO PRODUCE THE CODE ITEMS COVERED IN HIS QUALITY CONTROL SYSTEM. FABRICATION FUNCTIONS MAY BE DEMONSTRATED USING CURRENT WORK, A MOCK-UP, OR A COMBINATION OF THE TWO.

RENEWAL OF CODE SYMBOL STAMPS

CODE SYMBOL STAMPS ARE NORMALLY RENEWED EVERY THREE YEARS. THE RENEWAL IS BASED ON A JOINT REVIEW PERFORMED BY THE AGENCY AND AN A.S.M.E. DESIGNEE. AN EXCEPTION TO THE TRIENNIAL REVIEW IS THE UM CERTIFICATE. IT IS RENEWED ANNUALLY BASED ON A JOINT REVIEW THE FIRST ISSUE AND AN AUDIT BY THE AGENCY FOR THE TWO FOLLOWING YEARS. THE CYCLE THEN STARTS AGAIN.

MANUFACTURER'S DATA REPORTS

THE DATA REPORTS USED TO DOCUMENT CODE COMPLIANCE ARE:

- U-1 BASIC DATA REPORT FOR VESSELS.
- U-1A ALTERNATIVE REPORT FOR SINGLE CHAMBERED, SHOP FABRICATED VESSELS ONLY.
- U-2 PARTIAL DATA REPORT FOR PARTS.
- U-2A ALTERNATIVE PARTIAL DATA REPORT.
- U-3 CERTIFICATE OF COMPLIANCE FOR UM VESSELS.
- U-4 SUPPLEMENTARY SHEET

10.16

NONMANDATORY APPENDIX W GUIDE FOR PREPARING MANUFACTURER'S DATA REPORTS

W-1 GUIDE FOR PREPARING MANUFACTURER'S DATA REPORTS

W-2 INTRODUCTION

- (a) The instructions contained in this Appendix-are to provide general guidance for the Manufacturer in preparing Data Reports as required in UG-120.
- (b) Manufacturer's Data Reports required by ASME Code rules are not intended for pressure vessels that do

not meet the provisions of the Code, including those of special design or construction that require and receive approval by jurisdictional authorities under the laws, rules, and regulations of the respective State or municipality in which the vessel is to be installed.

- (c) The instructions for the Data Reports are identified by circled numbers corresponding to numbers on the sample Forms in this Appendix.
- (d) Where more space than has been provided for on the Form is needed for any item, indicate in the space "See remarks" or "See attached U-4 Form," as appropriate.

NONMANDATORY APPENDIX W

FORM U-1 MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

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This form (E00108) may be obtained from the Order Dept., ASME, 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300.

2004 SECTION VIII — DIVISION 1

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NONMANDATORY APPENDIX W

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

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Date	_ Co. name _		(Ma	(58) nu facturer)		Się	ned	(58) (Representat	ivel			
(6)		· · · · · · · · · · · · · · · · · · ·	CERTIE		SHOP/FIELD	INSPECTIO	nn					
Vessel constructed	by		- CEITTI	TOWNE OF		_ st						
I, the undersigned, t		ommission is:	sued by th					ors and/or the	State or Province of			
have inspected the		cribed in this f	Manufactu						, and state that,			
to the best of my kn							l in accordance with	ASME Code,				
1. By signing this c												
described in this Ma		-						e in any man	ner for any personal			
injury or property d	-	s of any kind	arising fro	on or conf			ion,	@	•			
Date	Signed _	(Aut	horized Inspe	ctor)	Comn	nissions _	(Nat'l Board (incl. en		te, Prov. and No.1			

This form (E00117) may be obtained from the ASME Order Dept., 22 Law Drive, Box 2300, Fairfield, NJ 07007-2300.

2004 SECTION VIII - DIVISION I

FORM U-2 MANUFACTURER'S PARTIAL DATA REPORT A Part of a Pressure Vessel Fabricated by One Manufacturer for Another Manufacturer As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

