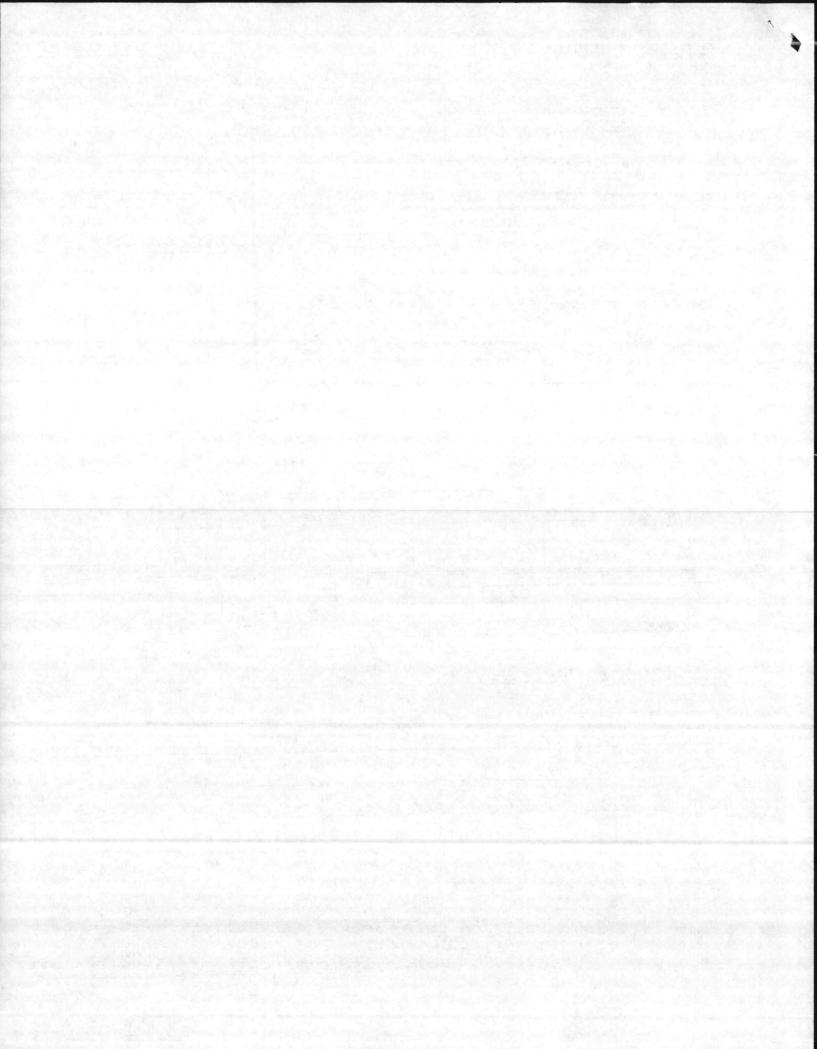
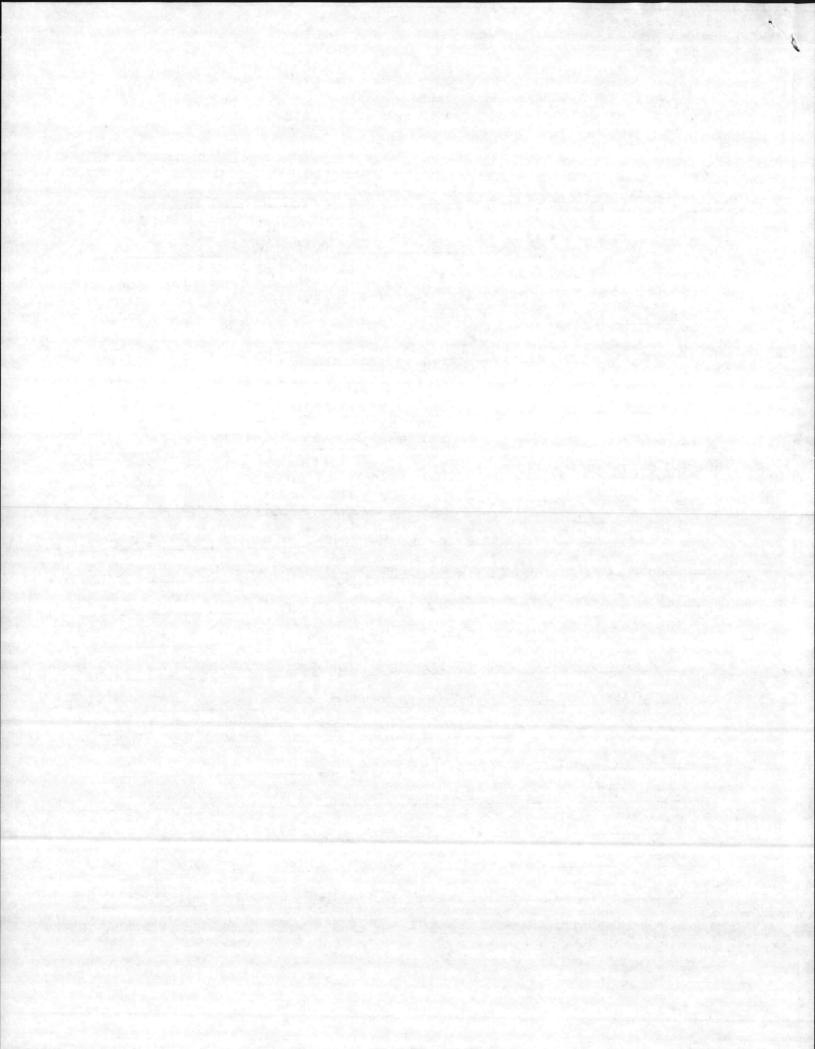
INSPECTION REPORT-BOILERS DATE OF INSPECTION Supersedes NAVDOCKS 2544 S/N 0105-LF-004-0000 17-24 JUNE 1987 TYPE OF INSPECTION INTERNAL & B INTERNAL & EXTERNAL WITH PRESSURE TEST C OPERATIONAL 1. FROM BASE MAINT. OFFICER CERTIFICATE ISSUED YES NO CAMP LEJEUNE N. C. NAVFACENGCOM NORFOLK, VA BOILER DATA 3. MANUFACTURER NUMFAC 239 LEAVER BROOKS 6. MFG. MODEL NO. N.B. 6/798 6,900 11. PRESSURE DESIGNED OPERATING COAL OIL GAS 150 50 WATER SATISFACTORY UNSATISFACTORY 17. BOILER USE 18. COMBUSTION CONTROL (Mig. Name) EXPORT FIRE VE 6.0 \* EXCESS O2 AFTER BOILER 300 F . AFTER HEAT TRAP SAFETY DEVICES SAFETY VALVES 21 MANUFACTURER 22. NUMBER AND SIZE 23. PSI SETTING 24 CONDITION YUNKIP STEAM PRESSURE GAUGE 25. MANUFACTURER 26. CORRECTIONS CLEAVER BROOKS WATER LEG CONSTANT\_ pet: OTHER FIRING EQUIPMENT ITEM IN SERVICE ALTERNATE 28. MANUFACTURER LEAVER BROOKS 29. TYPE NOTILE SPRAY - AIR ATOM 30 FUEL GRADE 31. INSPECTOR'S COMMENTS
W/S HEAVY SCIALE (SCHOGE) IN LOWER HALF OF BOLER, ADJUST CHAMKAL PROGRAM TO CLEAN UP BOILGH. 32. ATTACHMENT(S) (Check) 33. SIGNATURE COPY OF INSPECTOR'S REPORT SPECIAL COMMENTS \* U.S. GOVERNMENT PRINTING OFFICE: 1982 - 605 - 965



5ND LANTDIV 9-4730/6 (Rev. 8/68) Boiler Inspection - Addendum to NAVFAC 9-11014/41

	DATE: 1-23-87
ACTIVITY: MERCL	
BUILDING NO: BA 106	BOILER NO:
Based on the existing condition and is estimated that the boiler has a re	present rate of deterioration, it emaining life of
The following corrective action is re	ecommended:
DOOR WAS OPEN AND SEVEN	CK DOOR OF BOILER, INSPECTION
AT 2 Nd PASS. THE 2 NO	PASS TUBES HAD BEEN
RE-ROLLED ON 1-9-87. 5	EVERAL TUBES WERE SEPERATED
FROM TUBE SHOET AND STIC	CHING THROUGH TUBE SHEET
ABOUT 1/8" PAST BEBO WHERE	
All TUBES WERE SEAR WELL	DED BY HARRIS CONST. CO.
( PERRY SHAW) WHO INSTALLED	BOILER. HYDRO AT 225 PST
NO LEAKS HT TUBE ENOS , (RETESTE	TO BOILER 3 TIMES TO GET SHIPS-
FACTORY TEST DUE TO YORS	WEEPS AT WEIRS ) All THESE IN
2 Nd PASS WERE WELDED (46).	
1-26-87	
BOILER ON LINE AND STEAME	NG ABOUT 1/3-1/2 CAPACITY.
STACK TEMP. 350-400 %. BOI	GR IS NOW HOT AND HAS BE -
PANDED ABOUT /32- /32 AS C/	DSE AS I CAN MEASURE.
	Nom Lanier





## UNITED STEED'S MARINE CO. . S BASE MAINT FANCE CIVISION MARINE CORPS BASE CAMP LEJEUNE, NORTH CAROLINA 28842-5000

IN REPLY REFER TO

4335 MAIN

2 3 JAN 1987

Harris Construction Co. P. O. Box 1499 Forcks Corner, SC 29461

> Re: Contract position:34-7393 Replace Poilto, Stog RA-106 Marine Corps Asse, Camp Lejeune, NC

Geritlemen:

As discussed during the telephone conversation on January 22, 1987 between Mr. Bob Anderson of your company and Mr. David Southerland of Utilities, Base Maintenance, Marine Corps Base, Camp Lejeune, North Carcling and persuant to the warranty clause of the contract the fall wing warranty item is being brought to your attention:

The turns are leaking in the confidence are leaking in the confidence with cases and editivities in the confidence of an arabilities in the confidence of an arabilities.

roinc of contacts dreg Showmaker, Contracts My Ager, (199).

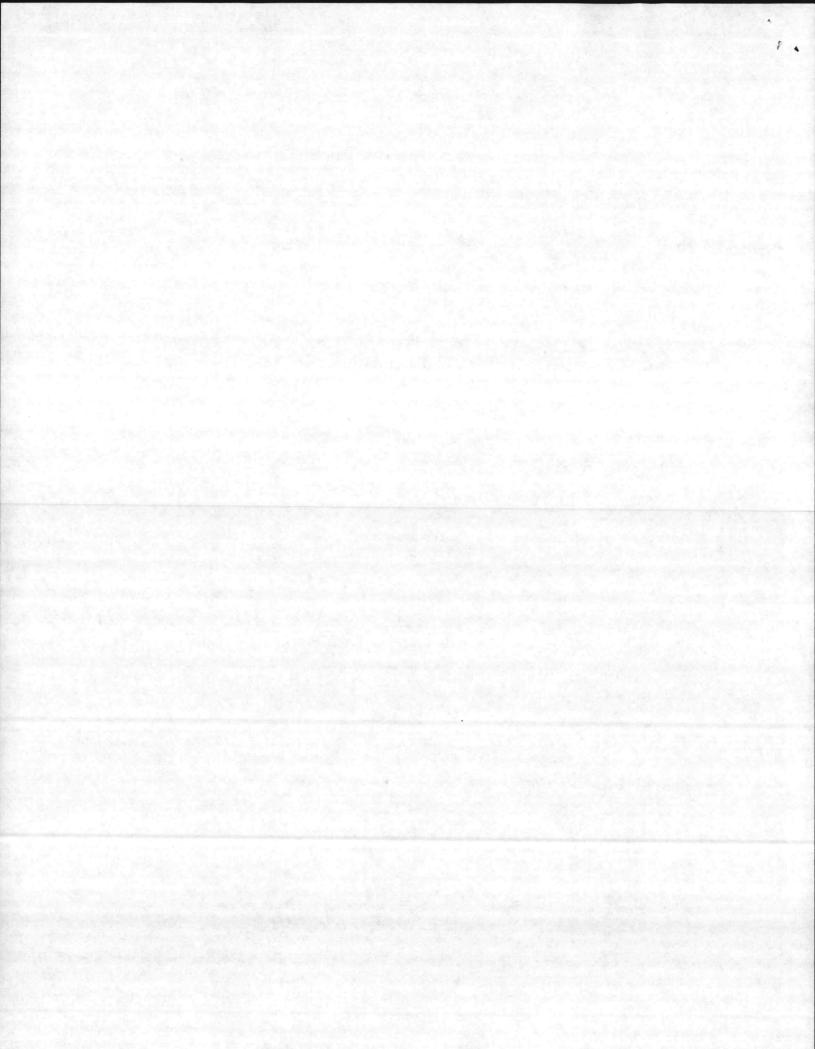
Please notify by letter when repairs have been made.

Sincerely,

T. D. JEWEWLL

J.D. Jewell

Director of Operations



HARRIS CONSTRUCTION COVERS

#### BOILERS, PRESSURE VESSELS & FIFING SYS EMS P.O. BOX 1499 MONCKS CORNER, SOUTH CAROLINA 29461 (803) 761-3890

January 27, 1987

Sub: Contract # N62470-84-C-7893

Ref: Model 100-200-150# Steam Boiler w/Feed Pump CB S.O. CU 8501819-01

Centlemen;

After receiving a call from Mr. David Southerland at Camp Lejeune at 3:40 p.m. on 1-22-87 concerning boiler at BA-106.

I attempted to contract Applied Engineering in NC and did get their answering service and they said they would contact the Manager and have him call me.

I did not receive an answer from Applied Engineering, so I called Mr. Southerland and he informed me that if we did not come up and fix the boiler, they would get a contractor to fix it and bill us whatever they were charged.

At this point I told them we would have some one there in the morning of 1-23-87.

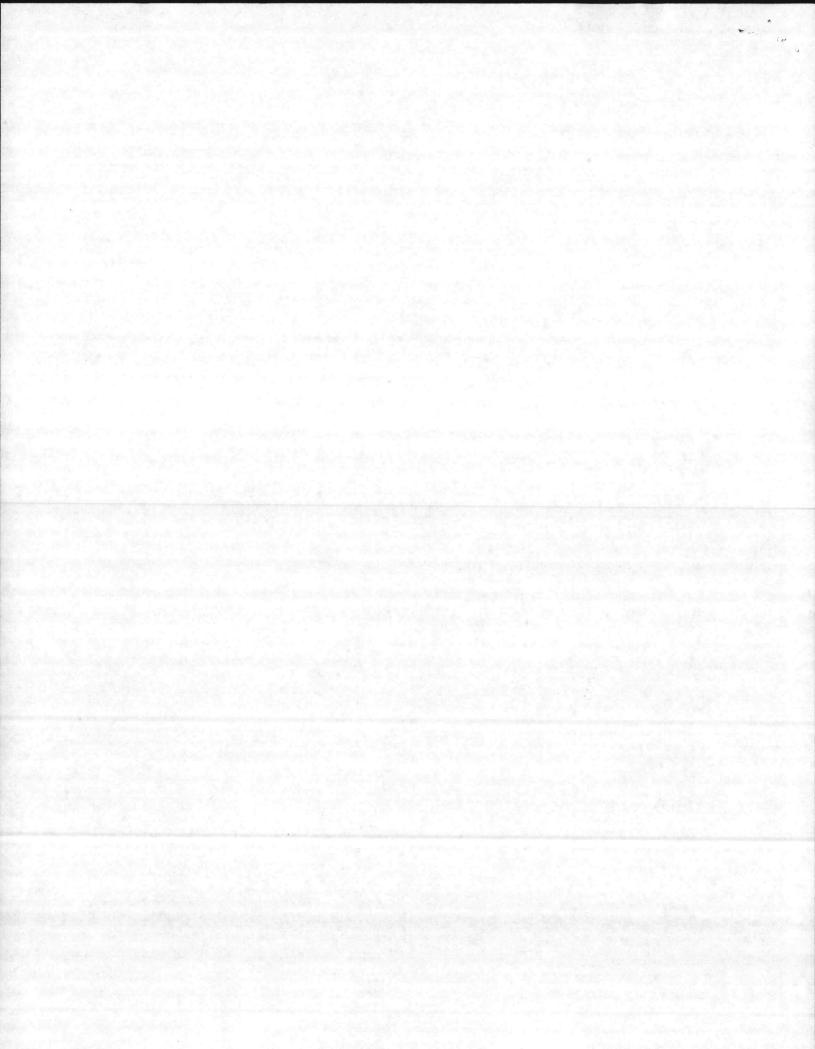
Mr. Anderson and a welder were at Camp Lejeune at 0800, 1-23-87.

Mr. Tom Lanier the Base Boiler Inspector recommended the hot pass be seal welded as they already had been rerolled by Applied Engineering.

At this time a phone call was made to Mr. Robert Howell of Applied Engineering of Greensboro NC. Lt. King of ROICC Camp Lejeune, NC, was on the phone with me, the government was concerned if welding these tubes would void the warranty on the boiler. Mr. Howell informed us that if the job was done properly it would not affect the warranty.

At this point we commenced preparation to seal weld the hot pass. Which was completed at approximately 2100 with the acceptance of a  $l_2^1$  design Hydro-Test by Mr. Tom Lanier, Base Boiler Inspector.

by the (tubes expanding and the boiler not expanding). I, Robert Anderson tried explaining to them, that it was caused by low water again and pointed out to them that their make up feed system was inadequate for this boiler at full power. ie (Cleaver-Brooks Rep. Cleave Beasley & Robert Anderson experienced inadequate water supply to make up feed tank during full power test and made reports of same to ROICC and in their daily reports.) The feed make up system starts out at the demineralize with 1½" pipe and reduces down to 3/4" pipe, then through a 3/4" electric operated solenoid valve which further restricts the flow to the make up tank.



### HARRIS CONSTRUCTION COLARANT, INC. POILERS, PRESSURE VESSELS & FIR NG SYSTEMS

#### P.O. BOX 1499 MGNCKS CORNER, SOUTH CAROLINA 29461 (803) 761-3890

This pipe is old and possibly has lime build up inside, further restricting the flow of make up water. Still after having all this pointed out plus the fact that they had two feed water check valve failures prior to these two casualitys. Pase personnel still insists this has nothing to do with the problem.

I am submitting this letter along with our invoice for repairs to Cleaver Brooks Boiler Inc., and Camp Lejeune.

Date of written report of feed tank problem 8-21-86.

Base personnel present during meeting

Mr. David Southerland

Mr. Greg Shumaker

Lt. King ROICC

Mr. Tom Lanier, Base Boiler Inspector

Mr. Ray Hunt, ROICC Inspector

Mr. Robert B. Anderson, Harris Construction Company, Inc. Respectfully yours,

Harris Construction Company, Inc.

James W. Harris

James . W.

Vice President/ Gen. Mgr.

JWH/swg

Encl.

