FRA Form 4 OMB No. 2130-0505

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DOLLED ODECITICATION CADD

				ION CARD			
Locomotive No.	;Boil	er No		;Date bu	ilt		
Boiler built by:							
Owned by:							
Operated by:							
Type of boiler:	;Dome, where located:						
		BOILER S	HIRVEV	ПАТА			
Where condition is called	ed for, use: New - New 1				Little or no wear and/or corrosion;		
Fair - Obvious wear and				3,	,		
		D 11					
3.5 / 1.1	T CM		Shell She				
Material:	Type of Ma		Ca	arbon Content	Condition		
1 -4 (64)	(wrought from carbon's	teel, of alloy steel)					
1st course (front)							
2nd course			· —				
3rd course			. <u> </u>				
Rivets	D			n/a	n/a		
	Documentation of how	v material was de	etermined sha	ill be attached to this	iorm.		
Measurements:	A	At Seam	Thinnest				
Front flue sheet,	thickness	n/a					
1st course,	thickness	_		,ID	,ID		
2nd course,	thickness				,ID		
3rd course,	thickness			,ID	,ID		
,				, <u> </u>	re not cylindrical give ID at each end		
Is boiler shell circu							
	ttened, state location						
Are all flatte	ened areas of shell sta	ayed adequate	ely for the	pressure allowed	by this form?		
NV. 4 C 4 N/L	1D' C:1	т	4	D1-			
	ad Ring: Sides				F		
width of water spa	ace at sides of fire b	ox measured	i at center	line of boller:	Front,Back		
		Firebox and	l Wrannei	·Sheets			
Firebox sheets:	Thickness	THEOUX and		aterial	Condition		
Rear flue sheet	1 IIICKIICSS		11	acoriui	Condition		
Crown		_		_			
Sides		_					
Door							
Combustion chambe	 er	_					
Inside throat							

Wrapper sho	eets:				
Throat					
Back head					
Roof					
Sides					
	_		team Dome		
				op opening diameter	
Middle cylind	drical portion - ID	O, Open	ning in boiler shell, longitu	dinally	
D	_	Th: -1	M-4:-1	G 1:4:	
Dome sheets	:	Thickness	Material	Condition	
Base	1: 1 4:				
	drical portion			-	
Top					
Lid					
Boiler shell l					
steam dome	•				
Is liner part o	f longitudinal sea	m?			
Arch Tu	ibes, Flues, Circi	ılators, Thermic Si	phons, Water Bar Tubes,	Superheaters, and Dry Pipe	
A 1 4 1	OD	11.41 * 1	1	11.7	
Arch tubes:	OD	_ ,wall thickness _	;number	;conditions	

Flues:	11 .1 : 1	1 .1	,	1	
OD	,wall thickness	,length	;number	;condition	
OD	,wall thickness	,length	;number	;condition	
OD	,wall thickness	,length _	;number	;condition ;condition	
C:l-4	OD	all 4h.ialv.aaa		diti ana	
Circulators:	OD	_ ,wan unickness _	;number	,conditions	
Thermic sipl	hons: numbe	a r	;Plate thickness	condition	
Thermic sipi					
	Neck	<u></u>	,neck unickness	;condition	
Water ber tı	abose OD	, wall thickne	agg		
water par ti	ibes. OD	, wan unckin			
Sunarhaatar	units directly co	nnected to boiler w	ith no intervening valve:		
				;condition	
	,1 400 01	, wan and	, iiuiiiuci	,0011011011	
Dry pine sub	ject to pressure:				
J P-Pc suc	Jest to Probbate				
OD	wall thickness	materi	al :conditi	on	