=																		
1.	Manufactured	and ca	rtified b	/						(Name and ac	0							
2.	()" Manufactured	for								(2)			actureri					
_						_			(Nan	e and address	_	eser)						
3.	Location of ins	stallatio	n							(Name and	(a) d addres	1E)						<u>-</u>
4.	Туре:	Descripti	on of vess	el pari (stu	1 Dard-Duece	head	tube bur	rdle)1		(Mfg's	0					(CRN)	 :	
							_			tenig s	M M	~. ຄ				,,,,,,		
•		11. Bd No								(Dra	wing pr	epared	b ₇ ;			(Yes	r built)	
5. /	ASME Code, S	ection 1	VIII, Div.	1	Edition a	nd Ade) denda (d.	are)]		- 400	ode Case	No.1			Social	(§) Service	96) per UG-120	(d)
item	s 6–11 incl. to Shell (a) No.	be com	pleted	or singl	e wall ves	sels,	jackets	of jack					_	rs, or cham	ber of	mult	ichamber	vessels
		Course(s) Material Thickness Long. Joint (Cat. A) Circum.												1-7			11	
No.																Heat Tre	Time	
		40																
\vdash	0	<u> </u>	0 0 0 0 0								89	®			Ø			
<u> </u>		ــــــــــــــــــــــــــــــــــــــ										<u> </u>	<u> </u>		L	<u> </u>		
7. F	deads: (a)		(Mat'l Spe	30 No., Grad	de or Type) (i	② 1.T. —	Time &	Temp.)		~ (b) ~		(Mat'l	Spec. No.,	Grade or Type) (H.T. –	- Fime	& Temp.)	
	Location (Top,		kness		dius	Ellipt	Т	Conical	_ H	mispherical	Fu	$\neg \neg$		Pressure			atagory A	
	Bottom, Ends)	Min.	Corr.	Crown	Knuckle	Rat		pex Ang	•	Radius	Diam		Convex	Concave	Туре			ne Eff.
(a)		<u> </u>	@	<u> </u>	<u> </u>		\dashv		\perp		ļ <u>.</u>			 	<u> </u>	9)		
(6)		<u> </u>	<u> </u>								<u> </u>			<u> </u>	L	Ь.		
lf ren	novable, boits	used (c	lescribe	other fa	stening)					(M	lat'l Spe	c. No.,	2) Grade, Sa	e, No.)	 _			
8. 7	ype of jacket				(3)					acket closus	· · · · ·				<u> </u>			
													(0	escribe as oge				
	bar, give dim	•																
9. N	AAWP (interr	101)	(external)	_ psi a	it max. ten	np	(intern	uel)	(auterre	'F. Mi	n. desi	ign m	etal ten	np		°F at		psi.
10. la	mpact test						3						at test	temperatur	re of .		®	'F.
	mpact test									qj				_				
11. H	lydro., pneu., (or comb	, test p	ess.		G	<u> </u>		. Proc	f test						<u> </u>		
items	12 and 13 to	be com	pleted f	or tube	sections.	_				_			_	•				
12. T	ubesheet:	itationary	(Mat'l Spe	c. No II	(Dia., In. ((18) (aubjec	I to pres	s.)j	ŧ	(21) Horn, thik., in.)			(Corr. #	(36) Allow., in.)		ttachm	ent (welded	or bolted)]
	_		®			(II) Dia. s	_			om. (thk., in.)			②	@				
		_		. No.1]		Dis., u	a)		(N	om. thk in.)			(Corr. Alk	gw., in.)		(A)	tachment)	
13. T	ubes: (Mar'l Sp	20 No., C	rade or Ty		(O.D	in.			Nom. th	L. (n. of gauge)	— -		(Num	beri		Пур	(Streight o	(U)
	14-18 incl. to				r chamber	s of j	jackete	d vesse	ls or a	hannels of i	heat e	xchar	gers.					
14. S	hell (a) No.	of coun	se(s)				((b) Ove	rall len	gth (ft & in.):					-		
	Course	(s)			Material		Thici	ness		Long. Joint (Cat. A)		Circur	n. Joint (Cat.	А. В. А	l Ci	Heat Tre	atment
No.	Diameter, in.	Length	(ft & in.)	Spec./	Grade or T	уре	Nom.	Corr.	Туре	Full, Spot,	None	Eff.	Туре	Full, Spot,	None	Eff.	Temp.	Time
			<u></u>	├	<u> </u>					-			(E)				Ø	
	<u> </u>		<u> </u>	 -	<u> </u>	\dashv	(1)	(9)	<u> </u>	(4)			(B)		\dashv		<u>.</u>	

NONMANDATORY APPENDIX W

FORM U-2 (Back)

15. i	leads: (a)		(idat'i Sp	sc. No., Gro	ds or Type!	PT. — Time	A Temp.)	(b)	(Mat	Spec No.	Grade or Type) (H.T. —	- Time & 1	emp.l	
	· · · · · ·		kness		dius			· · · · · ·	T	Side to	Pressure		Cate	pory A	
	Location (Top, Bottom, Ends)	Min.	Corr.	Crown	Knuckle	Elliptical Ratio	Conical Apex Angle	Hemispherical Radius) Flat Diameter	Convex		Туре	·	pot, None	Eff.
(a)		-	-							-					
(b)															
	novable, bolts	used (describ	e other fa	astening)			,	Mat'l Spec. No	., Grade, Size	L No.I				
16. R	AAWP	ol)	(externs	psi a	at max. te	mp	ternal) (ex	temal) . F. M	in. design	metal tem	np	 '		_	
17. li	mpact test			Undered	le ima or oo	SI)	ponent(s) impact	Instad!		_ at test t	temperatur	e of _		΄	_ F .
	lydro., pneu., o łozzles, inspect	_		oress.			_	roof test							
							Material	Nozzle Thick	2200		Hon	v Attach	ad		
(tole	Purpose st, Outlet, Drain, (atc.i	No.	Diamete or Size	r Flang Type	• ├		 	Corr. Re	inforcemen Material	Nozzl		lange	Location (Insp. Op	
 		-				(3)		1	-	***************************************		-			
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				-		1					1				
<u> </u>															
L								<u> </u>						,	
20. S	upports: Skirt	<u> (9)</u>	L	ıgs	<u>D</u> Le	ıs <u> </u>	Others	<u> </u>		Attached			<u>′</u> 60		<u> </u>
	emarks:			(N	Lo.	(No.)	(Describ	a) ·		-	(Who	re end ho	w)	
£ 1. n	emarks:														
_							(6)							
_														,	
_														'	
_		_													
															—¬
(8)								/FIELD COMP							}
	certify that the								naterial, co	mstructio	n, and wo	rkmans	ship of	this press	inte
Vess	el part conforn	n to tn	a ASM	E COGE 10	or Pressui	e vesseis	, Section VIII	, Division 1.							1
U C	ertificate of Aut	horiza	tion No	· ——		 -	Expires		·		- ,	-			
Date	·	_, Na	me	<u>-</u>		(Manufactus	eri	s	gned		(Repre	sentative	p}		
◉						CERTIFIC	ATE OF SHO	P/FIELD INSPE	CTION						
i, the	undersigned,					ed by the			nd Pressure	Vessel tr	spectors a	nd/or t	the Stat	e or Provi	nce
	inspected the						anufacturer's								,
	state that, to th									ure vesse	part in ac	cordan	ce with	ASME Co	ode,
	ion VIII, Divisio														
	oressure vessel												shali be	liable in	anγ
man	ner for any per	sonati	injury c	r proper	ty damag	e or a los	s of any kind	arising from	or connecte	ed with th	is inspecti	on.			l
O *										-	(6)			
Date		`	Signed		(Author	zed Inspecto	r)	Commission	in in	st'l Board inc	d, endorseme		Province	and No.)	