Letter-Applied Engineering Co. 19 Jan. 87 Letter- U.S. Marine Corps, Camp Lejeune, NC, 22 Jan. 87

cc: Mr. David Southerland

Mr. Greg Shumaker

Lt. King,

Mr. Tom Lanier

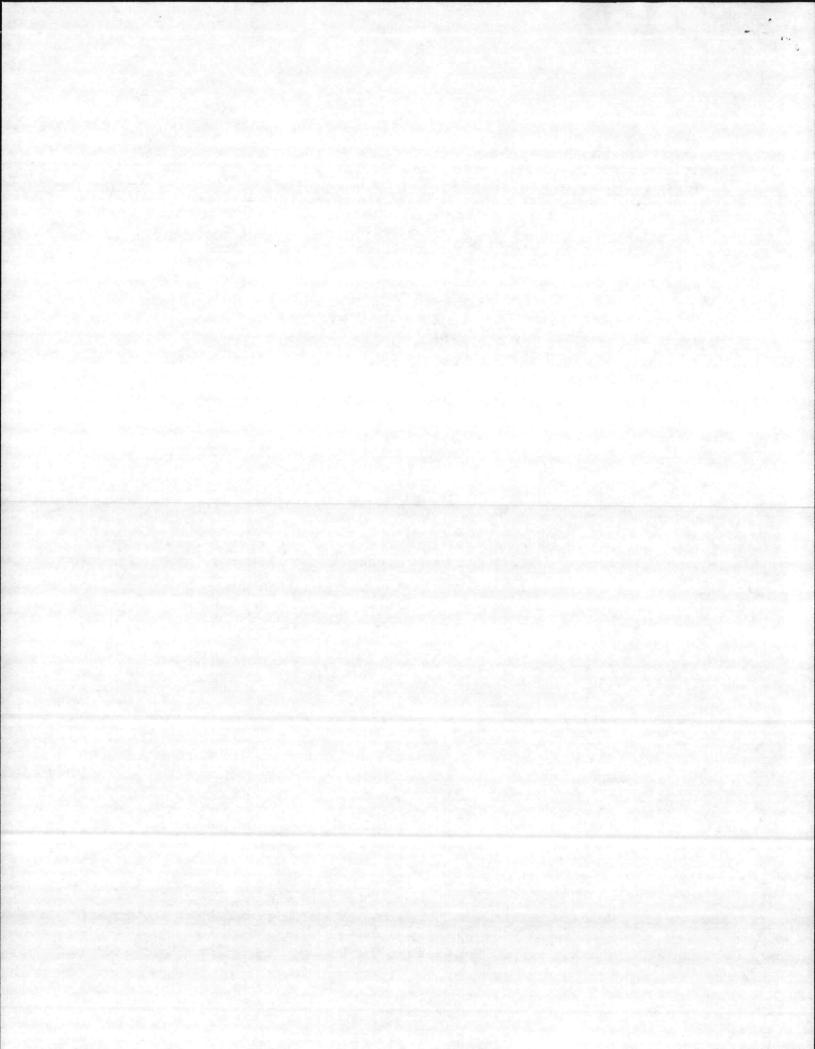
Mr. Ray Hunt

Applied Engineering

Cleaver Brooks Boiler Inc.

T.D. Jewewll

P.S. Encl. Copy of Daily Report To Inspector, 8-21-86



Mr. Bruce Hoffman

Base Maintenance Operations Division
Building 1202

Marine Corp Base
Camp Lejeune, NC 28542

January 19,1987

Re: Building BA-106 Cleaver-Brooks Boiler, Model CB 100-200, Unit L-80611

Dear Mr. Hoffman.

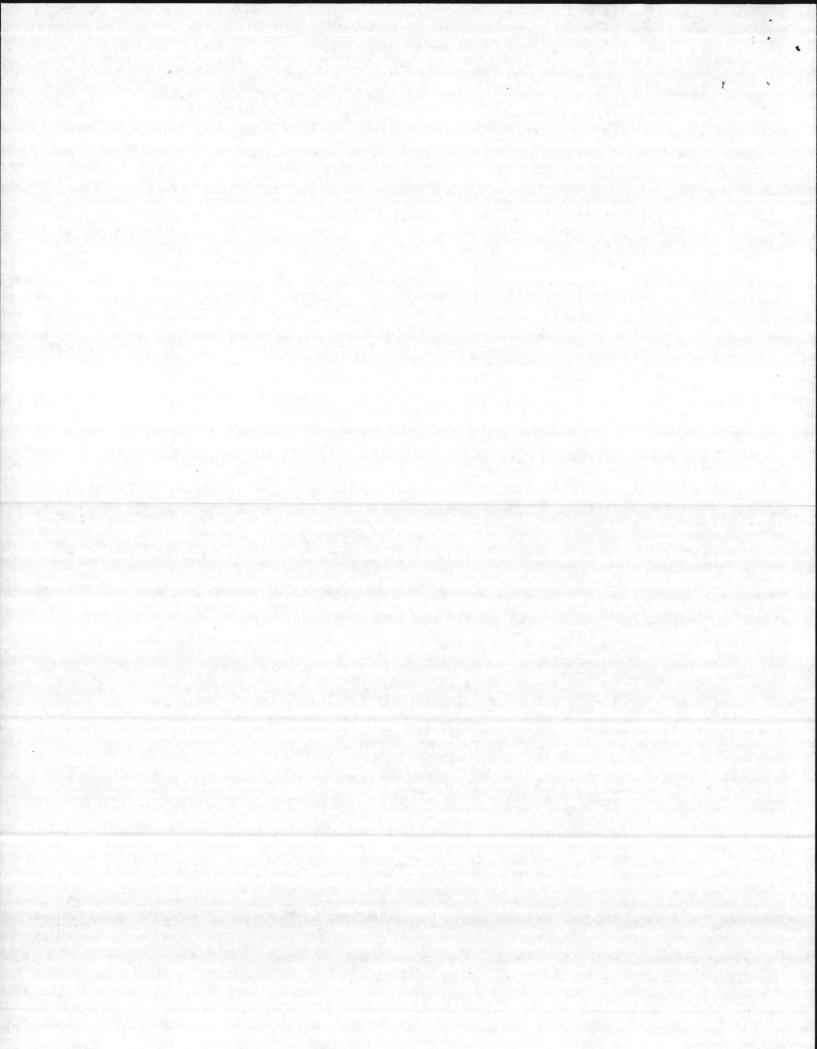
On January 8, 1987 we responded to a request for immediate service on the boiler which is the subject of this letter. We were advised that the boiler was shut down with "water running out the front and rear." Our serviceman, Mark Kimbro, was diverted from another job and arrived at Camp Lejeune at approximately 6:00 PM.

Upon inspection, Kimbro determined that the second pass tubes were leaking where they joined the tube sheet. Some of the tubes had separated from the tube sheet by as much as 1/8 of an inch. Kimbro worked until after 11:00 PM re-rolling all the second pass tubes. He returned the following morning and the boiler was hydrostatically tested under the supervision of the base inspector, Mr. Lanier. The test was conducted at 225 psi for fifteen minutes, and was satisfactory.

The main purpose in writing this letter, Mr. Hoffman, is to advise those who are involved with the operation of this boiler that, from what we observed, it is apparent that the boiler has been subjected to some extreme and unusual operating conditions. To have a boiler develop leaking tubes after only about six months of service is very rare. To find a boiler with tube separation to the extent observed by our serviceman is indicative of the unit having been subjected to some extreme conditions.

What these conditions are, we do not know. However, from our experience we know what commonly causes tubes to expand away from, the tube sheet. One cause is improper water treatment which results in scale forming on the tube. Scale prevents the transmission of heat through the tube, and ultimately the tube will overheat and expand away from the tube sheet. Another possible cause is thermal shock which results from the rapid introduction of cold feed water into a hot boiler. There are other reasons, certainly, but these two are common.





The secondary purpose of this letter is to advise you that we will invoice Camp Lejeune for our labor and expenses to repair this unit.

Startup on this boiler was completed on July 31,1986. Before startup, the pressure vessel was subjected to a hydrostatic test, and met this test satisfactorily. If there had been a defect in the manufacture of this unit, it would have shown up here, and the repairs to correct any defect would have been covered by the manufacturer's warranty. The pressure vessel, then, was sound when the boiler was put into service. The leaking tubes developed after the boiler had been in service for almost six months. The leaks were the result of the conditions under which this boiler was operated. They were not caused by a defect in manufacturing, and, as such, the repairs to correct the leaks are not covered under warranty.

We incurred a great deal of labor and travel expenses to repair this pressure vessel, Mr. Hoffman, and we believe we justifiably deserve to be compensated for our service. Accordingly, herewith is our invoice at our standard labor rates. Will you please forward it for processing?

Very truly yours,

APPLIED ENGINEERING COMPANY

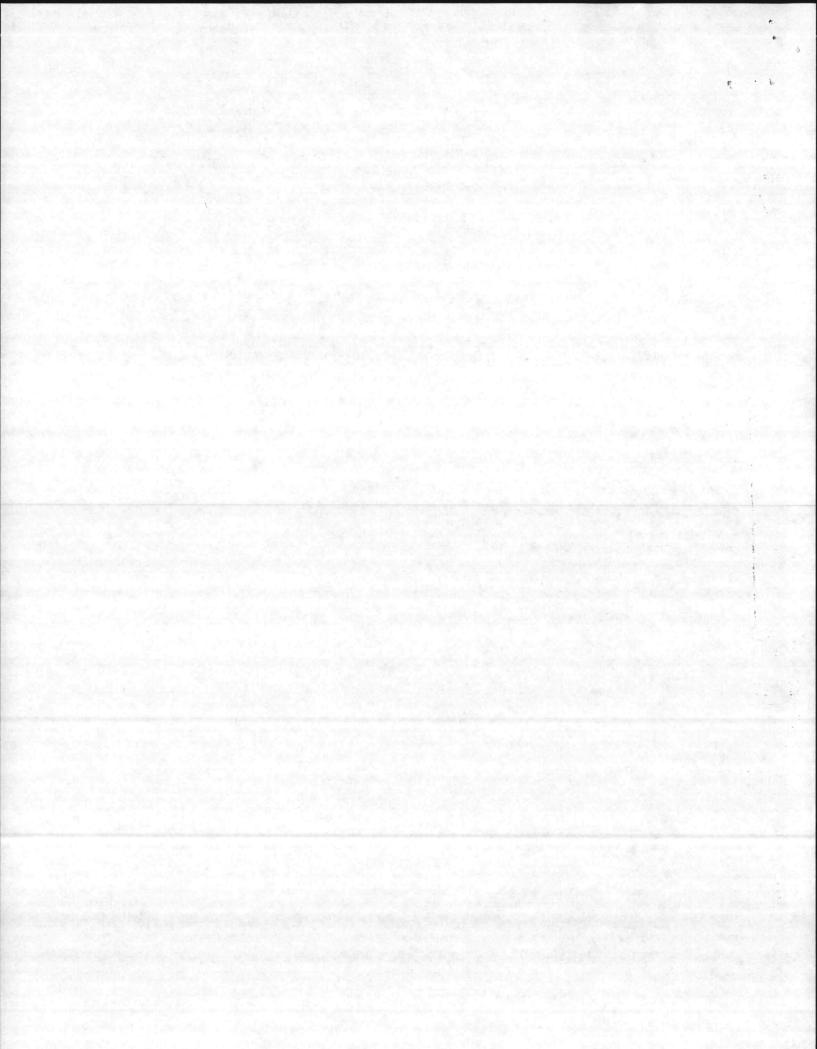
Robert W. Howell Branch Manager

RWH/kh

cc: Rick Jackson

Bob Anderson-Harris Construction Co.





		DAILY	REPURT 1	O INSPECTOR		8-21-8
ACT NO	84-c 78	93 TITL	E AND LOCATIO	DN -	F	EPORT NO.
	(Prime or Subco	1 /		I NAME OF SI	PERINTENDENT OR FORE	35
EATHER-A.I	M.					MAN
EATHER-P.N					TEMPERATURE - A.M.	
PRIME CO	NTRACTOR/SUB	CONTRACTOR W	VORKFORCE	The William Park Control of the Cont	TEMPERATURE - P.M.	
NUMBER	TRADE	HOURS	EMPLOYER	LOCATI	ON AND DESCRIPTION WORK PERFORMED	
1		1.5/1	0			
		18	1			
		Anthropic Street				
	1763 (E.186) 24 (E.186)			ļ	/	
				21		
				$O \land O \lor$		
	•	7. × · · ·	Tr 4-65			
	100					
		1-1				
		4, 20				
	244 5,000	1 2 200 200 200		19 - 10 C. W. G. > -		
AL WORK HO	URS ON JOB	100	Maria de la companya del companya de la companya de la companya del companya de la companya de l	The second secon		
		18 :-		WERE THERE ANY LOST TIME A	CCIDENTS THIS DATE?	
RS FROM PRE	AL OF WORK	5 50	3	□ YES	to	
AL WORK HO	URS FROM			ES". A COPY OF THE COMPLETED	OSHA REPORT IS REQUI	RED
RT OF CONST	RUCTION	57 52	.5			
INSPECT	TION AND/OR TE	STING	LO	CATION AND/OR	REMARKS	
	A mark to be have a few	WITH NEPORT	ELI	EMENT OF WORK	RESULTS OF INSPECTIO	NS/TESTING
A Part of the last						
PEC. PARA.	EQUIPM	ENT/MATERIAL I	RECEIVED TODA	Y TO BE INCORPORATED IN JOB	Andrew State of the state of	The state of the s
OR DRAWING	NO.	(De	escription, Sizes,	Quantity)	SUBMITTAL NO. OR CERTIFICATION	DATE APPROVED
						XI I NOVED
	7.3			A CONTRACTOR OF THE STATE OF TH		
4-4330/34 (REV	(6-83)	5.70	SNO	105-LF-003-3171	54	nat of

400 1 + 20 - NO.	(Materials, Equipment, S.	TION AND DESCRIPTION		TC BE _:	etteri.
				REFERENCE	446
	DEFICIENCIES CORRECTED THIS DA	ATE	REPO	RT NO. COMPLIA	
	and only to the or the transfer				
					1
Management of the consistency of the second			79		
· · · · · · · · · · · · · · · · · · ·					
CONC	TRUCTION AND DIANT COURS	T	LTH LIGHT IS COLAD FAST	<u> </u>	
CONS	TRUCTION AND PLANT EQUIPMEN	IL FEEL ON DOR SHE O	VIIL USE IS COMPLETED		
DESCRIPTION	DATE FIRST ON JOB (First time unity)	HOURS WÜRKED THIS DATE	HOURS IDLED	DATE OF FINAL REMOVAL FROM JOB	
	·   ; ·				
	,			•	
	ONSTRUCTION AND PLANT EQUIPM Will include pickup trucks and mobile used for transport		compressor, that are als	0	
The Sharper of the second seco	DESCRIPTION		HOURS WORKED	HOURS IDLED	
					Agrangia (
			1		
EMARKS (Include directions received	from ROICC/AROICC, visitors, comp	liance notices received, er	rors and/or omission in P/S	pertinent information)	
NO Show inc	tu haf to	le ha	nd fred	as ·	
make up us	in proof	1 ti			
actoristic fe	edu us ma	airus			
		CONTRACTOR/S	UPERINTENDENT	DATE	-
CONSTRUCTION REPRESENTATIVE	'S REMARKS AND/OF EXCEPTIONS	TO THIS REPORT			
				<b>是我的事情</b>	

CONSTRUCTION REPRESENTATIVE

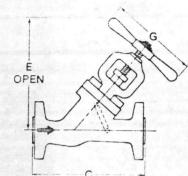
DATE

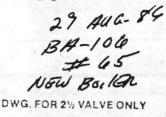
## Class 300 FN 50 740 psi 51 bar

Globe and angle; bolted bonnet integral stainless hard surfacing alloy on body seating surface and backseat integral hardfaced alloy disk seating surface; disk body-guided; equipped with Equalizer; flanged or buttwelding ends

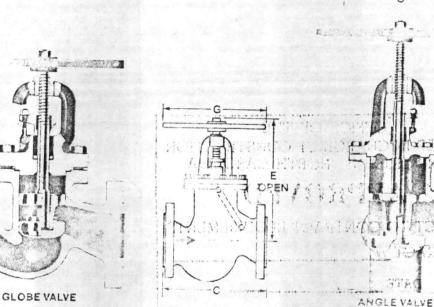
#### FIGURENUMBERS

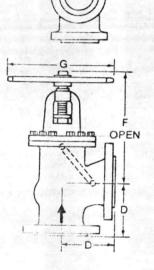
Globe	Fig. 302 - Flanged Fig. 302Y - Buttwelding Ends*
Angle	Fig. 303 - Flanged Fig. 303Y - Buttwelding Ends*





Valves





Boid face numerals are in inches and pounds

SIZE		3	4		6	STORES - WALLES THE RESIDENCE OF THE PARTY O	millimeters a	12
. D	N 65	800	100	125	150	250	250	300
C Contact Face to Contact Face, (Globe).	11.5 292	<b>12.5</b> 318	14 356	15.76 400	17.5 445	<b>22</b> 559	24.5 622	28 711
D Center to Contact Face, (Angle)	5.75 146	<b>6.25</b> 159	<b>7</b> 178	7.88	8.75 222	11 279	12.25 310	14 356
E Center to Top, Globe	<b>16</b> 406	16.2 411	16.7 424	20.1 510	24.8 630	28.4 721	34.3 871	39.7 1008
F Center to Top, Angle	13. <b>6</b> 345	14.4 366	<b>19.6</b> 371	17.7 450	21.4 544	2 <b>4.2</b> 615	28.8 731	32.9 836
G Handwheel Diameter†	11 279	11.5 292	11.5 292	15 381	<b>18</b> 457	<b>22</b> 559	<b>22</b> 559	<b>26</b> 660
H Clearance for Equalizer**	<b>5.9</b> 150	<b>8.7</b> 221	<b>8.5</b> 216	10 254	9.6 244	11 279	13.7 348	15 381
Weight, Globe (Flanged)	70 32	100 45	139 63	226 103	370 168	5 <b>25</b> 238	890 404	1500 680
Weight, Globe (Welding)	<b>56</b> 25	75 34	<b>94</b> 43	172 78	29 <b>5</b> 134	400	720 327	1270
Weight, Angle (Flanged)	<b>65</b> 29	<b>94</b> 43	126 57	20 <b>6</b> 93	300	450 204	700 318	1200
Weight, Angle (Welding)	51 23	69	81 37	152 69	225 102	3 <b>25</b> 147	530 240	970 440

<sup>\*</sup>See table (pages 52 and 53) for buttwelding erid dimensions

<sup>†</sup>Regular handwheel standard on all sizes except 12" has impactor handwheel

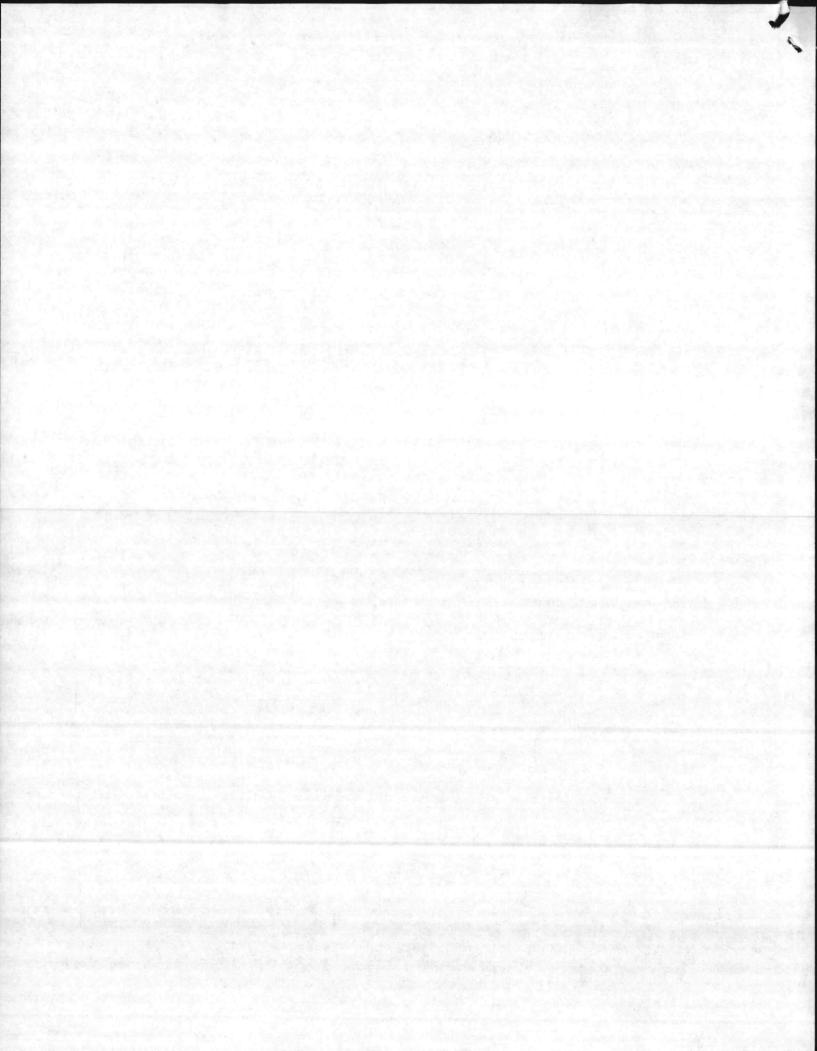
<sup>2%</sup> has impactor handle

<sup>\*\*</sup> Equalizer pipe standard

Drain plug on aprlication at extra charge Material specifications page 48 Pressure drop data pages 54 and 55

Pressure-temperature ratings for Rockwell Edward valves, pages 46 and 47

Center to end or end to end dimensions for welding end valves same as center to contact face or contact face to contact face dimensions for fianged end valves

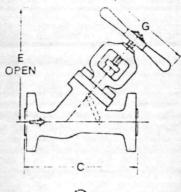


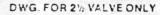
### -1609 300 PN 30

Globe and angle, bolted curriet integral stainings raid surfacing alloy on body scating surface and backseat integral hardfaced alloy disk seating surface, disk body-guided, equipped with Equalizer, flanged or buttwelding engs.