Stay Bolts, Crown Bar Rivets, and Braces

Stay bolts:					
Smallest crown stay			37	1.4.	
		,avg. spacing	X	;condition	
Smallest stay bolt dia	meter	,avg. spacing	X	;condition	
Smallest combustion	4		37	1:4:	
chamber stay bolt dia Measurement at smallest d		,avg. spacing	X	condition	
Measurement at smallest d	nameter				
Crown bar bolts & 1					
Roof sheet rivets, small	allest dia.	,avg. spacing	X	;condition	
Roof sheet bolts, sma	ıllest dia.	,avg. spacing	X	;condition	
Crown sheet rivets, si	mallest dia	,avg. spacing	X	;condition	
Crown sheet bolts, sn	nallest dia.	,avg. spacing	X	;condition	
Braces:			Total Cros	ss Sectional Area of Braces	
	NT 1	T	A , 1	F : 1 (D: (G)	
Backhead	Number	Total Area Stayed	Actual	Equivalent Direct Stay	
Throat sheet	-	-			
	-	-			
Front tube sheet				-	
	Safe	ety Valves, Heating Surf	face, and Grate A	area	
Safaty valvas: Total :	number of safe	ety valves on locomotive			
Valve Size	Manufactur	-	No. valves of this size and manufacture		
vuive bize	Manaractar	CI	110. Varves of thi	S SIZE and manaracture	
Heating Surface:			* 1 * 1		
				vet steam being heated and on the	
other side with gas of fo	enactory being	cooled, shall be measured	on the side receiving	g neat.	
Firebox and Combust	tion Chamber		S	square feet	
Flue Sheets (less flue	ID areas)		square feet		
Flues			square feet		
Circulators			square feet		
Arch Tubes			square feet		
Thermic Siphons			square feet		
Water Bar Tubes		· · · · · · · · · · · · · · · · · · ·	square feet		
Superheaters (front en	nd throttle onl		•	square feet	
Other		- · · · · · · · · · · · · · · · · · · ·	•	square feet	
Total 1	Heating Surf	ace		square feet	
G 4		<u> </u>			
Grate area:	squai squai	re feet			

Water Level Indicators, Fusible Plugs, and Low Water Alarms

Height of lowest reading of	gauge glasses abov	e crown sheet:	
Height of lowest reading of	gauge cocks above	crown sheet:	
Is boiler equipped with fusi	ible plug(s)?	, number	
Is boiler equipped with low	water alarm(s)?	, number	
		Calculations	
Staybolt stresses:			
Stay bolt under greate Location			psi
		bolt under greatest load, max. stress	psi
Combustion chamber Location	stay bolt under grea	test load, maximum stress	psi
Braces:			
	_	t load, maximum stress	psi
Gusset brace under grant Location	reatest load, maximu	im stress	psi
Shearing stress on rivets:			
Greatest shear stress			psi
Location (cou	rse #)	; Seam Efficiency	_
Boiler shell plate tension:	at acation of plate in	lon situ din al assur	
Greatest tension on no		; Seam Efficiency	psi
Location (cou	15C #)	, Scall Efficiency	-
Boiler plate and componen	ts, minimum thickn	ess required @ tensile strength:	
Front tube sheet	<u></u> @	Rear flue sheet	<u> </u>
1st course at seam	<u></u> @	1st course not at seam	<u> </u>
2nd course at seam	<u></u> @	2nd course not at seam	<u> </u>
3rd course at seam	<u>a</u>	3rd course not at seam	<u>a</u>
Roof sheet	<u></u> @	Crown sheet	<u> </u>
Side wrapper sheets	<u></u> @	Firebox side sheets	<u>@</u>
Back head	<u>a</u>	Door sheet	<u>a</u>
Throat sheet	<u>a</u>	Inside throat sheet	<u> </u>
Combustion chamber	<u> </u>	Dome, top	<u> </u>
Dome, middle	<u> </u>	Dome, base	<u> </u>
Arch tubes	<u> </u>	Dome, lid	<u> </u>
Water bar tubes	<u> </u>	Thermic siphons	<u> </u>

Dry pipe			Circulators	@
mustbe furnished.2. Any shell dim		in thickness may no	be adequate for support	5,000 psi for wrought iron, supporting documentation of or by other structures, particularly where threads
Boiler Steam (Generating Capa	city:		pounds per hour
Pounds of Steam	y be used as a guide Per Hour Per Squa Hand fired Stoker fired Oil, gas or pulveriz	are Foot of Heatin		
		Rec	ord of Alterations	
Description of	Alteration			Date of Alteration
		Re	ecord of Waivers	
Waiver No.	Section No. Affected		Scope and	Content of Waiver

in this documen	nt and all necessing pressure of _		is, this boiler	of Locomotive (Initial & nun	nber)	is
Data used to ve							
Data was dita wa	rify the foregoir	ng specification	ns is current a	nd accurate. Ba	sed upon the	information of	contained
Calculations do	one by:			Verified by:_			
		_					

Make working sketch here or attach drawing of longitudinal and circumferential seams used in shell of boiler, indicating on which courses used and give calculated efficiency of weakest longitudinal seam.