2004 SECTION VIII - DIVISION 1

FORM U-2A MANUFACTURER'S PARTIAL DATA REPORT (ALTERNATIVE FORM)
A Part of a Pressure Vessel Fabricated by One Manufacturer for Another Manufacturer
As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1

1. 8	Aanufactured a	nd ce	rtified by	,							0							
										Name and ad	dress of	Manul	acturer)					
2. 1	Manufactured f	or							(Name	and address of	of Purcha	ser)						
3. L	ocation of inst	allatio	n							<u> </u>	<u> </u>							
`. T	уре:			(7)					(Name and	(I)	3				•		
-7. 1	ype	Descripti	on of vess	part (she	II. two-piece	head, i	tube bund	lel		(Mfg's	serial No				_	(CRN)		
-	(Nat')	(12) , Bd. No				(0000	(10) ring No.)				Mind bie	<u> </u>	ford .			(Year	beritti	
5. A	SMŁ Code, Se			1		0				(010	<u>(1)</u>	P ************************************	-,,			(B)	®	
_					Edition	and Add	denda (der	,.			ode Care	No 1			Special (17)	Service	per UG-1200	d1]
6. S			rse(s):	~ —	<u> </u>					gth (ft & in								
	Course				Material		Thic			ong. Joint (1. Joint (Cat		$\overline{}$	Heat Tre	
No.	Diameter, in.	Lengt	h (ft & in) Spec.	/Grade or	Туре	Nom.	Corr.	Туре	Full, Spot,	None	EH.	Туре	Full, Spot,	None	Eff.	Temp.	Time
├	(18)		(19)		(20)		<u></u>		(2)	(24)			(3)	<u> </u>			<u></u>	
<u> </u>			<u> </u>				(8)	<u> </u>	9			<u> </u>			_			
	f	-		(20)		(P)	<u> </u>	ــــــــــــــــــــــــــــــــــــــ				ا	<u> </u>					
,, n	eads: (a)		(Mat'l Spec		e or Typel		Time & T	emp ((b)	1	Mat'l S	Spec. No , (Grade or Type	(H.T. –	- Time I	Temp.)	
]	Location (Top,	Thic	kness	Rac	lius	Ellipt	ical -	Conical	Hen	nispherical	Fla	\Box	Side to	Pressure		Ca	tegory A	
اا	Bottom, Ends)	a) Min. Corr. Crown Knuckle Ratio Apex Angle Radius Diameter Conv							Convex	Concave	Туре	Full,	Spot, Non	e Eff.				
(a)		®	@	®	(9)	<u> </u>			+-		<u> </u>					 	(1)	
(6)																		
If rem	removable, bolts used (describe other fastening)																	
8. N	8. MAWP 38 89 psi at max, temp. 89 15. Min, design metal temp. 39 99 15 at psi.																	
		el)	(external)	•		•	(interna	d) (external)								®	
9. 10	npact test	·		lindice	e yes or no	and the	compone	entia) impo	CI tested	1)			at test t	emperatur	e ot .			F.
10. H	ydro., pneu., o	r comi	b. test p	ress,			<u>)</u>		Proof	test								
11. N	ozzlas, inspect	on, ar	d safety	valve o	penings:											_		
	Purpose			Diameter	Fiang	36 L	Mat	erial	N	ozzle Thickn	055	Rein	forcemen	Hov	v Attac	hed	Loca	ition
(Inle	t, Outlet, Orain,	stc.)	No.	or Size	Тур		Nozzle	Flange	N	om. C	orr.		faterial	Nozzi	<u> </u>	lange	linsp.	Open.)
					┵ <u></u>	-	<u></u>	<u> </u>									 	
		\rightarrow			- -@		Θ			⊕			<u> </u>	<u>@@</u>	2+9	90		2
		- 	~}-												-		 	
						,	0	<u> </u>		(6)			 -			<u></u>		
12. S	upports: Skirt	(Yes or	no. Lu	gs <u>(</u>	2 Le	gs	(Na.)	. Other	5	(Describe)	At	tached		(Wh	are and	how)	
	emarks:																	
_								_										
9		_	=	==:-	<u> </u>	CERTI	FICATE			LD COMPI	JANCE							
_	certify that the	stater	ments m	ade in t				OF SH	DP/FIE				nstructio	n, and wo	rkman	ship o	of this pre	essure
We vess	el part conforr	n to th	e ASME	Code fo	his repo or Pressu	rt are re Ves	correct ssels, S	OF SHO and the action V	DP/FIE st all d	etails of n ision 1.			nstructio	n, and wo	rkman	ship (of this pro	essure
We vess	el part conform ertificate of Aut	n to th thoriza	e ASME	Code fo	his repo or Pressu	rt are re Ves	correct ssels, S	OF SHO and the action V	DP/FIE st all d	etails of n	ateria		nstructio	n, and wo	rkman	ship o	of this pre	essure
We vess	el part conform ertificate of Aut	n to th thoriza	e ASME	Code fo	his repo or Pressu	rt are	correct ssels, S	OF SHO and the action V	DP/FIE st all d	etails of n ision 1.	ateria		nstructio		rkman		of this pro	essure
We vess U Ca Date	el part conform ertificate of Aut	n to th thoriza	e ASME	Code fo	his repo or Pressu	rt are re Ves (Manu	correct ssels, Se E	OF SHO and the ection V xpires	DP/FIE at all d	etails of mission 1.	nateria gned .		nstructio				of this pre	essure