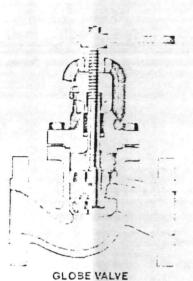
#### FIGURENUMEERS

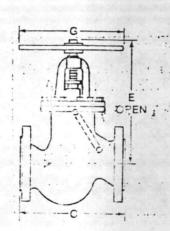
Giobe	Fig. 302 - Flanged Fig. 302Y - Buttwelding Ends*
Angle	Fig 303 - Flanged

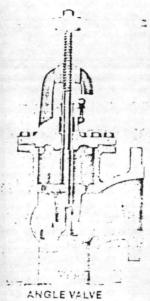


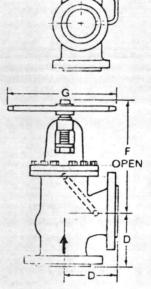


Valves









GLOBE & ANGLE VALVES - SIZE 2% THRU 12

Bold face numerals are in inches and pounds.

SIZE NPS	2½ 65	800	100	<b>5</b>	150	250	10 250	12 300
C Contact Face to Contact Face, (Globe) •	11.5	12.5	14	15.76	17.5	<b>22</b>	24.5	28
	292	318	356	400	445	559	622	711
D. Center to Contact Face, (Angle)•	5.75	6.25	7	7.88	8.75	11	12.25	14
	146	159	178	200	222	279	310	356
El Center to Topl Globe	16	16.2	16.7	20.1	24. <b>8</b>	28.4	34.3	39.7
	406	411	424	510	630	721	871	1008
F. Center to Top, Angle	13.6	14.4	19.6	17.7	21.4	24.2	28.8	32.9
	345	366	371	450	544	615	731	836
G Handwheel Diameter†	11	11.5	11.5	15	<b>18</b>	<b>22</b>	<b>22</b>	26
	279	292	292	381	457	559	559	660
H Clearance for Equalizer**	<b>5.9</b>	8.7	8.5	10	9.6	11	13.7	15
	150	221	216	254	244	279	348	381
Weight Globe (Flanged)	70 32	100	139 63	226 103	370 168	525 238	890 404	1500 680
Weight, Globe (Welding)	<b>56 2</b> 5	75 34	94 43	172 78	295 134	400 181	<b>720</b> 327	1270 576
Weight, Angle (Flanged)	<b>65</b> 29	94	126 57	206 93	300 136	450 204	700 318	1200 544
Weight, Angle (Welding)	51	69	81	152	225	325	530	970
	23	31	37	69	102	147	240	440

<sup>•</sup> Secretic indiges £1 and £3 if or but we our gier or dimensions

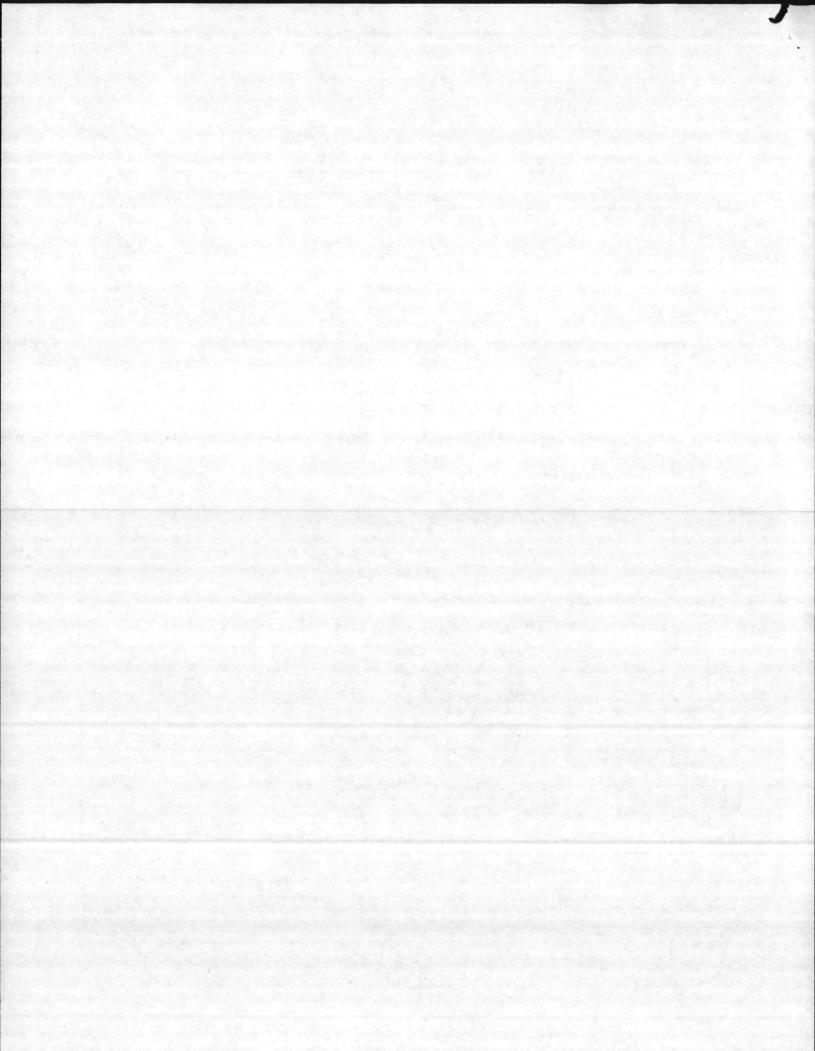
The guest har owner is a flaction at a terral copi 10 has impactor hardn'tt

<sup>2</sup> that impartenter die

<sup>•</sup> r Equal se Little - Dard Drang og Graps potter at eltraspe

Principal Communication of the control of the contr

Center to endiciend to endicimensions for welding endivalves same as center to contact face or contact face to contact face ormensions for hanges end vaives

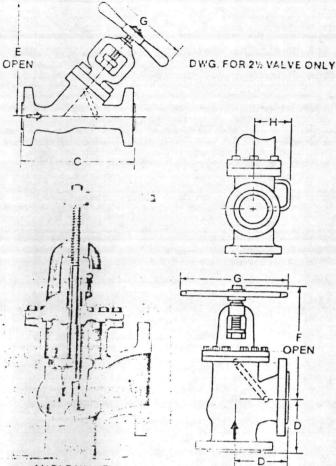


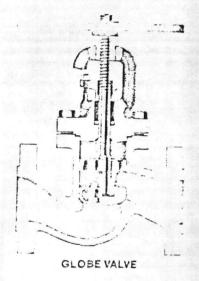
## 4/ cs 300 FN 50

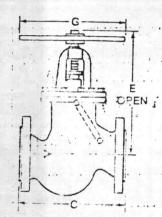
Globe and angle, bolted connet integral stain sast indisar-facing alloy on body seating surface and backs at integral hardfaced alloy disk seating surface, disk body-guized. equipped with Equalizer; flanged or buttwelding ends

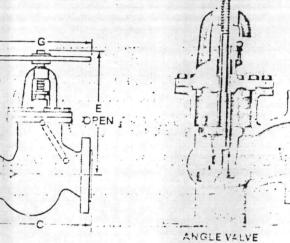
FIGUE ENUMEERS

Giobe	Fig. 302 - Flariged Fig. 302Y - Buttwelding Ends*
Angle	Fig 303 - Flanged Fig 303Y - Buttweiding Ends*











Bold face numerals are in inches and pounds.

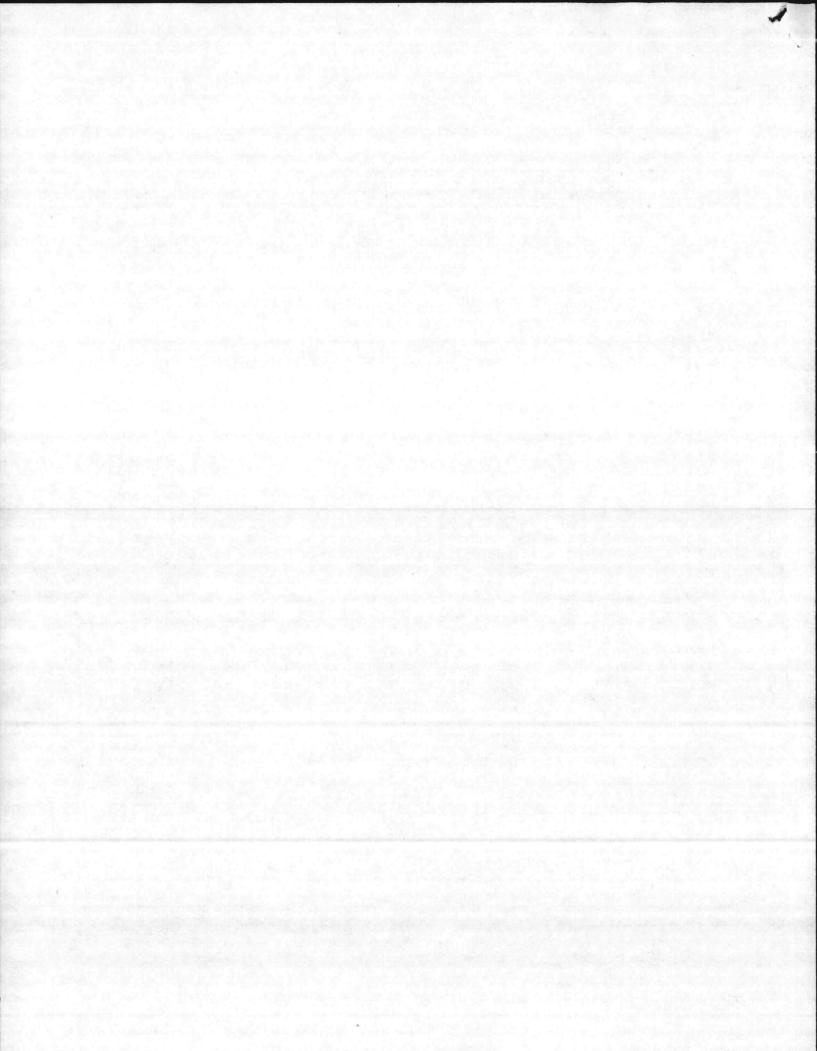
SIZE NPS DN"	2½ 65	<b>3</b> 800	100	<b>5</b>	Orange nume	8 250	10 250	12 300
C Contact Face to Contact Face, (Globe)•	11.5 292	<b>12.5</b> 318	14 356	15.76 400	17.5 445	<b>22</b> 559	24.5 622	28 711
D. Center to Contact Face, (Angle)•	5.75 146	6.25 159	7 178	7.88 200	8.75 222	11 279	12.25 310	14 356
El Center to Top, Globe	<b>16</b> 406	16.2 411	16.7 424	20.1 510	24.8 630	28.4 721	34.3 871	39.7 1008
F Center to Top, Angle	13.6 345	14.4 366	19.6 371	17.7 450	21.4	24.2 615	28.8 731	32.9 836
G Handwheel Diametert	11 279	11.5 292	11.5	15 381	18 457	<b>22</b> 559	22 559	<b>26</b> 660
H C'earance for Equalizer**	5.9 150	8.7 221	8.5 216	10 254	9.6 244	11 279	13.7 348	15 381
Weight Globe (Flanged)	70 32	100 45	139 63	226 103	370 168	525 238	890 404	1500 680
Weight Globe (Welding)	56 25	75 34	94	172 78	295	400 181	720 327	1270 57€
Weight, Angle (Flanged)	65 29	94	126	20 <b>6</b>	300 136	450	700 318	1200
Weight, Angle (Wellaing)	51 23	69 31	81 37	152	225	325	530 240	970 440

<sup>•</sup>See table (coges \$2 and \$3) for put werping end dimensions

The purantiand where sign director is dies except 12' has impactor

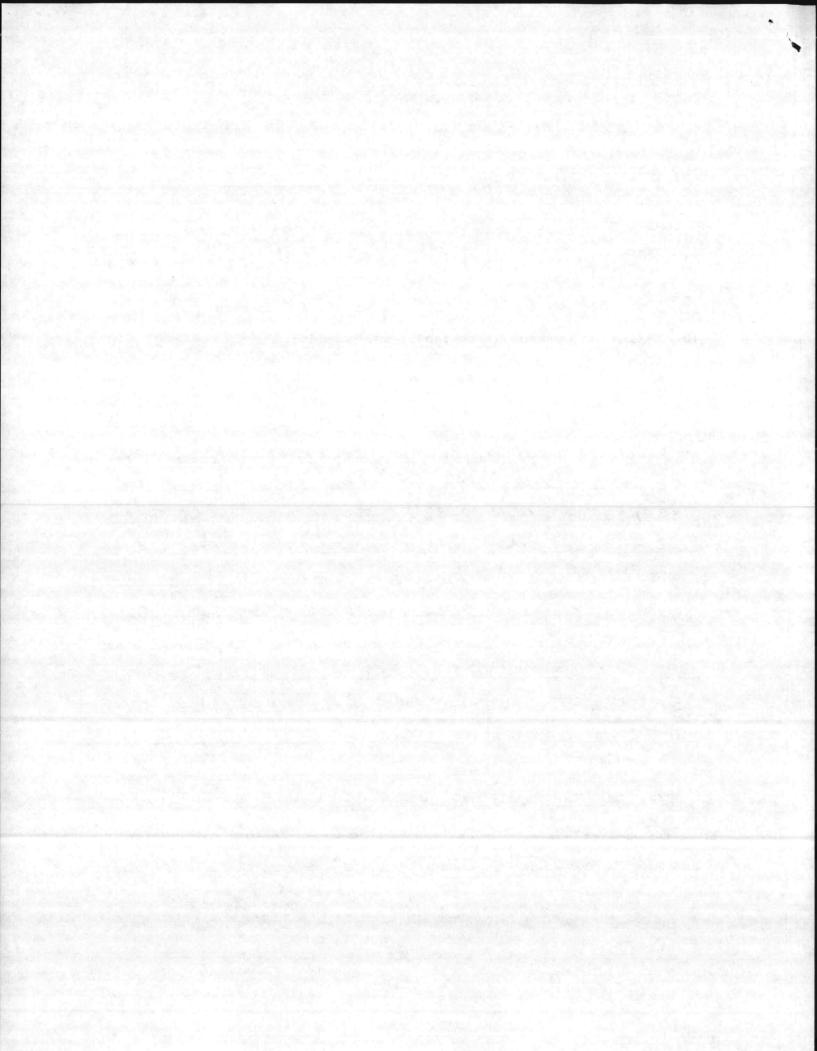
handwhee 2 maa moudto fande FEQUADE to samedard Dramp uponato politiale machaige Mote uponatolaturo bag 45 Pressula bout On pago Dear 55 Suessulatenda a consciplina de Fictor

<sup>\*</sup>Center the noice end to end dimer sions for welding endivalves same as center to compact face or contact face to contact face dimensions for fiences endivaves



5ND LANTDIV 9-4730/6 (Rev. 8/68)
Boiler Inspection - Addendum to NAVFAC 9-11014/41

		DATE: 7-23-87
ACTIVITY: MC	RCL	
BUILDING NO: BA	7 106	BOILER NO:
Based on the existin is estimated that the		d present rate of deterioration, it remaining life of
5 or more years		( ) years
The following correc	tive action is	recommended:
WATER LEAKIN	NG From B	ACK DOOR OF BOILER, INSPECTION
		LENAL TUBES WERE LEAKING
AT 2 Nd PAS	s. THE 2th	PASS TUBES HAD BEEN
RE-ROLLED ON	1-9-87.	SEVERAL TUBES WERE SEPERATED
		TICKING THROUGH TUBE SHEET
ABOUT 18" PAS		
		EZOZO BY HARRIS CONST. CO.
		ED BOILER. HYDRO AT 225 PSI
		STEN BOILER 3 TIMES TO GET SHITS-
		5 WEEPS AT WEZOS.) All TUBES IN
2 Nd PASS WERE		
1-26-87		
	NE AND STET	PAMING ABOUT 1/3-1/2 CAPACITY.
		BOILER IS NOW HOT AND HAS BE-
		CLOSE AS I CAN MEASURE.
ACCUPATION OF THE PROPERTY OF		Nom Lawie
		- I am Vann

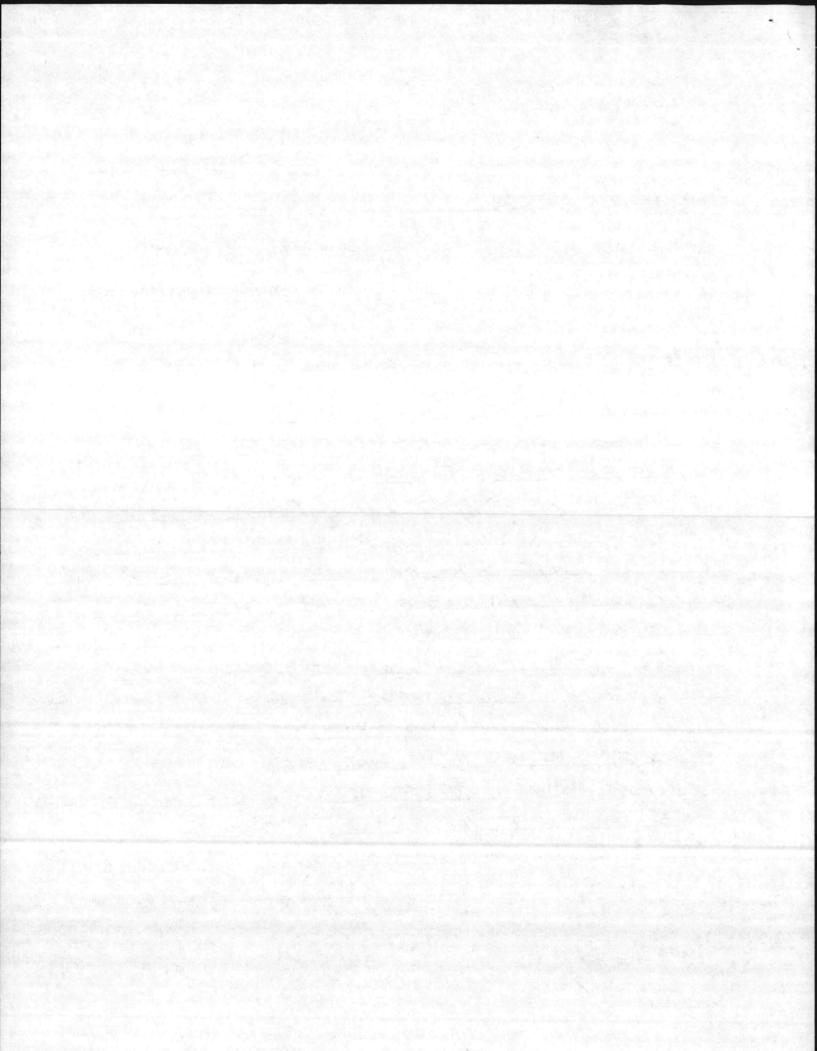


5ND LANTDIV 9-4730/6 (Rev. 8/68) Boiler Inspection - Addendum to NAVFAC 9-11014/41