We vess U Ce Date	el part conforr ertificate of Au	n to th horiza Na	ition No.	Code fo	his repor	rt are re Ves (Manu	correct ssels, SeE decturer)	OF SHO and the ection V xpires	OP/FIE at all d III, Div	etails of mission 1. Signature Sign	nateria	l, cor	·	(Ropre	sentsby	e)	- <u>-</u>	
We vess U Ce Date	el part conform ertificate of Aut	n to th thoriza Na holdin	tion No.	Code fo	his repor	rt are re Ves (Manu	correct ssels, SeE decturer)	OF SHO and the ection V xpires	OP/FIE at all d III, Div	etails of mission 1. Signature Sign	nateria	l, cor	·	(Ropre	sentsby	e)	- <u>-</u>	
We vess U Ca Date On the	el part conformentificate of Automates	n to th thoriza Na holdin and	e ASME	Code fo	his repor or Pressu	(Manu CERT	correct ssels, So E	OF SH and thi ection V xpires E OF SH tional B	OP/FIE OP/FIE	etails of mision 1. Sique ED INSPE	gned	l, cor	·	(Ropre	sentsby	e)	- <u>-</u>	
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We vess U Ca Date I, the of have	el part conformation per l'interesse de la conformation de la conforma	n to the chorization Na holding and pressure best	e ASME tion No. time eg a valid l employ ure vess of my ki	Code for	ssion issues the same state of	(Manu (Manu CERT ued by in thi	correct ssels, So E infectureri TFICATE y the Na is Manual	OF SHE and the ection V xpires OF SH tional B	OP/FIE OP/FIE oard o	etails of mission 1. Sique ELD INSPECT 6 Boiler and a Report of constructed	gned . CTION d Press of .	sure '	Vessel Ir	(Repressing spectors a	ing/or	the St	ate or Pro	ovince , Code,
We vess U Ca Date Date I, the of have and: Secti	el part conformatificate of Automotive undersigned, inspected the state that, to the con VIII, Divisionerssure vessel	holdin holdin and pressi e best in 1. B	e ASME org a valid employ ure vess of my ki y signin described	Code for	his repor pr Pressu ssion issi lescribed e and be rtificate i Manufac	(Manual CERT ued by in the life, the neither turer's	correct ssels, S E decurer IFICATE y the Na is Manual e Manual er the in s' Oata	OF SHE and the ection V xpires E OF SH itional B ifacture facture spector Report.	OP/FIE or all dill, Div	etails of rision 1. Signature Signa	ction d Press of this pressent the the the control of the control	sure '	Vessel In re vessel y warrar pector n	Repression active expression for the empty of the empty o	ing/or corder sed or	the St	ate or Pro th ASME ed, conce	Code,
We vess U Ca Date Date I, the of have and: Section	el part conformatificate of Autoritificate of Au	holdin holdin and pressi e best in 1. B	e ASME org a valid employ ure vess of my ki y signin described	Code for	his repor pr Pressu ssion issi lescribed e and be rtificate i Manufac	(Manual CERT ued by in the life, the neither turer's	correct ssels, S E decurer IFICATE y the Na is Manual e Manual er the in s' Oata	OF SHE and the ection V xpires E OF SH itional B ifacture facture spector Report.	OP/FIE or all dill, Div	etails of rision 1. Signature Signa	ction d Press of this pressent the the the control of the control	sure '	Vessel In re vessel y warrar pector n	Repression active expression for the empty of the empty o	ing/or corder sed or	the St	ate or Pro th ASME ed, conce	Code,
We vess U Ca Date Date I, the of have and: Section	el part conformatificate of Automotive undersigned, inspected the state that, to the con VIII, Divisionessure vessel ner for any per	holdin holdin and pressi e best in 1. Bi part o	e ASME org a valid employ ure vess of my ki y signin described	Code for	ssion issi e and be intificate to Manufacty damage	(Manual Manual M	correct ssels, S E decurer IFICATE y the Na is Manual e Manual er the in s' Oata	OF SHE and the ection V xpires E OF SH itional B ifacture facture spector Report.	OP/FIE at all dill, Div	etails of rision 1. Signature Signa	gned CTION d Press of this pr r make	essure sans e ins	Vessel In re vessel y warran pector n I with th	Repression active expression for the empty of the empty o	cordar sed or bloyer on.	the Stance wire implications shall	th ASME	Code,

NONMANDATORY APPENDIX W

FORM U-3 MANUFACTURER'S CERTIFICATE OF COMPLIANCE
COVERING PRESSURE VESSELS TO BE STAMPED WITH THE UM SYMBOL, SEE U-1(j)
As Required by the Provisions of the ASME Code Rules. Section VIII. Division 1

		Α	s Requ	ired by	the Pr	ovisi	ons (of the	ASM	E Code	e Ru	les,	Sec	tion V	III, Divisi	<u>on 1</u>			
1.	Manufactured a	and ce	rtified by	/						(Name an		0		• • • •					
	Manufactured 1				<u> </u>				-		2)			Maureri					
	Location of inst								(Nam	e and addre		Purchas	4 r)						
			_									ddress			·····				
4.	Гуре:	Horiz., ve		re)		(Tank	(S) L separa	rtor, etc.)					ecity)				(Mfg's	serial No.1	
			(CRN)					(Drawing	No.					(Yes	r built)				
5. /	ASME Code, Se	ection	VIII, Div.	1			<u> </u>							(4)					
6. 5	Shell (a) No.	of cou	ırse(s): .		16 (16)	tion and		fa Idateli (b) Ove	rali ler	ngth (ft 8	k indi			ode Case	No.) ①				
	Cours				Material	T		kness		Long Jo				Circun	n. Joint (Cat	. A. B.	& C)	Heat Tre	atment
No.	Diameter, in.	Lengt	n (ft & in	Spec./	Grade or 1	уре	Nom.	Corr	Туре	Full, S	pot, N	lone	Eff	Туре	Full, Spot,	None	Eff.	Temp.	Time
 	 	ļ		 				 	<u> </u>		_			-			 -		
├─	 		<u> </u>	+-	<u> </u>		<u> </u>	(2)	(19)	-	<u> </u>	\dashv		(3)	39			10	
7. 1	leads: (a)			(1) (7	<u> </u>		٠	<u> </u>	_ (b) _				L,			·		
_					or Typel (I	i.t. — T	ime & 1	emp)				4)	Aarı S		Grade or Type) (H.T			
	Location (Top, Thickness Radius Elliptical Conical Hemispherical Flat Side to Pressure Bottom, Ends) Min. Corr. Crown Knuckla Ratio Apex Angle Radius Diameter Convex Concave Type												tegory A Spot, No	ne Eff.					
(a)													①						
(b)																			
If ren	removable, bolts used (describe other fastening) (Marti Spec. No., Grade. Size, No.)																		
8. 1	(Mar'i Spec. No., Grade. Size, No.) 3. Type of jacket																		
H	bar, give dime	nsion	s; if bolte	ed descri	be or ske	itch _	_										O, DEI, 1		
	AAWP						(intern	-13	10-00-00	F.	Min.	desig	n m	etal tem	ıр. <u>ज</u>		F at		psi.
	mpact test	•	(0.0.141.1.01)			_ (9						_	at test t	emperatur	e of .		<u> </u>	 f.
11 H	lydro., pneu., a	r comi	h toet ne		yes or no e					idi f test 🔔					_				
	lozzles, inspect															-			
<u> </u>	Purpose			Diameter	Flange	.T.	Ma	terial		Nozzle Th	icknes	53	Reinf	orcemen	t Hov	v Attac	hed	Loc	etion
(Inte	et, Outlet, Drain,	etc.)	No.	or Size	Туре		uzzle	Flang		Nom	Cor			aterial	Nozzi	• !	Flange	(Insp	Open.)
-	<u> </u>			(Q)	0		<u>(8)</u>	(45)	+	(4)		- -		<u>@</u>	(4)(4)	. + ,	(a) (b)	 	 (a)
-				<u>. </u>	1-8		<u> </u>		+			-		<u> </u>	199	" [`	<u> </u>		2
]														
			-					 										 -	
				6			<u></u>	<u> </u>							<u></u>		ெ	<u> </u>	
13. 5	upports: Skirt	(Yes or	no) Lug]S	2 Leg	JS	(No.)	_ Other	rs	(Desc	ribel			ached			ere and		
	lanufacturer's l											nspec	tors	have be	en furnish	ed for	the fo	ollowing	items of
	ne report: (List		me or pa	art, item	number,	nng s.	. name	and id	(<u>(3)</u>	ng num	uer)								
_																			
15. R	emarks:								(S)										
_									<u>~</u> _										
_																			
<u>(B)</u>							TIC:		CHOS		10510								
-	ertify that the	statem	ents ma	de in this	report a					COMPL uls of de			rial.	constru	ction, and	workn	nansh	ip of this	vessel
	orm to the ASI				•					J. 40									
	Certificate of A				-		-					-							1
Date	·	Na	me								Sign	ed							
_	ed			 19		(Manufa	cturer)				٠				(Repre	sentativ	re)		
	CTC 1			d Individual															

2004 SECTION VIII - DIVISION 1

FORM U-4 MANUFACTURER'S DATA REPORT SUPPLEMENTARY SHEET As Required by the Provisions of the ASME Code Rules, Section Vill, Division 1

Manufactured and certified by	· 0	<u> </u>	
	(Name and address)	of Manufacturer)	
Manufactured for	(Neme and address of Pure	chaser)	
Location of installation)	
	iliams and addr		
Type: (i) (ii) (iii) ((Farrit, separister, heed eath , etc)) 🚱 I's send No.1
⊙ ⊛	⊚ ⊗	09 99	
ICANI	1Drawing No.1	CHERT Box, No. 1	(Year built)
Data Report Itam Number	Remark	<u>. </u>	<u></u>
Tall Notice	Remark	<u> </u>	
❷			
	9		
			
			
			
			
			
			
tificate of Authorization: Type	No I	Expires	
Name	(Manufacture)	Signed	(Representative)