SERVICE REPRESENTATIVE
APPLIED ENGINEERING COMPANY
GREENSBORO, NC

800/772-9072

CITIVITY: MCRCL  WILDING NO: BA-106  BOILER NO: 15  assed on the existing condition and present rate of deterioration is estimated that the boiler has a remaining life of 15 or more years  If () years the following corrective action is recommended:  WATER LEAKING FROM BOTH ENDS OF 18 PSI ON PRESSURE GAGE AND NORMAL IN LEUGL IN WATER GAGE CLASS, BALER WAS RUNNING, LOCKED OUT ON PROGRAMER.  OPEN FIRE SIDE OF BOILER, WATER IS IN FIRE BOX AND TUBES ALE WET PLSO WAS IS SPRAYING FROM SOME OF THE TUBE AT 15 SHEET REAR OF BOILER AT 2 PASS.  FACTORY REPRESENTATIVE REPOLLED ALL TUBES (44 TUBES) HYDRO BOILER AT 214 PSI TWO (2) TUBES HAS VERY SMALL WEEP, DON'T REPAY MANE ROLLING. AT PROSONT TIME TUBES AND ONE LEAK RIGHT SIDE 354 ROW TOP, 44 TUBES BROOKS.  BEFORE BEFORE SIDE TOP ROW 3 TUBES FROM DONE LEAK RIGHT SIDE 354 ROW TOP, 44 TUBES BEFORE.	9-87
Assed on the existing condition and present rate of deteriorations as estimated that the boiler has a remaining life of  J 5 or more years  L J () years  The following corrective action is recommended:  WATER LEAKING FROM BOTH ENDS OF  J R PS J ON PRESSURE GAGE AND NORMAL IN  LEUGL IN WATER GAGE GUASS, BAILER WAS  RUNNING, LOCKED OUT ON PROGRAMOR.  OPEN FIRE SIDE OF BOILER, WATER IS  IN FIRE BOX AND TUBES ARE WET ALSO WA  LS SPARYING FROM SOME OF THE TUBE AT  SHEET ROAR OF BOILER AT 2 NO PASS.  FACTORY REPRESENTATIVE REPOLLED ALL TUBES  TWO (2) TUBE HAS VERY SMALL WEEP, DON'T REPORT MORE ROLLING. AT PRESENT TIME TUBES ARE  DISCORDED TOP ROW 3 TUBES FROM  ONE LEAK RIGHT SIDE 3 TOP ROW 3 TUBES FROM  DISCORDED TOP, 4 THE TUBES  BEFORE	age they
Assed on the existing condition and present rate of deteriorations estimated that the boiler has a remaining life of the sestimated that the boiler has a remaining life of the sestimated that the boiler has a remaining life of the sestimated that the boiler has a remaining life of the sestimated that the boiler has a remaining life of the sestimated of	
The following corrective action is recommended:  WATER LEAKING FROM BOTH ENDS OF  18 PS I ON PRESSURE GAGE AND NORMAL IN  LEUEL IN WATER GAGE CLASS, BULER WAS  RUNNING, LOCKED OUT ON PROGRAMER.  OPEN FIRE SIDE OF BOILER, WATER IS  IN FIRE BOX AND TUBES ARE WET TASO WA  IS SPANYING FROM SOME OF THE TUBE AT I  SHEET REAR OF BOILER AT 2ND PASS.  FACTORY REPRESENTATIVE REPOLLED All TU  PASS (46 TURGS) HYDRO BOILER AT 214 PSI  TWO (2) TUBE HAS VERY SMALL WEEP, DON'T RE  ANY MORE ROLLING. AT PRESENT TIME TUBES ARE  ONE LEAK LEFT SIDE, TOP ROW 3 TUBE FROM  ONE LEAK RIGHT SIDE 3 TOP ROW 3 TUBE FROM  ONE LEAK RIGHT SIDE 3 TOP ROW TOP, 4 TOP 16 TOP	ion, it
He following corrective action is recommended:  WATER LEAKING FROM BOTH ENDS OF  18 PSI ON PRESSURE GAGE AND NORMAL IN  LEUGL IN WATER GAGE CLASS, BOILER WAS  RUNNING, LOCKED OUT ON PROGRAMER.  OPEN FIRE SIDE OF BOILER, WATER IS  IN FIRE BOX AND TUBES ARE WET THEO WA  IS SPANYING FROM SOME OF THE TUBE AT I  SHEET REAL OF BOILER AT 2ND PASS.  INCTORY REPRESENTATIVE REPOLLED WITTE  TWO (2) TUBE HAS VERY SMALL WEEP, DON'T RE  ANY MORE ROLLING. AT PROSONT TIME TUBES ARE  ONE LEAK LEFT SIDE, TOP ROW 3 TUBE FROM  ONE LEAK RIGHT SIDE 3 TO ROW TOP, 4 TO FUBE  BEFOOLSE  EFFORCE  EFFORMER  TOPM TOPM TOPM TOPM TOPM TOPM TOPM TOPM	
LEVEL IN WATER GAGE GLASS, BOILER WAS RUNNING, LOCKED ONT ON PROGRAMOR.  OPEN FIRE SIDE OF BOILER, WATER IS IN FIRE BOX AND TUBES ALE WET PLSO WA  IS SPARYING FROM SOME OF THE TUBE AT)  SHEET REAR OF BOILER AT 2ND PASS.  FACTORY REPRESENTATIVE REPOLLED AND TU  PASS (46 TUBES) HYDRO BOILER AT 214 PSI  TWO (2) TUBE HAS VERY SMALL WEEP, DON'T RE  ANY MORE ROLLING. AT PRESENT TIME TUBES ARE  ONE LEAK LEFT SIDE, TOP ROW 3 TO TUBE FROM  ONE LEAK RIGHT SIDE 3TO ROW TOP, 4 TO TUBES  BROOKS  ERSONTERS	
LEVEL IN WATER GAGE GLASS, BOILER WAS RUNNING, LOCKED ONT ON PROGRAMOR.  OPEN FIRE SIDE OF BOILER, WATER IS IN FIRE BOX AND TUBES ALE WET PLSO WA  IS SPARYING FROM SOME OF THE TUBE AT)  SHEET REAR OF BOILER AT 2ND PASS.  FACTORY REPRESENTATIVE REPOLLED AND TU  PASS (46 TUBES) HYDRO BOILER AT 214 PSI  TWO (2) TUBE HAS VERY SMALL WEEP, DON'T RE  ANY MORE ROLLING. AT PRESENT TIME TUBES ARE  ONE LEAK LEFT SIDE, TOP ROW 3 TO TUBE FROM  ONE LEAK RIGHT SIDE 3TO ROW TOP, 4 TO TUBES  BROOKS  ERSONTERS	
LEVEL IN WATER GAGE GLASS, BOILER WAS RUNNING, LOCKED ONT ON PROGRAMOR.  OPEN FIRE SIDE OF BOILER, WATER IS IN FIRE BOX AND TUBES ALE WET PLSO WA  IS SPARYING FROM SOME OF THE TUBE AT)  SHEET REAR OF BOILER AT 2ND PASS.  FACTORY REPRESENTATIVE REPOLLED AND TU  PASS (46 TUBES) HYDRO BOILER AT 214 PSI  TWO (2) TUBE HAS VERY SMALL WEEP, DON'T RE  ANY MORE ROLLING. AT PRESENT TIME TUBES ARE  ONE LEAK LEFT SIDE, TOP ROW 3 TO TUBE FROM  ONE LEAK RIGHT SIDE 3TO ROW TOP, 4 TO TUBES  BROOKS  ERSONTERS	P. /-
RUNNING, LOCKED OUT ON PROGRAMOR.  OPEN FIRE SIDE OF BOILER, WATER IS  IN FIRE BOX AND TUBES ARE WET ALSO WA  IS SPARYING FROM SOME OF THE TUBE AT )  SHEET ROTAL OF BOILER AT 2 No PASS.  FACTORY REPRESENTATIVE REPOLLED ALL TU  PASS (46 TUBES) HYDRO BOILER AT 214 PSI  TWO (2) TUBE HAS VERY SMALL WEEP, DON'T RO  ANY MORE ROLLING. AT PROSONT TIME TUBES ARE  ONE LEAK LEFT SIDE, TOP ROW 3 TOP, 4 TO FROM  DNE LEAK RIGHT SIDE 3 TO ROW FROM TOP, 4 TO FUBE  Brooks  ERSONTENS	KONE
RUNNING, LOCKED OUT ON PROGRAMOR.  OPEN FIRE SIDE OF BOILER, WATER IS  IN FIRE BOX AND TUBES ARE WET PLSO WA  IS SPANYING FROM SOME OF THE TUBE AT)  SHEET ROAR OF BOILER AT 2 No PASS.  FACTORY REPRESENTATIVE REPOLLED AND TU  PASS (46 TURGS) HYDRO BOILER AT 214 PSI  TWO (2) TUBE HAS VERY SMALL WEEP, PON'T RE  ANY MORE ROLLING. AT PROSONT TIME TUBES ARE  ONE LOAK LEFT SIDE, TOP ROW 3 TO TUBE FROM  ONE LEAK RIGHT SIDE 3 TO ROW TOP, 4 TO TUBE  BROOKE  EROOKE	SATER
DPEN FIRE SIDE OF BOILER, WATER IS IN FIRE BOX AND TUBES ARE WET PLSO WA IS SPANYING FROM SOME OF THE TUBE AT) SHEET REAR OF BOILER AT 2 No PASS.  FACTORY REPRESENTATIVE REPOLLED WILL TU PASS (46 TUBES) HYDRO BOILER AT 214 PSI TWO (2) TUBE HAS VERY SMALL WEEP, DON'T RO ANY MORE ROLLING. AT PRISONT TIME TUBES ARE DIE LEAK LEFT SIDE, TOP ROW 3 TO TUBE FROM ONE LEAK RIGHT SIDE 3 TO ROW FROM TOP, 4 TO FUBE EFFORTS	NOT
IN FIRE BOX AND TUBES ARE WET ALSO WAS  IS SPARYING FROM SOME OF THE TUBE AT )  SHEET REAR OF BOILER AT 2 No PASS.  FACTORY REPRESENTATIVE REPOLLED A!! TU  PASS (46 TURGS) HYDRO BOILER AT 214 PSI  TWO (2) TUBE HAS VERY SMALL WEEP, DON'T RO  ANY MORE ROLLING. AT PRISONT TIME TUBES ARE  ONE LEAK LEFT SIDE, TOP ROW 3 TO TUBE FROM  ONE LEAK RIGHT SIDE 3 TO ROW FROM TOP, 4 TO TUBES  BROOKS  ERSYSTEMS	
IS SPARYING FROM SOME OF THE TUBE AT?  SHEET REAR OF BOILER AT 2 No PASS.  FACTORY REPRESENTATIVE REPOLLED A!! TU  PASS (46 TUBES) HYDRO BOILER AT 214 PSI  TWO (2) TUBE HAS VERY SMALL WEEP, DON'T RE  ANY MORE ROLLING. AT PRESENT TIME TUBES ARE  DONE LEAK LEFT SIDE; TOP ROW 3 to TUBE FROM  ONE LEAK RIGHT SIDE 3 to ROW FROM TOP, 4 to TUBES  ERSYSTEMS	\$74WOIN
SHEET REAR OF BOILER AT 2 PASS.  INCOMY REPRESENTATIVE REPOLLED A/I TU  PASS (46 TUBES) HYDRO BOILER AT 214 PSI  TWO (2) TUBE HAS VERY SMALL WEEP, DON'T RE  ANY MORE ROLLING. AT PRESENT TIME TUBES ARE  DAE LEAK LEFT SIDE, TOP ROW 3 THE TUBE FROM  ONE LEAK RIGHT SIDE 3 THE ROW FROM TOP, 4 THE TUBE  ERSYSTEMS	4TER
PASS (46 TURGS) HYDRO BOILER AT 214 PSI TWO (2) TURG HAS VERY SMALL WEEP, DON'T RE ANY MORE ROLLING. AT PROSONT TIME TURES ARE ONE LEAK LEFT SIDE, TOP ROW 3 to TURE FROM ONE LEAK RIGHT SIDE 3 to ROW FROM TOP, 4 to TURES ERSYSTEMS	TUBE -
PHSS (46 TURGS) HYDRO BOILER AT 214 PSI TWO (2) TUBE HAS VERY SMALL WEEP, PON'T RE ANY MORE ROLLING. AT PRISONT TIME TUBES ARE ONE LEAK LEFT SIDE, TOP ROW 3 to TUBE FROM ONE LEAK RIGHT SIDE 3 to ROW FROM TOP, 4 to TUBE BROOKE ERSYSTEMS	
PHSS (46 TURGS) HYDRO BOILER AT 214 PSI TWO (2) TUBE HAS VERY SMALL WEEP, PON'T RE ANY MORE ROLLING. AT PRISONT TIME TUBES ARE ONE LEAK LEFT SIDE, TOP ROW 3 to TUBE FROM ONE LEAK RIGHT SIDE 3 to ROW FROM TOP, 4 to TUBE BROOKE ERSYSTEMS	IBE IN
TWO (2) TUBE HAS VERY SMALL WEEP, PON'T RE  ANY MORE ROLLING. AT PRESENT TIME TUBES ARE  ONE LEAK LEFT SIDE, TOP ROW 3 to TUBE FROM  ONE LEAK RIGHT SIDE 3 to Row From TOP, 4 to TUBE  Brooks  ERSYSTEMS	Ε,
ERSYSTEMS  PAING ROLLING . AT PRISONT TIME TUBES ARE DNE LEAK LEFT SIDE, TOP ROW 3 to TUBE FROM ONE LEAK RIGHT SIDE 3 to ROW FROM TOP, 4 to TUBE  Tom Tom To	GOMME
DNE LEAK LEFT SIDE, TOP ROW 3 TOP FROM  ONE LEAK RIGHT SIDE 3 TH ROW FROM TOP, 4 TH RUBE  Brooks  ERSYSTEMS	5 6 4 5
Brooks  ERSYSTEMS  DAG LEAK RIGHT SIDE 3 TO ROW FROM TOP, 4 TO TUBE	<u> </u>
Brooks  ERSYSTEMS	LEFT.
ERSYSTEMS	
도 있는 것이 되었다. 그는 그는 그는 그는 그를 보면 생각하게 되었다. 그는 그를 보고 있는 것이 되었다. 그는 그를 보고 있는 것이 되었다. 그는 그를 보고 있다. 그를 보고 있는 것이 없는 그 그렇게 되는 것이 있는 그는 그는 그는 그를 보고 있었다. 그를 보고 있는 것이 되었다. 그를 보고 있는 것이 되었다. 그를 보고 있는 것이 없었다. 그를 보고 있는 것이 없는 것이 없는 것이 없다.	Sanor
· [10] -	
MARK D. KIMBRO	



## Applied Engineering Company INDUSTRIAL SERVICES DIVISION

151 Industrial Avenue, Greensboro, North Carolina 27406 P.O. Box 16266 • 919/275-1631

Mr. Bruce Hoffman
Base Maintenance Operations Division
Building 1202
Marine Corp Base
Camp Lejeune, NC 28542

January 19,1987

Re: Building BA-106 Cleaver-Brooks Boiler, Model CB 100-200, Unit L-80611

Dear Mr. Hoffman,

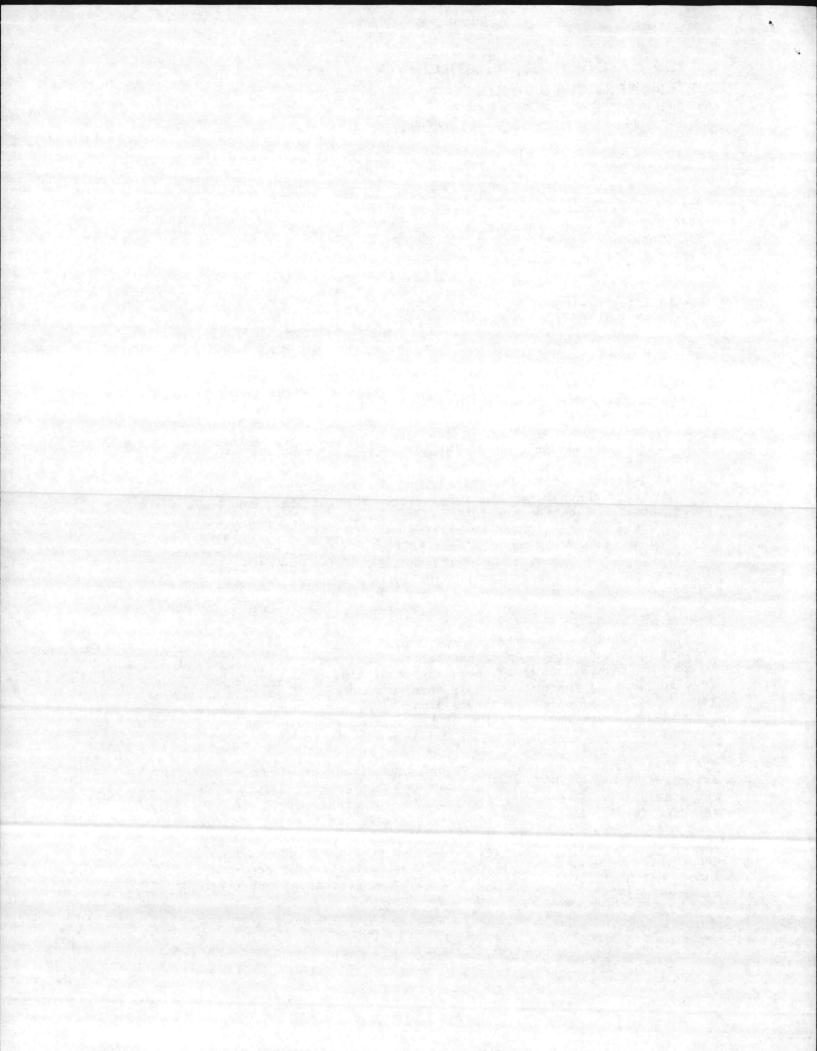
On January 8, 1987 we responded to a request for immediate service on the boiler which is the subject of this letter. We were advised that the boiler was shut down with "water running out the front and rear." Our serviceman, Mark Kimbro, was diverted from another job and arrived at Camp Lejeune at approximately 6:00 PM.

Upon inspection, Kimbro determined that the second pass tubes were leaking where they joined the tube sheet. Some of the tubes had separated from the tube sheet by as much as 1/8 of an inch. Kimbro worked until after 11:00 PM re-rolling all the second pass tubes. He returned the following morning and the boiler was hydrostatically tested under the supervision of the base inspector, Mr. Lanier. The test was conducted at 225 psi for fifteen minutes, and was satisfactory.

The main purpose in writing this letter, Mr. Hoffman, is to advise those who are involved with the operation of this boiler that, from what we observed, it is apparent that the boiler has been subjected to some extreme and unusual operating conditions. To have a boiler develop leaking tubes after only about six months of service is very rare. To find a boiler with tube separation to the extent observed by our serviceman is indicative of the unit having been subjected to some extreme conditions.

What these conditions are, we do not know. However, from our experience we know what commonly causes tubes to expand away from, the tube sheet. One cause is improper water treatment which results in scale forming on the tube. Scale prevents the transmission of heat through the tube, and ultimately the tube will overheat and expand away from the tube sheet. Another possible cause is thermal shock which results from the rapid introduction of cold feed water into a hot boiler. There are other reasons, certainly, but these two are common.





The secondary purpose of this letter is to advise you that we will invoice Camp Lejeune for our labor and expenses to repair this unit.

Startup on this boiler was completed on July 31,1986. Before startup, the pressure vessel was subjected to a hydrostatic test, and met this test satisfactorily. If there had been a defect in the manufacture of this unit, it would have shown up here, and the repairs to correct any defect would have been covered by the manufacturer's warranty. The pressure vessel, then, was sound when the boiler was put into service. The leaking tubes developed after the boiler had been in service for almost six months. The leaks were the result of the conditions under which this boiler was operated. They were not caused by a defect in manufacturing, and, as such, the repairs to correct the leaks are not covered under warranty.