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NONMANDATORY APPENDIX W

TABLE W-3 INSTRUCTIONS FOR THE PREPARATION OF MANUFACTURER'S DATA REPORTS

<u>U-1</u>	. U-1A	Applies U-2	to Form U-2A	U-3	U-4	Note No.	Instruction
×	х	Х	Х	Х	Х	1	Name and street address of manufacturer as listed on ASME Certificate of Authorization.
х	x			x	X	0	Name and address of purchaser.
×	×	x	×	x	x	0	Name of user, and address where vessel is to be installed. If not known, so indicate (e.g., "not known" or "built for stock").
x	x			х	X	•	Type of installation intended (horizontal, vertical, or sphere).
. x	X.	•		X	X	(3)	Description or application of vessel (tank, separator, jacketed kettle, heat exchanger, etc.)
٠				X		•	Indicate vessel capacity. See U-1(j).
•••		×	X			0	Description of vessel part (i.e., shell, two-piece head, tube bundle).
X	x	х	x	x	x	•	Manufacturer's serial number. See UG-116(a)(1)(b)(5).
X	x	x	x	х	X	•	Canadian registration number, where applicable.
x	x	X	×	x	x	100	Indicate drawing number(s), including applicable revision number, that cover general assembly and list of materials. For Canadian registered vessels, the number of the drawing approved by the provincial authorities.
·		×	x			11	Organization that prepared drawing, if other than the Manufacturer listed in No. 1.
×	×	x	x	- • •	x	12	Where applicable, the National Board number from the Manufacturer's Series of National Board numbers sequentially without skips or gaps. National Board numbers shall not be used for owner-inspected vessels.
x	X	X	X	X		13	ASME Code, Section VIII, Division 1, Edition (e.g., 1989) and Addenda (e.g., A89, A90, etc.) used for construction.
X	x	X	X	X		œ [°]	All Code Case numbers and revisions used for construction must be listed. Where more space is needed use "Remarks" section or list on a supplemental page.
X	x	X	x	•••	•••	(15)	Note any special service by Code paragraph as specified in UG-120(d) (e.g., lethal, low temperature, unfired steam boiler, direct fired).
	x	x	x	x	•••	(1)	Total number of courses or sections between end closures (heads) required to make one shell. In the "No." blocks in the table below, under "Courses," indicate the number of courses with identical information.
x	x	×	x	X		17)	Length of the shell (courses), excluding heads, in feet and inches.
x	×	x	X	X	•••	19	Indicate the dimensions of the course(s) as follows: (a) cylindrical as inside or outside diameter; (b) transition as inside or outside diameter at the largest and smallest ends; (c) squares or rectangle as the largest width and height; (d) all other shapes define as appropriate or attach a sketch or drawing. Where more space is needed use "Remarks" section or list on a supplemental page.
x	• • •	x	x	x		19	Length of each course(s) in the shall.
x	x	x	x	x		29	Show the complete ASME specification number and grade of the actual material used in the vessel. Material is to be as designated in Section VIII, Division 1 (e.g., "SA-285C"). Exceptions: A specification number for a material not identical to an ASME specification may be shown only if such material meets the criteria in the Code in conjunction with the

Case number shall be shown.

may be shown only if such material meets the criteria in the Code in conjunction with the Foreword of this Section. When material is accepted through a Code Case, the applicable

TABLE W-3 (CONT'D) INSTRUCTIONS FOR THE PREPARATION OF MANUFACTURER'S DATA REPORTS

U-1	U-1A		to Form U-2A	U-3	U-4	Note No.	Instruction
x	X	×	х	х		(1)	Thickness is the nominal thickness of the material used in the fabrication of the vessel shelf. It includes corrosion allowance.
x	×	x	×	x		②	State corrosion allowance (see UG-25).
X	×	×	x	x		0)	Type of longitudinal joint (e.g., Type 1, 2, 3, 4, 5, or 6) per Table UW-12. In case of brazing, explain type of joint per Fig. UB-16. If seamless, indicate joint type as S, and E for electric resistance welded.
×	X	×	X	. x	• •	29	Category A (longitudinal) welds — identify degree of examination (radiographic or if applicable ultrasonic) employed: full, spot, or none (see UW-11). Also identify the joint efficiency associated with the circumferential stress calculations from Table UW-12 or para. UW-12. Where more space is needed, use "Remarks" section, supplemental page, or RT map, as applicable. In the case of parts, there is no need to identify the joint efficiency associated with these welds. (See Note ①) for heads of welded construction joints.)
x	x	x	x	X		39	Type of circumferential joint (e.g., Type 1, 2, 3, 4, 5, or 6) per Table UW-12. In the case of brazing, explain type of joint per Fig. UB-16. For multiple course vessel, the Category B welds in the shell and head-to-shell joint (Category A, B, C) shall be listed bottom to top or left to right as shown on drawing listed in .
x	X	X	X	X	•••	3 6	Categories A, B, and C (circumferential) welds — Identify degree of examination (radiographic or if applicable ultrasonic) employed: full, spot, or none (see UW-11) or spot radiography in accordance with UW-11(a)(5). Where more space is needed, use "Remarks" section, supplemental page, or RT map, as applicable. In the case of parts, there is no need to identify the joint efficiency associated with these welds.
x	×	x	×	x		19	When heat treatment is performed by the Manufacturer, such as postweld heat treatment, annealing, or normalizing, give the holding temperature and time. Explain any special cooling procedure under "Remarks."
×	x	X	x	x		23)	Specified minimum thickness of the head after forming. It includes corrosion allowance.
x	x	X	x	x		29	Indicate the crown radius (inside or outside) for torispherical heads.
х	x	х	x	x		39	Indicate the knuckle radius (inside or outside) for torispherical or toriconical heads.
x	×	×	x	x		33	For heads of welded construction joints, indicate the following: (a) type of joint in the head (Category A), e.g., Type 1, 2, 3, etc., per Table UW-12; in the case of brazing, explain the type of joint per Fig. UB-16. (b) identify degree of examination (radiographic or if applicable ultrasonic) employed: full, spot, or none. Where more space is needed, use "Remarks" section, supplemental
x	x	x	x	X		33	page, RT map, as applicable. Bolts used to secure removable head or heads of vessel. Indicate the number, size, material specification (grade/type).
x		x		x		99	Note type of jacket by reference to Fig. 9-2, where applicable.
x		x		x		3	Explain type of jacket closures used by reference to Fig. 9-5.
x	×	x	x	x		99	Show maximum allowable working pressure (internal or external) for which vessel is constructed. See UG-98.
x	x	х	x	x		3 9	Show maximum temperature permitted for vessel at MAWP. See (3).

NONMANDATORY APPENDIX W

TABLE W-3 (CONT'D) INSTRUCTIONS FOR THE PREPARATION OF MANUFACTURER'S DATA REPORTS

U-1	U-1A	Applies U-2	to Form U-2A		: 'U-4	Note No.	Instruction
X	х						
		X	X	X	• • •	ø	Indicate the minimum design metal temperature (MDMT).
×	X	X	X	X		39	Indicate if impact testing was conducted (yes or no) and the component(s) that were impact tested and the impact test temperature. Where more space is needed, use "Remarks" section or list on a supplement page. If no, indicate applicable paragraph(s) Esuch as UG-20(f) UCS-66(a), UCS-66(b), or UCS-66(c), and UHA-51 or UHT-6].
X	×	X	· x	x		9	Indicate the type of test used (pneumatic, hydrostatic, or combination test, as applicable and specify test pressure at the top of the vessel in the test position. Indicate under "Remarks' if the vessel was tested in the vertical position.
x	•••	x	x	x		•	When proof test is required by Code rules, indicate type (e.g., brittle-coating, bursting, etc.), specific Code requirements satisfied (UG-101, Appendix 9, Appendix 17), proof test pressure, and acceptance date by the Inspector. Subsequent Data Reports shall indicate under "Remarks" the test date, type and acceptance date by the Inspector.
x	×	x	×	x	• • •	•	Nozzles, inspection, and safety valve openings; list all openings, regardless of size and use. Where more space is needed, list them on a supplemental page.
x	x	x	x	х		•	Indicate nozzles by size (NPS) and inspection openings by inside dimensions in inches.
X	x	x	X	X		•	Data entries with description acceptable to the Inspector. For flange type an abbreviation may be used to define any generic name. Some typical abbreviations:
•							Flanged fabricated nozzle Cl. 150 flg.
							Long weld neck flange CI. 300 lwn. Weld end fabricated nozzle w.e.
							Lap joint flange . Cl. 150 lap jnt.
x	×	x	×	x	٠	•	Show the material for the nozzle neck.
x		x	x	x		③	Show the material for the flange.
x	x	X	x	x	• • •	•	Nominal thickness applies to nozzle neck thickness.
×	•••	×	X	X	•••	•	Show the complete ASME specification number and grade of the actual material used for the reinforcement material (pad). Material is to be as designated in Section VIII, Division 1. Exceptions: A specification number for a material not identical to an ASMF specification may be shown only if such material meets the criteria in the Code and in conjunction with the Foreword of this Section. When material is accepted through a Code Case, the applicable Case number shall be shown.
x	×	x	x	x	• • • •	40	Data entries with description acceptable to the Inspector, A code identification of Fig. UW-16.1 (sketch no.) may be used to define the type of attachment.
x	•••	x	X	x	• • •	•	Categories C and D welds — Identify degree of examination (radiographic or if applicable ultrasonic) employed: full, spot, or none (see UW-11). Also identify the joint efficiency associated with the weld from Table UW-12. When more space is needed, use "Remarks" section supplemental page or RT map, as applicable.
x	×	Χ.	x	х		99	"Location" applies to inspection openings only.
X	X	x	x	x		99	Describe: (a) type of support (skirt, lugs, etc.); (b) location of support (top, bottom, side, etc.);

(c) method of attachment (bolted, welded, etc.).

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TABLE W-3 (CONT'D) INSTRUCTIONS FOR THE PREPARATION OF MANUFACTURER'S DATA REPORTS

					NO FC		PREPARATION OF MANUFACTURER'S DATA REPORTS
<u>U-1</u>	U-1A	Applies U-2	to Form U-2A	U-3	U-4	Note No.	Instruction
x	x			X		99	To be completed when one or more parts of the vessel are furnished by others and certified on Data Report U-2 or U-2A. The part manufacturer's name and serial number required by UG-116 should be indicated.
. x	x	×	x	X	• • • •	99	Space for additional comments including any Code restrictions on the vessel, or any unusual requirements that have been met, such as those in U-2(g), UG-11, UG-46, UG-53, UG-79, UG-90(c)(2), UG-99(e)(2), UG-115, UG-119(g), UG-120(d), UCS-56(f)(1), and UCL-55 or in other notes to this Table. Indicate stiffening rings when used. See W-2(d) whên additional space is needed.
• • •	• • •			•	x	99	Fill in information identical to that shown on the Data Report Form to which this sheet is supplementary. Indicate the type of Certificate of Authorization, number, expiration date, and signature of the company representative.
•••	•••	•••	• • • •		X	9	Fill in information for which there was insufficient space on the Data Report Form as indicated by the notation "See attached U-4 Form" on the Data Report. See W-2(d). Identify the applicable Data Report item number.
• • •		x	x			⊛	Indicate data, if known.
		×	x			99	Indicate the extent, if any, of the design function performed, UG-120(c)(2).
X	x	×	x	• •	•••	99	Certificate of Shop/Field Compliance block is to show the name of the Manufacturer as shown on his ASME Code Certificate of Authorization. This should be signed in accordance with the organizational authority defined in the Quality Control System (10-4).
• • •	• • •	• • •		X	• •	99	thm:manufacturer's authorization number to use the UM Symbol from his Certificate of Authorization.
X	x	X	×	•••	•••	@	Certificate of Shop/Field Inspection block is to be completed by the Manufacturer and signed by the Authorized Inspector who performs the inspection.
	•••	x .	, x			•	If the Inspector has a valid commission for the state or province where the Manufacturer's shop is located, the name of that state or province. If the Manufacturer is located in a non-Code state or province, insert the name of the state or province where the Inspector took his original examination to obtain his National Board Commission, provided he still has a valid commission for that state or province. Otherwise, if no valid commission, show the name of the state or province where he has a valid commission authorizing him to make inspection.
X	×			•••	X	62	The Inspector's National Board Commission number must be shown when the pressure vessel is stamped National Board; otherwise show only his state or province commission number.
•••		x .	x		X	0	The Inspector's National Board Commission number must be shown when the pressure vessel part is stamped National Board; otherwise show only his state or province commission number.
X						⊌	Certificate of Field Assembly Compliance block for field work or assembly is to be signed by the Manufacturer's representative in charge of field fabrication. This should be signed in accordance with the organizational authority defined in the quality control system (10-4).
x					•••	69	Certificate of Field Assembly Inspection block is for the Authorized Inspector to sign for any field construction or assembly work. See (a) for National Board Commission number requirements.
x						6	Indicate those items inspected in the field that were not inspected in the shop.
		• • •	• • •	x		⊕	Signature of Certified Individual indicates ASME Code symbol has been applied in accordance with the requirements of Section VIII, Division 1.