We incurred a great deal of labor and travel expenses to repair this pressure vessel, Mr. Hoffman, and we believe we justifiably deserve to be compensated for our service. Accordingly, herewith is our invoice at our standard labor rates. Will you please forward it for processing?

Very truly yours,

APPLIED ENGINEERING COMPANY

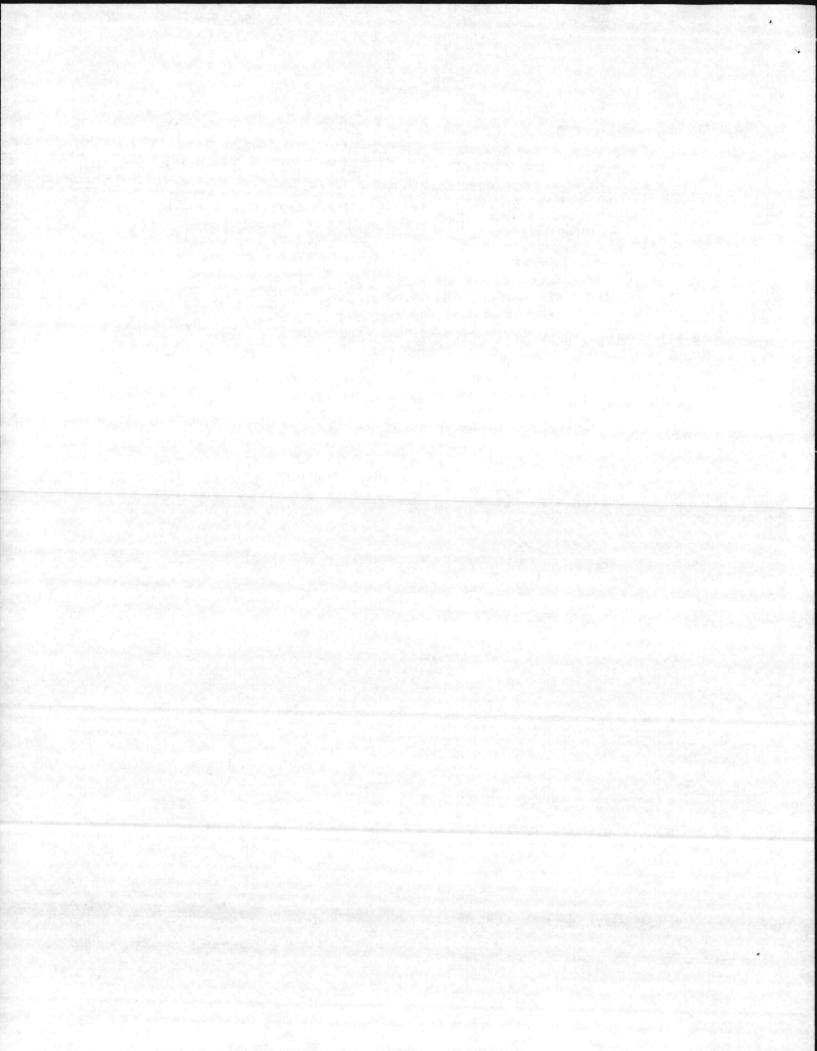
Robert W. Howell Branch Manager

RWH/kh

cc: Rick Jackson

Bob Anderson-Harris Construction Co.

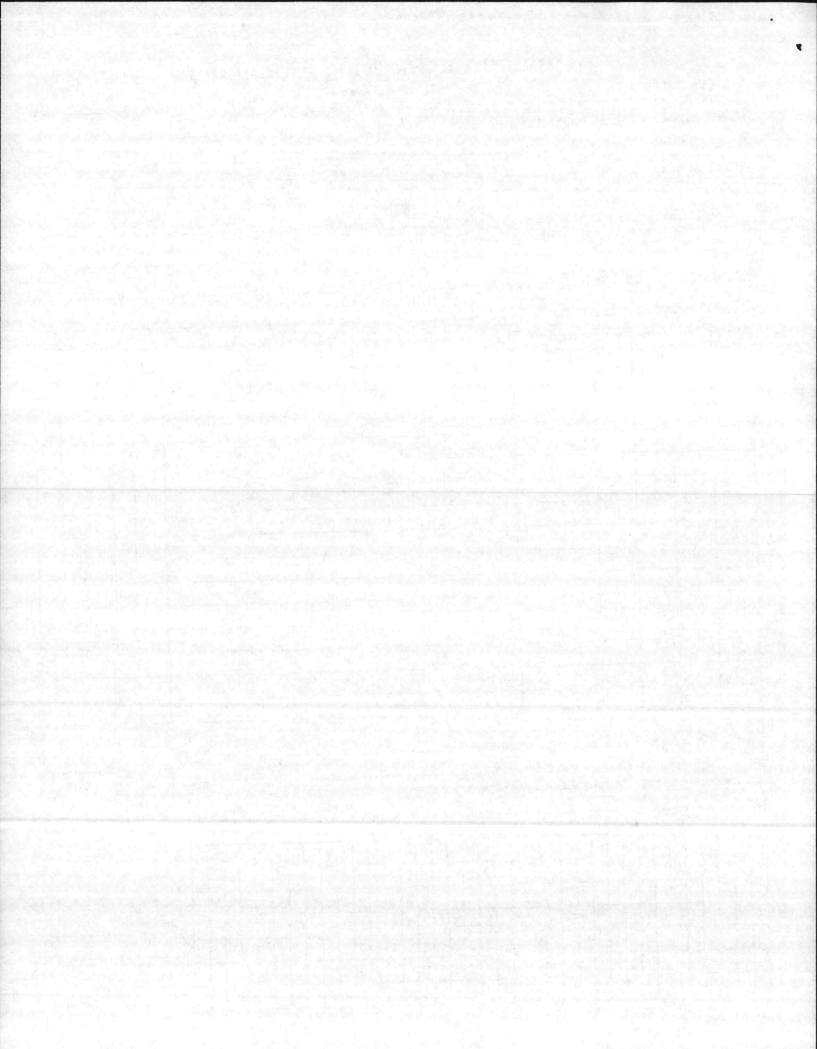






## Applied Engineering Company

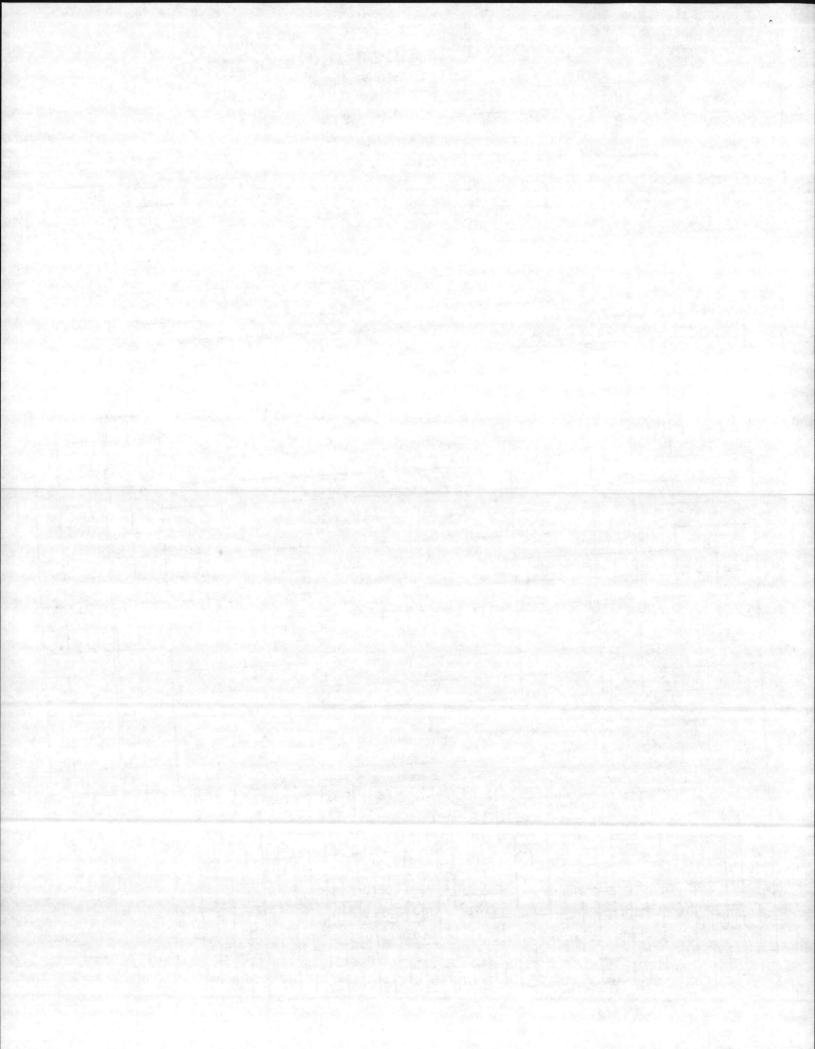
Our C	Base N Buildi	Mainte	enance	Operation	Invoice Date: 1-19- INVOICE Invoice No. 8791  Invoice No. 1-19- Invoice No. 8791  Date Shipped Via	87
Cost	Quan.	Shipped	B. O.	Part No.	Description Unit	
					Price	Amount
		-111120			Service by our represenative,	100
				A COST OF S	M. Kimbro, on your Cleaver-Brooks	and the state of
	9 9	7.00			Boiler Model CB 100-200,	
					Unit L-80611, on January 8,9,1987	1 1 2 2
					Building BA-106	
	- P - N				5 RT Job Hours @ 40.00 .	200 00
					5 OT Job Hours @ 60.00	
					4.0 Travel Hours @ 36.00	300.00
					230 Miles @ 0.40	144.00
					Motel @ 48.60	92.00
_	- 4			11.3.4	Meals @ 10.20	48,60
	Querra de				43.0.15	10.20
		9				
				715		
	Copies t	o Cus	2	Copies t	Salesman Total 794.80	
		Sales	Tax Exe	mption Certific	ate #	
					Total	794 80
		AMO	DUNT	· 路台社"与《	State Sales GENERAL Func. OTHER DETAIL	
<del>, , ,</del>	DEBIT			CREDIT	Code Code Led. Acct. # Dept. Job # Cost code	
HH	++		+++		3 2 8 6 0 1 0 5 2	
HH	++		111		3 2 5 2 7 0 2 0 0	
Ш	44				3 2 3 7 8 6 1 1 0 5 2	
Ш	1				32371343100	
			П		3 2 3 7 8 6 1 1 0 5 2	
			111		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
					3 2 3 7 8 6 1 9 0 5 2 AF8	DP COPY



-1		
2 44	A	
	W	TY .
	1	•

# Applied Engineering Company 151 Industrial Avenue

Customer	100	TT		151 Industrial Avenue Greensburo, N. C. 27406 Invoice Date:	
	State of the state			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<del>\$7</del>
Cur Order	No		Your Order 1		
rrom		F. C	O. B	Collect Prepaid Terms	
				Terms Terms	
ro: Base	Maint	enance	Operatio	ns Division Ref. No.	
Bull.	ding 1	202		ns Division Shipped to: Camp Lejeune, NC	9 9, 49
				Bud 1dd Dr. see	
Marti	e Cor	ps Base	Camp L	ejeune, NC	
ATTN:	Mr.	Bruce H	offman	, NC	
Cost Quar		T = 1		• III	
- Quar	. Shipped	B. O.	Part No.	Description	100
44			0	Unit	Amoun
. 1				Service by our representative,	
-				M. Kimbro, on your Cleaver-Brooks	
				Boiler Model CB 100-200,	
				.Unit L-80611, on January 8,9,1987	e na atrada
				Building BA-106	- A
. 1				5 RT Job Hours @ 40.00	200
	. "			5 OT Job Hours @ 60.00	200 00
1			-1	4.0 Travel Hours 3 36.00	303,85
				230 Miles 00.40	144.00
			4 14	Motel 2 48.60	92.00
			yes served to	Meals @ 10,20	43.60
		mark .			10.20
Copies t	o Cus	2	- Copies to	Salesman TotalTax	
	Sales	Tax Exemp	ption Certificate	Total	
	AMO			Total	
DEBIT	1		DEDIT	State Sales GENERAL Func. OTHER DETAIL	701 00
TIT	1		REDIT	Code Code Led. Acct. # Dept. Job # Cost code	
111		+++	H + H + H	32 8601052	
	++	HH		32 5270200	
111	++-	+++	+++1	3 2 3 7 8 6 1 1 0 5 2	
<del>                                     </del>	++-	╌┼┼┤	++-+	3 2 3 7 1 3 4 3 1 0 0	
111	+++	+++	++++	3 2 3 7 8 6 1 1 0 5 2 Approved by:	
<del>├ ├ ├ ┆</del>	+++	+++	++	3 2 3 7 8 6 0 9 0 4 2 0 0 3 4 8	
				3 2 3 7 8 6 1 9 0 5 2	



### APPLIED ENGINEERING COMPANY INDUSTRIAL SERVICES DIVISION

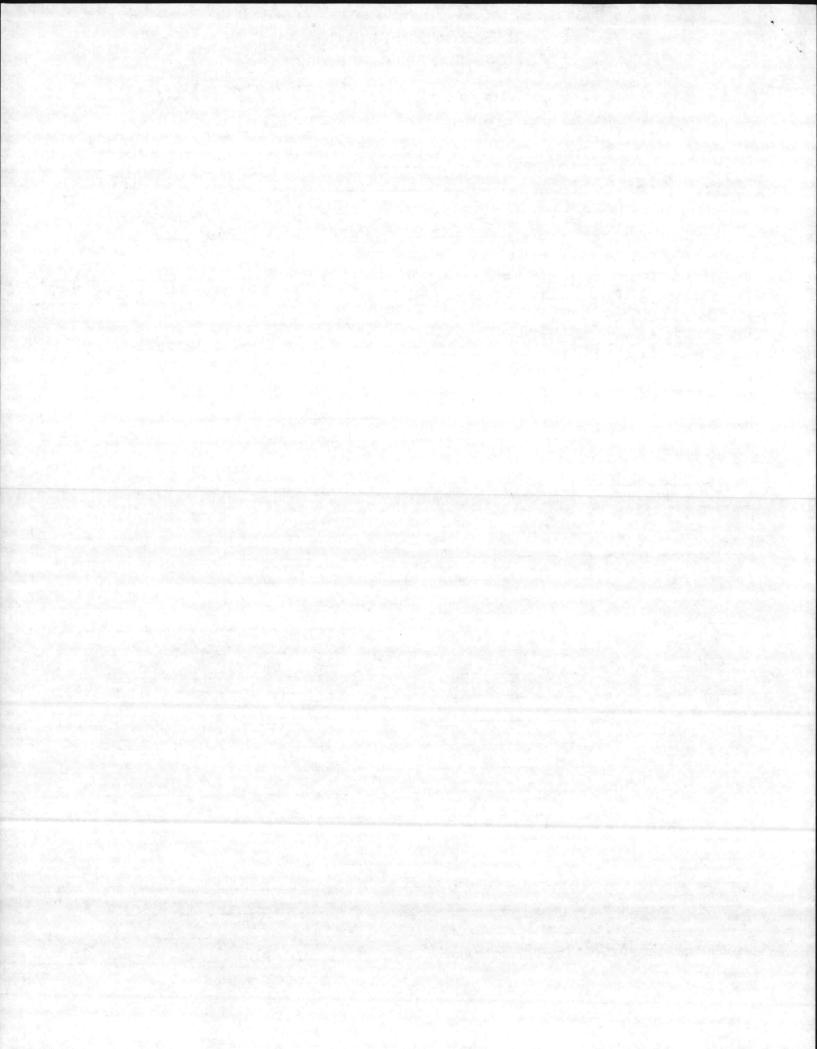
P.O. Box 16266, **Greensboro, N.C.** 27406 151 Industrial Avenue 919/275-1631

P.O. Box 1327, **Orangeburg, S.C.** 29116-1327 1525 Charleston Road 803/534-2424

P.O. Box 17303, **Greenville, S.C.** 29606 28 Doolittle Rd. 803/297-1783

P.O. Box 450046, Atlanta, GA. 30345 2004 Weems Road, Tucker, GA. 404/934-0420

8.87 5:00 11:30 New 3-2 Traccoville \$100	Madel N	or <u>CAMP</u> 31da. BA	-106	City JACKS	SONVILLE	_ State	N.C.	78	
DATE Start Finish FROM - TO MILES RT OT RT CO -8-87 5:00 11:20 New Boss - TACKSONING STIDE -9-87 8:00 5:00 TACKSONNING - GREENING 230 3.0 1.0 5.0  Expenses: Motel 48 60 Meals 10 <sup>20</sup> Other  OTY PART NO. PARTS USED  Work Performed: 1-8-87 Rolled all 740 pass tubes. 1-9-87 Hydrous intically tested boiler to 2725 10 ouder the Supervision of Rise Equipment inspector ® 7225 15 for 155 n Tested good.						8061	\	u. Še	
Start Finish  RT OT RT C  8-87 5:00 11:30 New Dean - Trecountile ## 5.  9-87 8:00 5:00 Trecountile Greenshoo 230 3:0 1:0 5:0  Expenses: Motel 48 60 Meals 10 <sup>29</sup> Other  OTY PART NO. PARTS USED  Work Performed: 1-8-87 Rolled all ZMP pass tube's. 1-9-87  Hydrostatically tested boiler to 275 10 under the  Supervision of 1382 Equipment inspector @ 275 1h for 15 n  Tested good.	DATE		ME	50011 50		TRAVEL TIME   JOB TIME			TIME
Expenses: Motel 48 60 Meals 10 <sup>29</sup> Other  OTY PART NO. PARTS USED  Work Performed: 1-8.87 Rolled All Z40 pass tubes. 1-9-87 Hydrosindically tested boiler to ZZ510. Under the Supervision of Targe Equipment inspector @ ZZ511 tor 15 n. Tested good.	DATE	Start	Finish	FROM - 10	MILES	RT	ОТ		01
Expenses: Motel 48 60 Meals 1020 Other  OTY PART NO. PARTS USED  Work Performed: 1-8-87 Rolled All ZND pass tubes. 1-9-87 Hydrosindically rested boiler to 275 10. Under the 30 person of 18182 Equipment inspector @ 275 11 to 215 n. Tested good.	-8-87	5:00	11:30	New Beam - Incksouille	85100		+5		5.5
Work Performed: 1-8-87 Rolled All ZND pass tubes. 1-9-87 Hydrostatically tested boiler to ZZ510. under the Supervision of BASE Equipment inspector @ ZZ51h for 15 a Tested good.	-9-87	the second second second second second				3.0	1.0	5.0	
Work Performed: 1-8-87 Rolled All ZND pass tubes. 1-9-87 Hydrostatically tested boiler to ZZ510. Under the Supervision of Base Equipment inspector @ ZZ511 for 15 a Tested good.			(6			*	The second		- 12 - 12 - 12 - 12 - 12 - 12 - 12 - 12
Work Performéd: 1-8-87 Rolled All ZND press tubes, 1-9-87 Hydrostration dested boiler to ZZ510. Under the Supervision of RASE Equipment inspector @ ZZ511 for 15 n Tested good.	Expenses	: Motel	48 60	Meals _10 <sup>20</sup> (	Other				
Work Performéd: 1-8.87 Rolled All ZND press tubes. 1-9-87 Hydrostration de Bree Equipment inspector @ ZZSID tor IS n Tested good.	QTY	PART NO.		PARTS USED				T	
Supervision of Base Equiplent inspector @ 22511 for 15 a Tested good.	Work Peri	forméd: 1	-8.87	Rolled All ZW	o pass t	voes	. 1-	9-87	
	SUPERVI	שוסוב	ot 1	Base Equipment in	spector (	0 ZZ	= 1 <u>h</u>	tor 1	5 m
								1-54	1000
vice Man: M. D. V. Accepted by:									