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NONMANDATORY APPENDIX DD GUIDE TO INFORMATION APPEARING ON CERTIFICATE OF AUTHORIZATION (SEE FIG. DD-1)

ITEM

DESCRIPTION

- 1
- a. The name of the Manufacturer or Assembler; this description could include "doing business as" (DBA) or an abbreviation of the name.
- b. The full street address, city, state or province, country, and zip code.
- This entry describes the scope and limitations, if any, on use of the Code Symbol Stamps, as illustrated below.

U Code Symbol Stamp

- 1. Manufacture of pressure vessels at the above location only.
- 2. Manufacture of pressure vessels at the above location only. (This authorization includes multiple duplicate pressure vessels.)
- 3. Manufacture of pressure vessels at the above location only. (This authorization does not cover welding or brazing.)
- 4. Manufacture of pressure vessels at the above location and field sites controlled by that location.
- 5. Manufacture of pressure vessels at the above location and field sites controlled by that location. (This authorization does not cover welding or brazing.)
- 6. Manufacture of pressure vessels at field sites controlled by the above location.
- 7. Manufacture of pressure vessels at field sites controlled by the above location. (This authorization does not cover welding or brazing.)
- 8. Manufacture of pressure vessels (cast iron only) at the above location only.

UM Code Symbol Stamp

- 1. Manufacture of miniature vessels at the above location only.
- 2. Manufacture of miniature vessels at the above location only. (This authorization does not cover welding or brazing.)
- 3. Manufacture of miniature vessels (cast iron only) at the above location only.

UV Code Symbol Stamp

- 1. Manufacture of pressure vessel pressure relief valves at the above location only.
- 2. Manufacture of pressure vessel pressure relief valves at the above location only. (This authorization does not cover welding or brazing.)
- 3. Assembly of pressure vessel pressure relief valves at the above location. (This authorization does not cover welding or brazing.)

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ITEM	DESCRIPTION					
3	The date authorization was granted by the Society to use the indicated Code Symbol Stamp.					
•	The date authorization to use the Code Symbol Stamp will expire.					
⑤	A unique Certificate number assigned by the Society.					
©	Code Symbol granted by the Society, i.e., U pressure vessels, UM miniature vessels, UV pressure relief valves.					
Ø , ®	The signatures of the current chairman and director.					

CERTIFICATE OF AUTHORIZATION

This certificate accredits the named company as authorized to use the indicated symbol of the American Society of Mechanical Engineers (ASME) for the scope of activity shown below in accordance with the applicable rules of the ASME Boiler and Pressure Vessel Code. The use of the code symbol and the authority granted by this Certificate of Authorization are subject to the provisions of the agreement set forth in the application. Any construction stamped with this symbol shall have been built strictly in accordance with the provisions of the ASME Boile and Pressure Vessel Code.

COMPANY ①

SCOPE ②

AUTHORIZED 3

EXPIRES 4

CERTIFICATE NUMBER (5)

SYMBOL 6

7

CHAIRMAN OF THE BOILER AND PRESSURE VESSEL COMMITTEE

8

LIRECTOR, ASME ACCREDITATION

EXS m

The American Society of Mechanical Engineers

FIG. DD-1 SAMPLE CERTIFICATE OF AUTHORIZATION

02/

UNIVERSIDAD NACIONAL AUTONOMA DE MÉXICO FACULTAD DE INGENIERIA DIVISIÓN DE EDUCACIÓN CONTINUA

DATOS DEL INSTRUCTOR

ING. ORLANDO R. RIVERA

Tel./Fax: (55) 5776-6524 E- mail: orlanriver@hotmail.com

Es Ingeniero Mecánico Titulado egresado de la Escuela Superior de Ingeniería Mecánica y Eléctrica del Instituto Politécnico Nacional: Cuenta con una experiencia profesional de más de 20 años en diseño, fabricación, inspección, prueba, certificación, montaje, reparación y expeditación de calderas de potencia, recipientes a presión, sistemas de tubería y componentes de plantas nucleoeléctricas.

Ha calificado ante el Gobierno del Estado de Texas, Ohio y Pennsylvania y The National Board of Boiler and Pressure Vessel Inspectors de Norte América como Inspector Autorizado, Supervisor de Inspectores Autorizados, e Inspector Nuclear Autorizado de ASME.

Su participación en actividades con tres Agencias de Inspección Autorizadas de ASME le han permitido preparar y asesorar a más de 40 empresas en México, Colombia, Venezuela, Brasil y Argentina en la obtención y renovación de los diversos Certificados de Autorización y Sellos de ASME y National Board. Ha impartido el Diplomado de Ingeniería de Calderas y Recipientes a Presión en la División de Educación Continua de la Facultad de Ingeniería de la Universidad Nacional Autónoma de México, y ha presentado ponencias y conferencias en Talleres Internacionales de Capacitación en Calderas, Recipientes à Presión y Temas Afines de la Asociación Mexicana de Ingenieros Mecánicos y Electricistas, A.C. (AMIME).

Ha sido miembro activo del Comité de Calderas y Recipientes a Presión de AMIME desde 1978, actual Presidente de este Cómite y Consultor de varias compañías nacionales e internacionales.