PO BOX 421 MILWAUKEE, WISCONSIN 53201

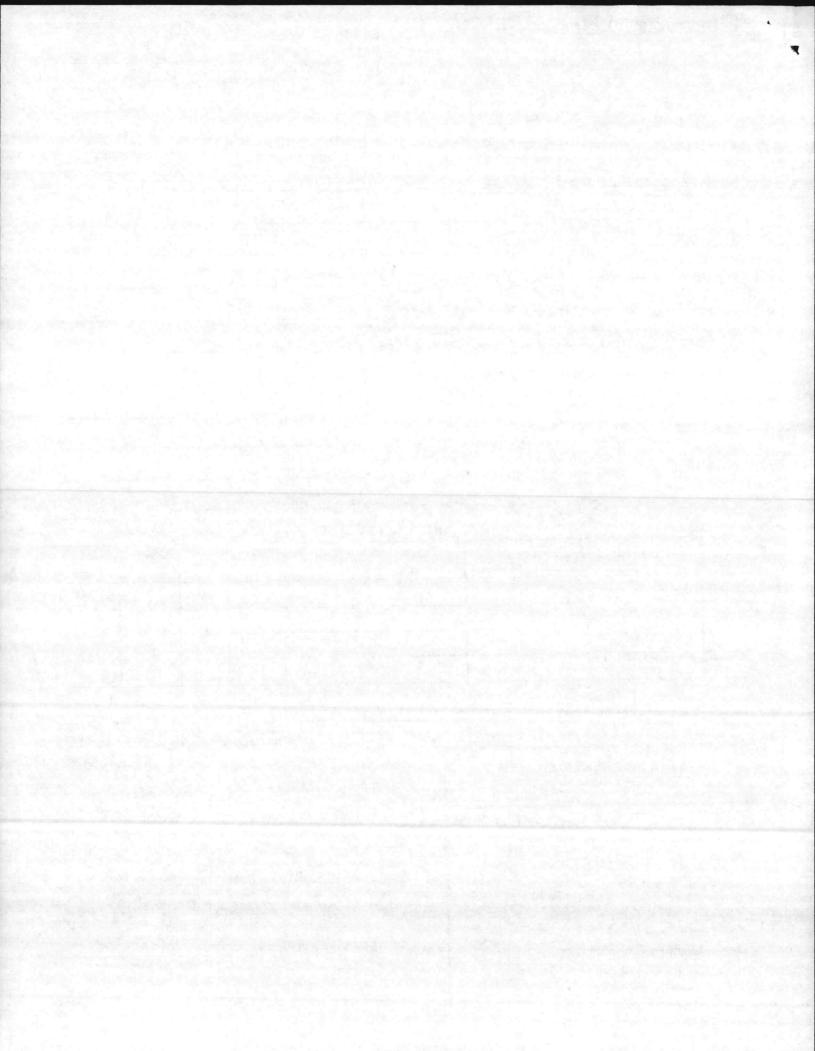
FIELD REPORT **INFORMATION** SHEET

(Job Concluded)
Model No. <u>CB101-200</u>
Serial No. L- 80611
Design Pressure <u>150</u> ≠

			. 10
	,	1	64
1	ZA.	- [	66
P	,	1-	20
	1	r	

Working Pressure: Steam 50# Hot Water Name MARINE CORPS BASE Bld, BA-106 Address ONS/OW Beach City, State and Zip CAMP Lejune, North Caroling Name & Initials & Title of Person in Charge (Print) Bob Anderson Company Represented HARRI'S CONSTRUCTION

R.H. Wester, Steven Parson, FRANK BOWING, Bobby Mealows Operating Instructions Given To: Bobby Feder Seth Mills Company Represented MARINE GADS BASE, BASE MAINTANCE Who Has The Manual? Bob Anderson \_\_\_\_\_ Manual No. 750- 9/ Company Represented HARRI'S Construction Co. Boiler Water Treatment Discussed With: Name (Print) Ray Hunt Contract office, Comple, use Bld 1005 Company TIME AND TRAVEL DATA Date Travel Job From City To City Miles Time Time FRON 7-20 thus 8-29-86 Questing 740 Is call to be paid for by customer? No Other? ACCEPTED: Name STARTING SERVICE Company HARRIS COUST CO. INC OIL X GAS Print Name Robert Anderson PLEASE ATTACH APPROPRIATE SUPPLEMENTAL FORMS This unit received complete start-up, operator trained, General Form C10-1275A and equipment operating satisfactorily. Oil Fuel Form C10-1269A SERVICES BY: (Line ) Gas Fuel Form C10-1270A Model 3 Form C10-1283A Model 4 Form C10-1487A APPROVED BY: Degerator Form C10-1267A Service Manager Water Conditioner Form C10-1268A



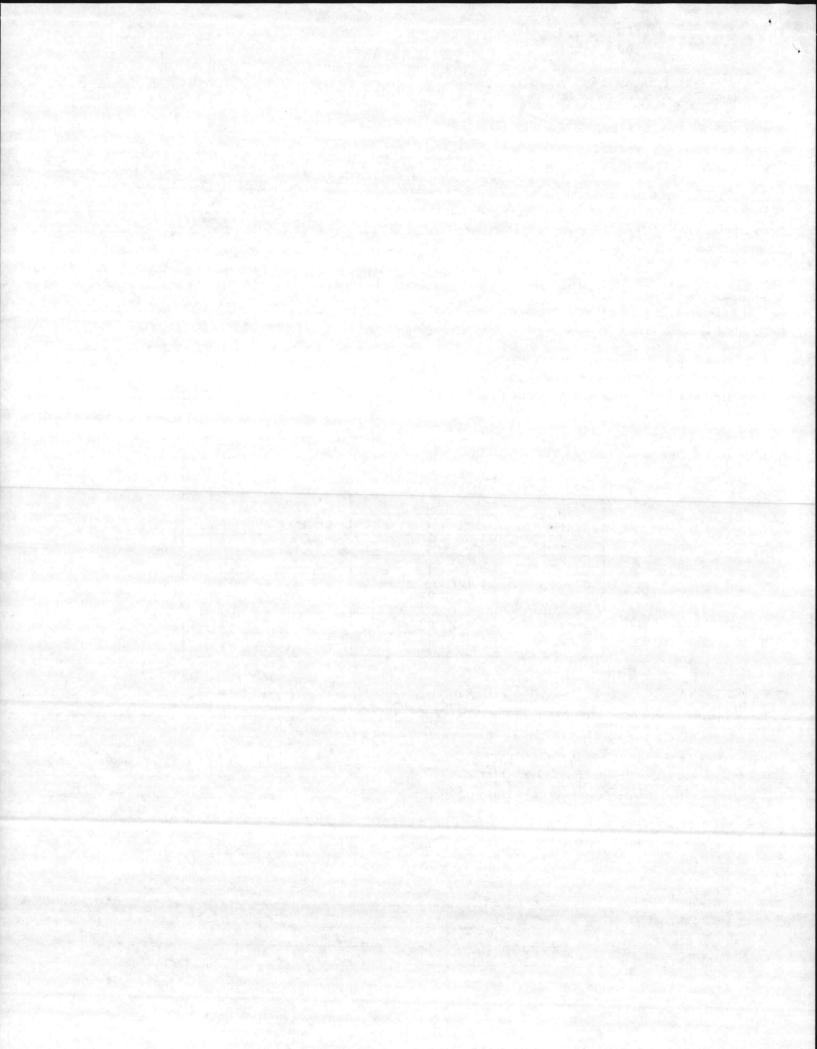


DIVISION OF AQUA-CHEM, INC. P. D. BOX 421 MILWAUKEE. WISCONSIN 53201 U. S. A.

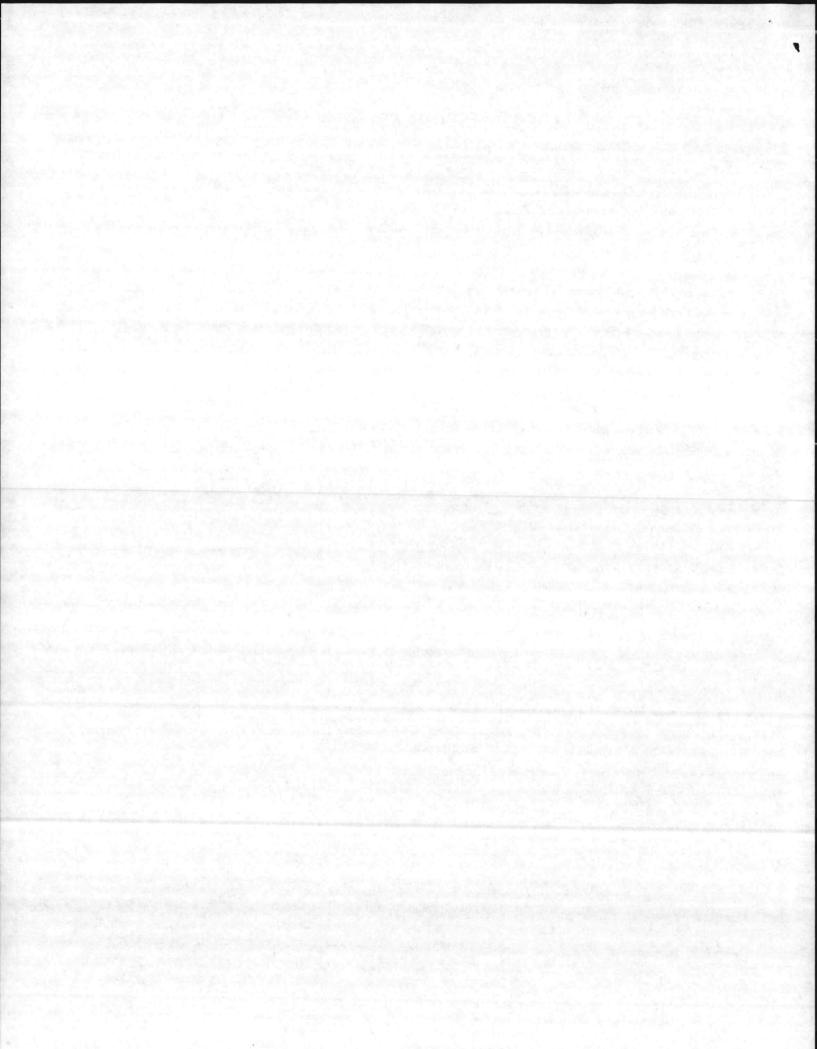
### FIELD REPORT MODEL CB 15-800 HP GENERAL

MODEL 68/01-200	
SERIAL 1-60811	

		The second secon	-44:2							
	What is general condition of bo		THE PROPERTY OF							
	New Construction Dan			ALL STREET, ST	of Only	Outdoo				0
	At time of start-up is there and	adequate supply of a	combustion a	ir? yes		2A. Boil	er Room A	mbient 7	emperatu	. 70
ĺ	Is boiler level? YE5	_ 4. Are blow do	wn valves pr	ovided on boil	er shell? Fro	ont Ves		Rear &	125	
	Are water column and/or level	control drain valve	tight? ye	5 .			The second			
	Are all blow down valves piped	to a safe point of a	discharge?							
	Have all hand hole covers, yok	es, and gaskets bee	n checked fo	r tightness?	105		Man hole c	over? X	125	
	Has unit been boiled out?	es if not	t, has this be	en discussed	with party sig	gning this	report? _	andy.		
	importance to boiler owner.)				ystem conditi	ion. Clean	liness of p	ressure	vessel is	of extre
	Was boiler used for temporary	heat during constru	ction period	?						-1134 F A
	Electrical Characteristics:	74.0								
	<ul> <li>Blower motor connected for</li> <li>Blower motor name plate am</li> </ul>	208 vol	ts. b. 'T' te	erminal voltage	at blower mo	otor starter	during hi	gh fire _	285	28
	d. Lowest actual control circu	it voltage during sta	artina cycle	120	; araw (ea	ich leg at i	iign fire		20,0	20,
	e. 'T' terminal voltage at air p			1			9.59	Y	v (62.8)	
	f. Air pump motor name plate	amperage rating at a	onnected vol	toon M/A	dean	(each les	at high fi-	1		
	g. Electric oil heater voltage		/ 4							
	If control circuit transformer fu	rmished, is it prope	rly wired for	existing voltag	e condition?	7-3				
		CARRELL TO SERVICE			adding yes					
			-	100			100			
				USE						
		CIRCUIT	SIZE	TYPE	STARTE	R OVERL	OADS			
		Blower Motor	SIZE		STARTE	ER OVERL	.OADS			
		Blower Motor Air Pump Motor	SIZE	TYPE	STARTE	ER OVERL	OADS			
		Blower Motor	SIZE	TYPE	STARTE FH	ER OVERL	OADS			
		Blower Motor Air Pump Motor	SIZE FLAK-35 N/A N/A	TYPE L:Hkrisc	STARTE FH	S3	OADS			
		Blower Motor Air Pump Motor Oil He ater	SIZE FLAK-35 N/A N/A	TYPE	STARTE FH	ER OVERL	OADS X '			
		Blower Motor Air Pump Motor Oil He ater Oil Pump Motor	SIZE FLAK-35 N/A N/A	TYPE L:Hkrisc	BFH	53				
		Blower Motor Air Pump Motor Oil He ater Oil Pump Motor Control Circuit	SIZE FLAK-35 N/A N/A	TYPE L:Hkrisc	BFH	53				
		Blower Motor Air Pump Motor Oil He ater Oil Pump Motor Control Circuit Others	SIZE FLUK-35 N/A N/A ELNK6/4	TYPE LittleFuse LittleFuse	Ø F H	53 x	x '			
	Load on unit(circle one) mode	Blower Motor Air Pump Motor Oil He ater Oil Pump Motor Control Circuit Others	SIZE FLAK-35 N/A N/A ELNK6/4	TYPE LittleFuse  ChittleFuse  Sht, extremely	Ø F H	53 x	x '			
	Safety or relief valve(s) name	Blower Motor Air Pump Motor Oil He ater Oil Pump Motor Control Circuit Others	SIZE FLAK-35 N/A N/A ELNK6/4  extremely lig 65# p	TYPE L;###Fuse  Lifth fuse  the fuse	X heavy, sudde	53 X	x '			
	Safety or relief valve(s) name Are safety or relief valves pipe	Blower Motor Air Pump Motor Oil He ater Oil Pump Motor Control Circuit Others  plate pressure setting ed to a safe point of	SIZE FLWE35 N/A N/A ELNE6/4 extremely lighting 65# p	TYPE LittleFuse  LittleFuse  pht, extremely  70#	X heavy, sudden	X en peak loo	X `		95	
	Safety or relief valve(s) name Are safety or relief valves pipe Does it appear that discharge p	Blower Motor  Air Pump Motor  Oil He ater  Oil Pump Motor  Control Circuit  Others  Trate, heavy, light plate pressure settin ed to a safe point of piping is adequately	SIZE FLAK-35 N/A N/A ELNK6/4  extremely light of discharge are supported so	TYPE LittleFuse  LittleFuse  pht, extremely  70#	X heavy, sudden	X en peak loo	X `	ody? ¥	es	
	Safety or relief valve(s) name p Are safety or relief valves pipe Does it appear that discharge p Are drip-pan ells or flexible co	Blower Motor  Air Pump Motor  Oil He ater  Oil Pump Motor  Control Circuit  Others  orate, heavy, light plate pressure settined to a safe point of piping is adequately connections used?	SIZE FLOK-35 N/A N/A ELNK6/4  extremely light of discharge or supported so	TYPE LittleFuse  thit, extremely  of that weight o	X heavy, sudden	X en peak loo	X `	ody? ¥	es	
	Safety or relief valve(s) name p Are safety or relief valves pipe Does it appear that discharge p Are drip-pan ells or flexible co	Blower Motor  Air Pump Motor  Oil He ater  Oil Pump Motor  Control Circuit  Others  orate, heavy, light plate pressure settined to a safe point of piping is adequately connections used?	SIZE FLOK-35 N/A N/A ELNK6/4  extremely light of discharge or supported so	TYPE LittleFuse  thit, extremely  of that weight o	X heavy, sudden	X en peak loo	X `	ody? 😾	es	
	Safety or relief valve(s) name pare safety or relief valves pipe Does it appear that discharge pare drip-pan ells or flexible controlled to the controlled water temperature:	Blower Motor  Air Pump Motor  Oil He ater  Oil Pump Motor  Control Circuit  Others  orate, heavy, light plate pressure settined to a safe point of piping is adequately connections used?	SIZE FLAK-35 N/A N/A ELNK6/4  extremely light of a supported so (CS) iller) /60	TYPE LittleFuse  thit, extremely  of that weight o	X heavy, sudden	X en peak loo	X `	ody? ¥	es	
	Safety or relief valve(s) name particles or relief valves pipe Does it appear that discharge particles or flexible controlled to the controlled or the particles. Find the controlled or the particles or flexible or flex	Blower Motor  Air Pump Motor  Oil He ater  Oil Pump Motor  Control Circuit  Others  Prate, heavy, light plate pressure settined to a safe point of piping is adequately ennections used?	SIZE FLAK-35 N/A N/A ELAK-6/4  extremely light of the scharge are supported so (CS) iller) /60 ther boiler)	TYPE LittleFuse  LittleFuse  ght, extremely 70**  That weight o	heavy, sudden	X en peak loo	X `	ody? ¥	es	
	Safety or relief valve(s) name pare safety or relief valves pipe Does it appear that discharge pare drip-pan ells or flexible continuous water temperature:	Blower Motor  Air Pump Motor  Oil He ater  Oil Pump Motor  Control Circuit  Others  Plate pressure setting and to a safe point of piping is adequately connections used?  Seedwater (steam book Return water (hot was app of tubes at lowes a	SIZE  FLOK-35  N/A  N/A  ELNR6/4  extremely light of supported so (CS)  iller) /60  ther boiler) _  t visible point	TYPE LittleFuse  thit extremely  To the fuse  that weight of the fuse  the fuse  that weight of the fuse  that weight of the fuse  the fuse  that weight of the fuse  that weight of the fuse  that weight of the fuse	heavy, sudden to per drains?	× X en peak loo	X `		es	
	Safety or relief valve(s) name pare safety or relief valves pipe Does it appear that discharge pare drip-pan ells or flexible continuous water temperature:	Blower Motor  Air Pump Motor  Oil He ater  Oil Pump Motor  Control Circuit  Others  Plate pressure setting and to a safe point of piping is adequately connections used?  Seedwater (steam book Return water (hot was app of tubes at lowes a	SIZE  FLOK-35  N/A  N/A  ELNR6/4  extremely light of supported so (CS)  iller) /60  ther boiler) _  t visible point	TYPE LittleFuse  this extremely  of that weight of the gauge glass at open	heavy, sudden per drains?	× X en peak loo	X `		es	
	Safety or relief valve(s) name Are safety or relief valves pipe Does it appear that discharge p Are drip-pan ells or flexible co Incoming water temperature: F Actual height of water above to List dimensions in inches mea	Blower Motor  Air Pump Motor  Oil He ater  Oil Pump Motor  Control Circuit  Others  Plate pressure setting and to a safe point of piping is adequately connections used?  Seedwater (steam book Return water (hot was app of tubes at lowes a	SIZE  FLOK-35  N/A  N/A  ELNR6/4  extremely light of supported so (CS)  iler) /60  ter boiler) _  t visible point	TYPE LittleFuse  this extremely  of that weight of the gauge glass at open	heavy, sudden to per drains?	× X en peak loo	X `		es	
	Safety or relief valve(s) name Are safety or relief valves pipe Does it appear that discharge p Are drip-pan ells or flexible co Incoming water temperature: F Actual height of water above to List dimensions in inches mea	Blower Motor  Air Pump Motor  Oil He ater  Oil Pump Motor  Control Circuit  Others  Plate pressure setting and to a safe point of piping is adequately connections used?  Seedwater (steam book Return water (hot was app of tubes at lowes a	SIZE  FLOK-35  N/A  N/A  ELNR6/4  extremely light of supported so (CS)  iler) /60  ter boiler) _  t visible point	TYPE LittleFuse  this extremely  of that weight of the gauge glass at open	heavy, sudden per drains?	× X en peak loo	X `		es	
5	Safety or relief valve(s) name Are safety or relief valves pipe Does it appear that discharge p Are drip-pan ells or flexible co Incoming water temperature: F Actual height of water above to	Blower Motor  Air Pump Motor  Oil He ater  Oil Pump Motor  Control Circuit  Others  Plate pressure setting and to a safe point of piping is adequately connections used?  Seedwater (steam book Return water (hot was app of tubes at lowes a	SIZE  FLOK-35  N/A  N/A  ELNR6/4  extremely light of supported so (CS)  iler) /60  ter boiler) _  t visible point	TYPE LittleFuse  this extremely  of that weight of the gauge glass at open	heavy, sudden per drains?	× X en peak loo	X `		es	
	Actual height of water above to List dimensions in inches mea Pump Off	Blower Motor  Air Pump Motor  Oil He ater  Oil Pump Motor  Control Circuit  Others  Plate pressure setting and to a safe point of piping is adequately connections used?  Seedwater (steam book Return water (hot was app of tubes at lowes a	SIZE  FLOK-35  N/A  N/A  ELNR6/4  extremely light of supported so (CS)  iler) /60  ter boiler) _  t visible point	TYPE LittleFuse  this extremely  of that weight of the gauge glass at open	heavy, sudden per drains?	× X en peak loo	X `		es	



	used (steam boiler)	PREMEAT /A	WE TYONG	
		cally a second and a second at the	And the second of the second of the	
Type of system (hot w		three-way valve	primary-secondary	reverse-return accumulator-tank
Pressure or temperatu	ure control settings:			
Operating Control	Cut-In 4	2# Cut	1-Out \$50#	
Operating Control Modulating Control	To Low 4	<b>4</b> <sup>#</sup> ⊤₀	High	
High Limit Control	Cut-In	Cu1	1-Out _58#	
	ety or relief valve op	peration is perdicated on	operating pressure or temp	erature being no higher than 85% of
valve(s) set				
a. If hot water boiler		pressure?		
b. If equipped with m	ninimum temperature	Aquastat, what is "On"	setting?	
		at, what is "On" setting?		
			ing or to shut-off circulating	g pump on a rise of outdoor
temperature?				
	are there system d	evices to provide night.	weekend, or holiday setbac	k of system temperature?
e. If not water botter	, die more system et			
16.1	talled on steem boile	ers have controls been	set according to customer's	requirments?
			to operator?	
. Was operation of com	lbustion control expli	10 Carial N	8605 Co	4- N- 3
Make	Model 1	Serial No	I stehout switch timing	35 sec.
. Safety timing (Flame	response)	Sec. 21.	describer switch mining _	ies
. Was rear door opened	before firing?	Closing an	d reseating explained:	yes Yes
. Were front doors oper	hed before firing?	12 VCC 2	Was care of refractory a	nd wash coating explained? YES
. Furnace and rear doo	r retractory inspecte	displacing to fining? It	ICC 27 Tune of pilot	nd wash coating explained?
. Was burner removed o	and its operation exp	stained prior to tiring:	27. Type of prior	: Gas Oil
			1PS 20 W	- alastenda (a) satting avalained?
. Was customer shown	how to clean pilot ar	ind adjust pilot flame?	29. Was prope	r electrode (s) setting explained?
. Was ignition system,	tightness of connect	tors etc., explained?	29. Was prope <u>es</u>	r electrode (s) setting explained?
. Was ignition system, . Was function of scan	ner explained?	tors etc., explained?	es	
. Was ignition system, . Was function of scan . If fuel oil preheated	ner explained?	ensate wasted? N/A	Piped to	o drain?
<ul> <li>Was ignition system,</li> <li>Was function of scan</li> <li>If fuel oil preheated</li> <li>Was operation with m</li> </ul>	ner explained? 1/e with steam, is conde	ensate wasted? N/A	Piped to	
. Was ignition system, . Was function of scan . If fuel oil preheated . Was operation with m and explained?	ner explained? 1/2 with steam, is conde	ensate wasted? N/A versus automatic operati	Piped to	o drain? ol potentiometer demonstrated
. Was ignition system, . Was function of scan . If fuel oil preheated . Was operation with m and explained?	ner explained? 1/2 with steam, is conde	ensate wasted? N/A versus automatic operati	Piped to	o drain? ol potentiometer demonstrated
Was ignition system, Was function of scans If fuel oil preheated Was operation with m and explained? Have you cautioned o	with steam, is condenantal potentiometer of special personnel and liting in undue expansion	ensate wasted? N/A versus automatic operations practice of operation and contraction?	Piped to	o drain? ol potentiometer demonstrated
Was ignition system, Was function of scans If fuel oil preheated Was operation with m and explained? Have you cautioned a "On-Off" firing result.	tightness of connect ner explained? Ye with steam, is conde- tanual potentiometer of sperating personnel a lting in undue expans temperature was burn	ensate wasted? N/A versus automatic operations against practice of operations and contraction?	Piped to price to pri	o drain? ol potentiometer demonstrated er only thus creating unwanted condition
Was ignition system, Was function of scans If fuel oil preheated Was operation with m and explained? Have you cautioned a "On-Off" firing result.	tightness of connect ner explained? Ye with steam, is conde- tanual potentiometer of sperating personnel a lting in undue expans temperature was burn	ensate wasted? N/A versus automatic operations against practice of operations and contraction?	Piped to price to pri	o drain? ol potentiometer demonstrated er only thus creating unwanted condition
Was ignition system, Was function of scann If fuel oil preheated Was operation with m and explained? Have you cautioned o "On-Off" firing result At what pressure or t If boiler equipped with	with steam, is condenantal potentiometer of the population of the	ensate wasted? N/A versus automatic operations against practice of operation and contraction?  mer turned to automatic possible and allowed?	Piped to ion by the modulating contracting on manual potentiometrosition?	o drain? ol potentiometer demonstrated er only thus creating unwanted condition
Was ignition system, Was function of scann If fuel oil preheated Was operation with m and explained? Have you cautioned o "On-Off" firing result At what pressure or t If boiler equipped with	with steam, is condenantal potentiometer of the population of the	ensate wasted? N/A versus automatic operations against practice of operation and contraction?  mer turned to automatic possible and allowed?	Piped to ion by the modulating contracting on manual potentiometrosition?	o drain? ol potentiometer demonstrated er only thus creating unwanted condition
. Was ignition system, . Was function of scans . If fuel oil preheated . Was operation with m and explained? Have you cautioned o "On-Off" firing resul . At what pressure or t . If boiler equipped wit . Was linkage and cam . Was setting or adjust	with steam, is condenantal potentiometer of the potentiometer of the potentiometer of the potention of the p	ensate wasted? N/A versus automatic operations against practice of operations and contraction? mer turned to automatic possible and plained?	Piped to ion by the modulating contraction on manual potentiometrosition?  40# operation explained?	o drain? ol potentiometer demonstrated er only thus creating unwanted condition
. Was ignition system, . Was function of scans . If fuel oil preheated . Was operation with m and explained? Have you cautioned a "On-Off" firing resul . At what pressure or t . If boiler equipped wit . Was linkage and cam . Was setting or adjust . Was water column and	tightness of connectioner explained?  with steam, is condentional potentioneter of the steam of	ensate wasted? N/A versus automatic operations against practice of operation and contraction?  mer turned to automatic possible and allowed?	Piped to price to provide the modulating control of the modulation of the modulating control of the	o drain? ol potentiometer demonstrated er only thus creating unwanted condition



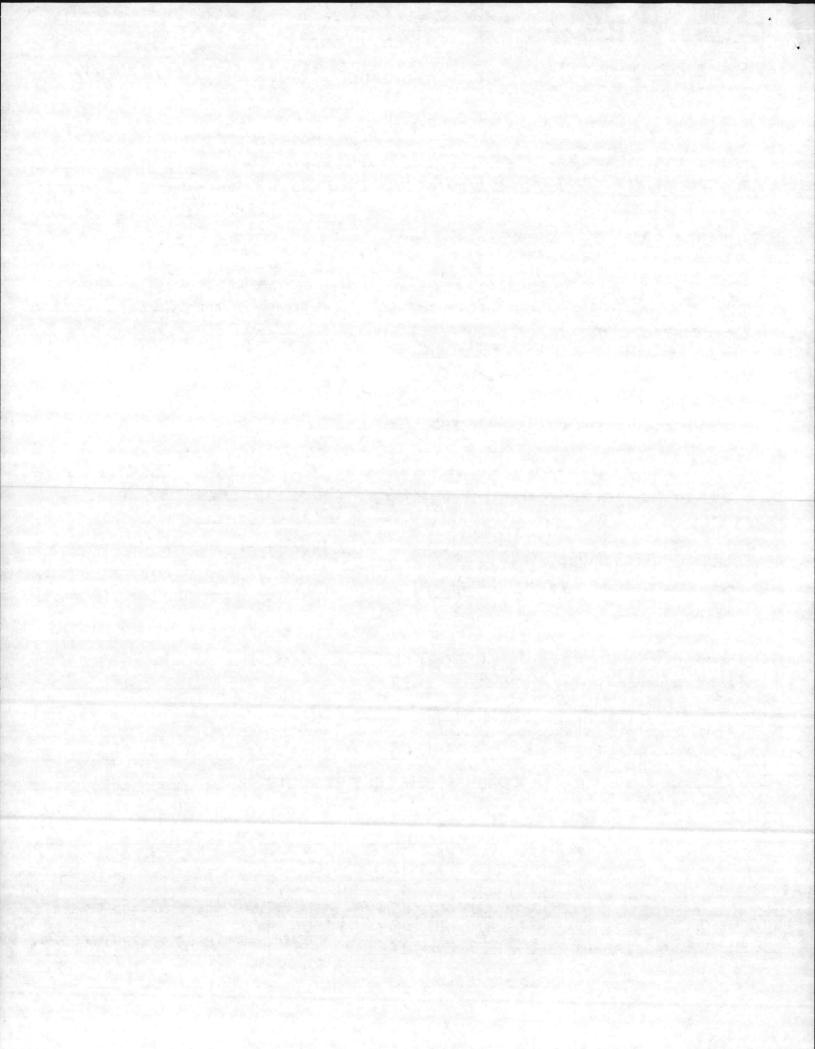


DIVISION OF AQUA-CHEM, INC. PO BOX 421 MILWAUKEE WISCONSIN 53201

#### FIELD REPORT MODEL CB 15-800HP OIL FUEL

MODEL <u>CB101-200</u> SERIAL <u>L-608/1</u>

1.	Grade of Oil $\pm \lambda F_0$ 2. Oil suction line size $3/4^4$ 3. Oil return line size $3/4^4$
	Is fuel supply tank above or below level of boiler? Above 5. Length of horizontal suction line run
	Length of vertical lift of suction line Day tank in Boller of Type of check valve usedlocation
8.	and the second s
o.	Time required for oil pressure to come to running pressure
10	Was flow of oil completely outlined to operator? 125
	"마마 : " ' 마마 : " '
11.	If more than one unit, does each unit have an individual fuel pump? VES ; common , individual suction line?  Pump Make and model TILI . Motor LA H.P., Type of Drive breef
	If belt-driven equipment involved, was operator shown how to adjust belts?
	Was servicing and cleaning of strainers explained?
	Was relative position of diffuser and nozzle checked and explained?
5.	Was lube-oil level, its importance, and maximum and minimum level explained?
6.	Was atomizing air pressure system checked out and explained?
7.	Was air filter and lube-oil strainer cleaning shown? YES 18. Was operation of oil metering valve explained?
9.	Was secondary air adjustment, its importance on lighting, and affects on combustion explained? YES
	Was metering valve packing adjustment or replacement demonstrated? yes
	Were functions of combustion air proving switch and atomizing air proving switch explained?
	Was adjustment and function of fuel oil controller and the flow of oil through it explained?
	Was proper method of cleaning burner gun and nozzle assembly demonstrated?
	Oil termperature at fuel oil controller
	Oil supply pressure 75#
	그는 사람들이 얼마나 되었다면 하는 사람들이 되었다면 하는 사람들이 되었다면 하는 것이 되었다.
7.	Has oil piping, including fuel oil controller, from last strainer to solenoid valve been flushed and cleaned?
	Have solenoid valve(s) been disassembled to check cleanliness of seat and disc?
8.	If equipped, has nozzle post purge been explained?
	And is operation proper?Nozzle size
9.	If gas pilot, what is pressure with solenoid valve open
_	If light oil pilot, what is oil pressure?
0.	
0.	COMBUSTION TEST RESULTS
	el Oil Low Fire High Fire
Fue	el Oil Low Fire High Fire  Cam Position 1 2 3 4 5 6 7 8 9 10 11 12
=u€	el Oil Low Fire High Fire  Cam Position 1 2 3 4 5 6 7 8 9 10 11 12  CO2 10.9 11.6 11.8 11.9 12.4 13.1 13.6 13.6 13.7 13.9 131. 13.7
% (	el Oil Low Fire High Fire Cam Position 1 2 3 4 5 6 7 8 9 10 11 12 $1.00$
% ( % ( Sm	Cam Position   1   2   3   4   5   6   7   8   9   10   11   12
% (Sm	el Oil Low Fire High Fire Cam Position 1 2 3 4 5 6 7 8 9 10 11 12 $1.00$



gelisel English with Company that

Manufacturer's Figurescritative Division

# COMBUSTION IEST RESULTS

## Fuel Gas

FHONE 1919 175-1631

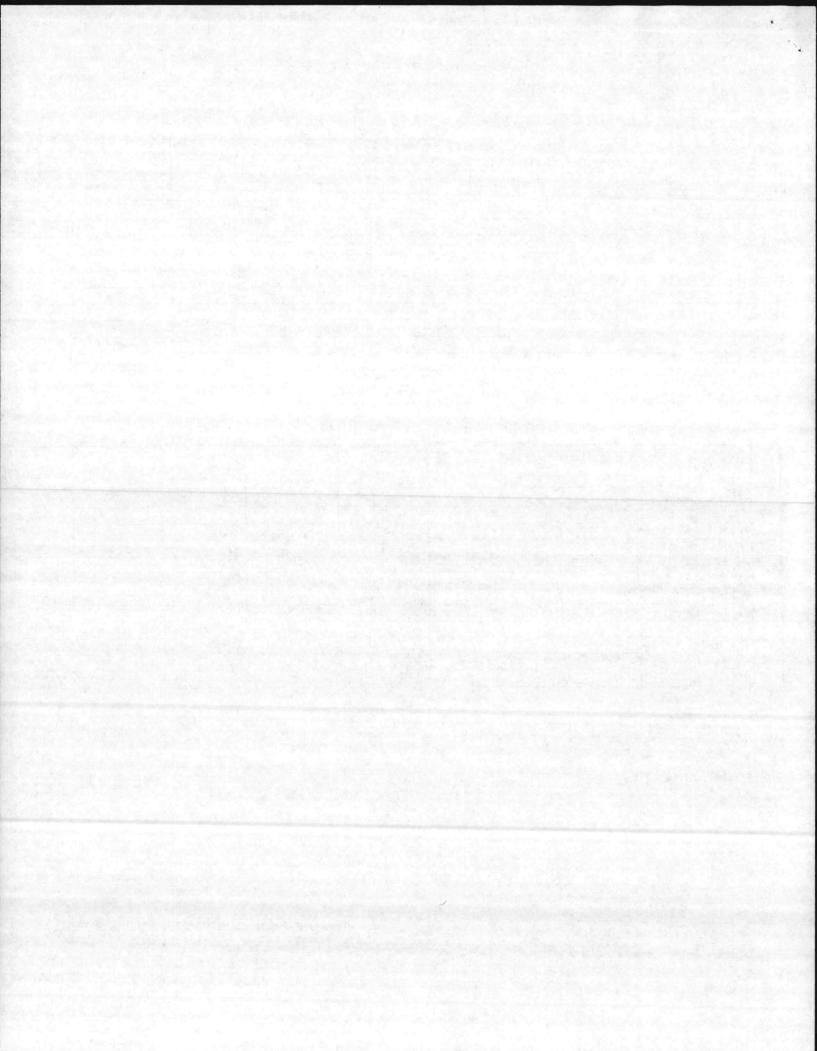
	% CO <sub>2</sub>	%. O <sub>2</sub>	% C <sub>0</sub>	Gas Supply Press.	Stock Temp.	Steam Press.	Steam Flow	Steam Temp.	Feed W Temp
1	Service 1								
2.								and the second second	6. E200 % 11 (%)
3									
1									
5					Bernaldson Calife				
6									i santa
7					STATE OF STATE OF STATE OF				
8	44-76	ut (alphab)						oru in it it is	
9									
10									
11					100				
12									

					F.O. Gipeal	Fuel Oil	The state of	Aubjenting	2	
	% CO <sub>2</sub>	% O <sub>2</sub>		Atom Air or Steam Press.	0:		Steom Press.	Steem Flow	Steam Temp.	Feed Wo Temp.
Ti	10A	62	38	13.5	9,6	1850 F.	47#	186°F		155°F
2	11.6	5,3	384	16,0	21,9	202°F	49*	8705		155'P
3	11.8	5,0	37#	19.0	31,5	206°F	43*	1880 F		180°F
1	11.9	5.0	37#	20,5	40,1	222°F	46#	88°F		200'F
5	12,4	42	37	21.5	45,4	2310F	45#	88°F		205°F
6	12.1	3.3	37	22,5	53, 8	237°F	46#	88°F		205°
7	136	27	37#	23,0	57.9	2380F	44#	8800	E STATE OF BUT	200°F
8	13,6	2,6	37#	23,5	59.	229'F	38*	88°F		195°F
9 1	3.7_	2,5	37#	24.0	601	2450=	46#	890F		190°P
10	13/9	2,3	36.5#	24,0		249	47#	8901		180°F
11:	13.6	2,6	36.5	24.0	60.5	23/	340	890F		180°P
12	13.7	25	36,5	24.0	0/1	239	37#			175°F

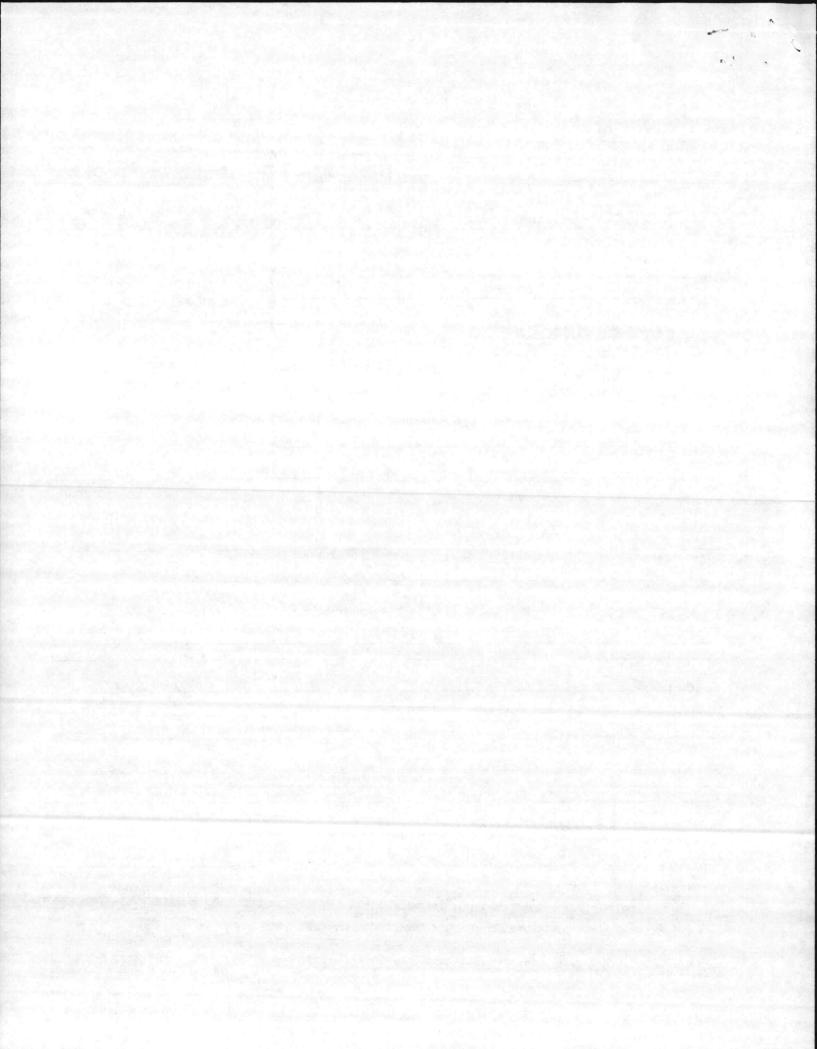
CAMPLejune BA-106 Contenct No. 7893 CB101-200, un. +L-8061/ 8-20-86 #2F.O.

Comments, etc.

Field Representative



INSPECTION REPO	RT-BOILERS		DATE OF INSPECTIO	ON .
Supersedes NAVDOCI S/N 0105-LF-004-00	KS 2544		24 JUNE	29 AUG. 1986
0103 21 001 00		TYPE OF INSPECTION		and the state of the state of
		A EXTERNAL B	WITH PRESSURE TE	ST C OPERA-
	ANDING GENERAL CAMP LEJEUNE, NC			SUED YES N
2 70			EXPIRES 24	SUNE 1487
	CENGCOM DLK, VA		/	
NON	JLK, VA		Thomas NAVY OR NAT	L'Larier
	BOILER DATA		NAVY OR NAT	IONAL BOARD NO.
MANUFACTURER			16. REASON FOR NOT	239
CLEAVE PROPERTY NO.	R BROOKS S. MFG. SERIAL NO. 6.			
PROPERTY NO.	5. MFG. SERIAL NO. 6.	MFG. MODEL NO.		
BUILDING NO.	C-806/1 N.	3. 61798		
	/	CAPACITY		
34-10(e FUEL (Check)	11. PRESSURE	900 LB/HR		
	DESIGNED OPE	RATING TEST		
	OIL GAS 150 pei 5	O pai 225 pai		
FEED WATER TREA	TMENT 13. TYPE			
SATISFACTO	TUBE	TUBE C. I.		
13.5	CO <sub>2</sub> 2.7 * EXCESS O <sub>2</sub>	AFTER BOILER 245	F : AFTER HEA	T TRAP
		SAFETY DEVICES		
MANUFACTURER		SAFETY VALVES	E 23. PSI SETTING	
L. ALL		2 - 2"		24. CONDITION
AUDRIE	STEAM	A PRESSURE GAUGE	165-170	SHT.
MANUFACTURER	37EA	26. CORRECTIONS		
CLEAVER REASON IF NOT	BROOKS	WATER LEG CONS	TANTpei; O	TH ERpsi
		DING COURSELLY		•
ITEM	IN SERVICE	RING EQUIPMENT	ALTERNAT	E
MANUFACTURER	CLANER BROOKS			
TYPE	NOWLE - AIR A	TOM.		
FUEL GRADE	#2	ectivity period		
INSPECTOR'S COM	MENTS	A	w dil nd	´a ->
NEW BO	LEA INSTALLED UN		90 87-18,	/_5
BOLEN D	WILL RETAIN SAME	PROPERTY N	10. AS OCH	Boiler.
COPY OF INS	PECTOR'S REPORT SPECIAL COMMENTS	all t	oval 1/1	
		( )	1 4/2/8/JE	Y DIRECTION
		*U.S. GOV	ERNMENT PRINTING	OFFICE: 1984-505-909



89443	MEGRS. MODEL NO.	MANUFACTURER		DATE OF SHEET
TYPE OF SUPERHEATER  NAME OF SUPERHEATER  TEMPERATURE AT SUPERHEATE  NORMAL FEEDWATER TEMPERATE  Company of the superheater services of the su	WATER WALL	PRESSURE (psig)  DESIGN MANUAL  AIR HEATER	EXPORT  ELEC. POWER GENERATION  LAID UP - WET  LAID UP - DRY	DATE BUILT  1984  DATE INSTALLED  JULY 1986  BOILER  TYPE  C.I.  WATER TUBE  PRODUCES  STEAM  LOW TEMP. WATER  HIGH TEMP. WATER  HIGH TEMP. WATER
FUEL	FUEL & FIRING EQUITOR  COAL  ANTHRACITE  BITUMINOUS  GAS  NATURAL  MANUFACTURED	PMENT IN SERVICE		FIRING EQUIPMENT  ERCIAL 1, 2, 4, 5, 6  SPECIAL
FIRING EQUIPMENT	COAL-HAND FIRED  COAL - STOKER  UNDERFEED - MULTIPLE RETORT  UNDERFEED - SINGLE RETORT  SPREADER - DUMP GRATE  SPREADER - VIBRATING GRATE  SPREADER - TRAVELING GRATE  CHAIN GRATE  GAS	COAL - PULYERIZER  ATTRITION  BALL & RACE  BOWL MILL  TUBULAR  OIL BURNERS  MECHANICAL  STEAM ATOMIZED	COL-HAND FIRED  COAL - STOKER  UNDERFEED - MULTIPLE RETORT  UNDERFEED - SINGLE RETORT  SPREADER - DUMP GRATE  SPREADER - VIBRATING GRATE  SPREADER - TRAVELING GRATE  CHAIN GRATE  GAS	COAL - PULVERIZER  ATTRITION  BALL & RACE  BOWL MILL  TUBULAR  OIL BURNERS  MECHANICAL  STEAM ATOMIZED

BOILER 65 MCBCL

FITTING	NUMBER	SIZE	MANUFACTURER	TYPE	SETTING	RANGE	PRESSURE CLASS
SAFETY VALVES	2	24	KUNKLE - 6021		65-70		
STEAM OUTLET VALVES	1	6"	ROCKWELL EDWARD	MON-RETURN ANGLE			300
BLOW-OFF VALVES	2	1/2	EVERLASTING	QUICK ACTING	4.		250
FEEDWATER VALVES	2	2"	MILWAUKEE	GIOBE	er kaj t		366
WATER COLUMN			MEDONNEZLEMILLER				150
FEEDWATER REGULATOR	1		MEDONNEL & miller	#157			
WATER GAGES							
STEAM GAGES	)	6 11	CLEAVER BROOKS			0-200	
SOOT BLOWERS	NIA		N/A				
FUSIBLE PLUGS	NIA						

NATL BD. # 61798

CONTROL - FIREYE

SAFETY VALUE - SET 65 = 4944 LB/HR, SET 70 = 5045 LB/HR.

MAX FIRING RATE 60 GPH #2 OIL.

RECORD SHEET - BOILERS 9-11014/40 (9-68) Supersedes NAVDOCKS 105-003-7010

Camp Lejeune

NUMBER		MANUEACTURED		the state of the last of the l		
	0.22	MANUFACTURER	TYPE	SETTING	RANGE	PRESSURE CLASS
Military and the second			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
		第二进制 1 · 1 · 1 · 1 · 1 · 1 · 1 · 1 · 1 · 1				
			21.01			
				•		
				Manager 1		
	9936		1			
	The second secon					
	* * . * .					
						2 7 Y 8 L 8 19 11
				76 000 000		
				782		
	47.0				Section 1987	
						- F. P. P. W.
			The state of the s			
	NUMBER	NUMBER SIZE	NUMBER SIZE MANUFACTURER	NOMBER SIZE MANUFACTURER TYPE	NUMBER SIZE MANUFACTURER TYPE SETTING	TYPE SETTING RAMGE

PLANT

L-9072

INIT	L-80611		A.	7	
	8501819	 _			-

MODEL CB 200-150# Stm psi PART NO. 524-1209 .

FORM P-2 MA	ANUFACTURERS'	DATA	REPORT	FOR	ALL	TYPES	OF	BOILERS	EXCEPT	WATERTUBE
	As Re	quired	by the Pro	visions	of the	e ASME	Cod	e Rules		

1. Manufactured ar	nd Cartified L		leaver	Brook	Division	of Agua Char	n Inc. Mil.		EBANON
1. Manufactured a	na Certified b	v	reuver-			dress of manufac		dukee, wisc	onsin
2. Manufactured for	Camp	Le	Jeun	e -	Jackson	nville, No	orth Car	olina	
	Camr		Town			ddress of purcha		Latita FIZ	
3. Location of Instal	lation Camp	) re	Jeun	e -				olina	
						ame and address			
4. Type Inte	rnally Fired		Boiler No		89443		N/A	524	-1209
								(Draw	ing No.)
(	51798			Year E	Built	19 86			
0	Nat'l. Board No.	.)							
5. The chemical and									
PRESSURE VES	SSEL CODE.	The	design,	constru	ction, and	workmanship	conform to	ASME Rule	s, Section
19	83	and Ad	idenda to		SUMMER,	1985 .			
Remarks: Manufac		Data Re	orts pro	erly ide	ntified and si	aned by Commis	sinned Inspects	ere have been fo	uniched f
following items of					NONE	June of Communication	sioned mapeer	ns mave been m	armsned r
			(Na	me of p	art, item num	ber, mfgr's name	and identifyin	g stamp)	
. Boiler Shells or Dr	ums: No	1	Dia	60'	1 Len	168"	Dia		
									ngtn
. Shell Plates	SA !	515-	70.	3/	<b>'8"</b>	cification No. &			
	(For	each Sh	ell or Dru	m state	: Material Spe	cification No. &	grade, nominal	thickness)	
. Longitudinal Joint	(s) Weld	ded	1.53	ioL	nt Efficiency	90%			
	(Sear	niess, W	elded)				(As compared	to Seamless)	
. Heads	NONE	Ξ							
		erial Spe	cification	No.; TI	hickness-Flat	, Dished, Ellipso	idal-Radius of	Dish)	
Girth Joint(s)	Welded		No	. of She	II Courses		2		
	(Seamless, W	elded)							
. Tube Sheet <u>SA</u>	285-C,	3"			Tube Hol	es	2.525"		
Children .	(Mat'l Spec.,	Grade,	Thickness	)			(Di	1.)	
							St	raight	
Boiler Tubes: No				(Mi	t'l. Spec., Gr.	ade)	(S	traight or Bent	:)
Dia. 2-½"	Len	gth	168	-날"	Gauge	.105"			
	(If various, give	max. &	min.)			(or thickness	)		
Furnace No	l Size 2	4" C	.D.,	noth es	ch sessio PL	24" CORR	144-1	. 168-	1,"
									4
Туре	Combina	tion	- P.	lain	and Co	rrugated			
AIN SA 53-B	.500"	(Plain, A	damson,	Ring Re	inforced, Cor	rugated, Combin	ed or Staved)		
						Seamless		irth) .	
(Mat'l Spec	., Grade, Thickr	ness)	Sean	is. Type	A STATE OF THE STA		amiess, Welded		
Staybolts: No.	NONE Si			N/A					
		ze			(Diam., Mat'l.	Spec. Grade Siz	e Telitale Net	Area)	
Pitch ]	N/A	Max. Al	VP I	N/A		psi.			
(Hor. an	nd Vert.)		- Catali		Maria Street	_ psi.			
Stays or Braces									
	T		T No			T	1		
	Material		No.	Max.	Total	Fig. PFT-32	Dist. Tubes	Area to be	Max. A.W.P.
	Spec. No.	Type	Size	Pitch	Net Area	L/1	to Shell	Stayed	psi.
Location	SA675-60	Diag	*	7	5.0264	1.09	16-3	343	154
	, UU	Diag	*	7	5.0264	1.09	16-3	343	154
a) F.H. above tubes			1		The same	1	10-2	100	
a) F.H. above tubes b) R.H. above tubes		Tring							
Location  a) F.H. above tubes b) R.H. above tubes c) F.H. below tubes d) R.H. below tubes	SA675-60				100		79		
a) F.H. above tubes b) R.H. above tubes c) F.H. below tubes d) R.H. below tubes	SA675-60 N/A N/A N/A					*8 @ 1"			
a) F.H. above tubes b) R.H. above tubes c) F.H. below tubes	SA675-60 N/A N/A	77779				*8 @ 1"			

Threaded pipe - SA 106-B, 1" & 2" Sch 80, M.A.W.P. 150# PSI

Other pressure piping installed by contractor.

(Mat'l. Spec. Grade Size Material Thickness Man AMP)

# Form P-2 (Back)

17. Openings. (a) Steam			(D			
(c) Blow						
	off 2 @ 1-13"	NPT Botto	om CL (d)	Feed 2 @	2" NPT (R &	L Side)
	(No Size	. Type and Loc	ation)	(1	No., Size, Type, and	Location)
(e) Mant	oles: No	l	small" x	15" Location	Shell -	Ring
(e) Mann						
(f) Head	holes No.		3-4"	X 4-½" Location	Shell	
No Co	nnections to Ite	m 17	_ Size	Location		
		N. N.	I/A			
18. Fusible Plug (if used	d)		(No Diem	Location, Mfrs. Star	nal	
	4	Le	~~		F	
19. Boiler Supports: No	•	Туре	/C-ddla- 1 1	Attachmer	ntn	pr Welded)
20. Max. AWP	150	_psi Based On _	FG-2	He	ating Surface	1000 sq f
	225#		NI/N	i/or Formula)		(Total)
21. Shop Hydrostatic Te	est	psig	·	kw.		
Particular and Company of Street, or			(Electric	Boilers)		
					0	
			CATE OF CO		Kenny	CK. Carrol
We certify the statemen					SAMI JET.	R. CARROLL
Date March 26,			of Aqua-Ch	em, Inc.		
Our Certificate of Aut	harization No	10905		o use the (A) or (S)		od Representative) Symbol expire
Tomas 3.5	norization No			o use the (A) or (S)		Symbol expire
January 15	19 89	<del></del> •				
		CERTIFICA	TE OF SUO	INSPECTION		
I, the undersigned, hole Province ofP	ennsylvania			ployed by The Har		
	rtford, Conn.					
				ave inspected parts		
			And the second s			
		21	and	have examined Manu	ufacturer's Partial D	ata Reports for iten
and state that, to the b sections of the ASME B	NONE pest of my knowled OILER AND PRES	dge and belief, t	he manufacture	r has constructed thi	s boiler in accordance	e with the applicabl
and state that, to the besections of the ASME B By signing this certific described in this Manuf personal injury or proper	NONE  Dest of my knowled  OILER AND PRES  tate neither the Instacturer's Data Rep  erty damage or a los	dge and belief, t SSURE VESSEL spector nor his ort. Furthermor	he manufactured CODE. employer makes e, neither the In	r has constructed this sany warranty, expospector nor his employee	s boiler in accordance ressed or implied, copyer shall be liable in	ce with the applicabl
and state that, to the besections of the ASME B By signing this certific described in this Manuf personal injury or property of the state of the sta	NONE  Dest of my knowled  COILER AND PRES  Cate neither the Instacturer's Data Rep  erty damage or a los  3,1986	dge and belief, to SSURE VESSEL spector nor his sort. Furthermores of any kind ar	he manufactured CODE. employer maked e, neither the Indising from or con	r has constructed this any warranty, exp spector nor his emplonected with this ins	ressed or implied, o over shall be liable in pection.	ce with the applicable concerning the boile in any manner for an
and state that, to the besections of the ASME Best signing this certific described in this Manuf personal injury or property of the Capacitan State of the Capac	NONE  Dest of my knowled  COILER AND PRES  Late neither the Instacturer's Data Rep  Erty damage or a los  3,1986  L. 2000	dge and belief, to SSURE VESSEL spector nor his sort. Furthermores of any kind ar	he manufactured CODE. employer maked e, neither the Indising from or con	r has constructed this any warranty, expospector nor his employmented with this ins	ressed or implied, or over shall be liable in pection.  PA 2309	concerning the boile
and state that, to the besections of the ASME Best signing this certific described in this Manuf personal injury or property of the Communication of the Com	NONE  Dest of my knowled  COILER AND PRES  Cate neither the Instacturer's Data Rep  erty damage or a los  3,1986	dge and belief, to SSURE VESSEL spector nor his sort. Furthermores of any kind ar	he manufactured CODE. employer maked e, neither the Indising from or con	r has constructed this any warranty, expospector nor his employmented with this ins	ressed or implied, o over shall be liable in pection.	ce with the applicab concerning the boild n any manner for an
and state that, to the besections of the ASME B By signing this certific described in this Manuf personal injury or proper Date Upul	NONE Dest of my knowled COILER AND PRES State neither the Instituter's Data Rep erty damage or a los 3, 1986 L. 2000	dge and belief, to SSURE VESSEL spector nor his cort. Furthermores of any kind are CERTIFIC	he manufacturer CODE. employer make: re, neither the In ising from or contommissions	r has constructed this any warranty, exposector nor his employmented with this ins  NB 8 8 8 4  Nat'l Boar	ressed or implied, copyer shall be liable in pection.  PA 2309 d, State, Province an	concerning the boile on any manner for an
and state that, to the besections of the ASME Besigning this certific described in this Manufersonal injury or property of the ASME Besides of the	DONE DOST OF THE PROPERTY OF T	dge and belief, to SSURE VESSEL spector nor his cort. Furthermores of any kind are CERTIFIC arts of this boile	he manufacturer CODE. employer make: re, neither the In ising from or columnissions  ATE OF COI er conforms with	r has constructed this any warranty, exposed or nor his employmented with this ins  NB 8 8 8 4  Nat'l Board  MPLIANCE  the requirements of	ressed or implied, cover shall be liable in pection.  PA 2309 d, State, Province an	concerning the boile on any manner for an
and state that, to the besections of the ASME Besigning this certific described in this Manufersonal injury or property of the ASME Besides of the	DONE DOST OF THE PROPERTY OF T	dge and belief, to SSURE VESSEL spector nor his cort. Furthermores of any kind are CERTIFIC arts of this boile	he manufacturer CODE. employer make: re, neither the In ising from or columnissions  ATE OF COI er conforms with	r has constructed this any warranty, exposed or nor his employmented with this ins  NB 8 8 8 4  Nat'l Board  MPLIANCE  the requirements of	ressed or implied, copyer shall be liable in pection.  PA 2309 d, State, Province an SECTION I of the A	concerning the boile on any manner for an
and state that, to the besections of the ASME BBy signing this certific described in this Manufpersonal injury or proper Date Spanish.  We certify that the field PRESSURE VESSEL Contegrate	NONE  Dest of my knowled  COILER AND PRES  State neither the Instacturer's Data Rep  erty damage or a los  3, 1986  L. 2000  Inspector  d assembly of all pa	dge and belief, to SSURE VESSEL spector nor his ort. Furthermores of any kind are CERTIFIC arts of this boile SignedSigned	he manufacturer CODE. employer make: re, neither the Inising from or conommissions  ATE OF COI er conforms with	r has constructed this any warranty, exp spector nor his emplonected with this ins  NB 8 8 8 4  Nat'l Boar  MPLIANCE the requirements of	ressed or implied, oper shall be liable in pection.  PA 2309 d, State, Province and SECTION I of the A	concerning the boile any manner for an d No.
and state that, to the besections of the ASME Besections of Authors and the ASME Besections of the ASME Besect	DONE DOST OF THE PROPERTY OF T	dge and belief, to SSURE VESSEL spector nor his cort. Furthermores of any kind are CERTIFIC arts of this boile	he manufacturer CODE. employer make: re, neither the Inising from or conommissions  ATE OF COI er conforms with	r has constructed this any warranty, exp spector nor his emplonected with this ins  NB 8 8 8 4  Nat'l Boar  MPLIANCE the requirements of	ressed or implied, oper shall be liable in pection.  PA 2309 d, State, Province and SECTION I of the A	concerning the boile any manner for an d No.
and state that, to the besections of the ASME Besections of the Asmediate Asmediate Inches of Authors of the Asmediate Inches of the Inches of	NONE  Dest of my knowled  COILER AND PRES  State neither the Instacturer's Data Rep  erty damage or a los  3, 1986  L. 2000  Inspector  d assembly of all pa	dge and belief, to SSURE VESSEL spector nor his cort. Furthermores of any kind are CERTIFIC arts of this boile	he manufacturer CODE. employer make: re, neither the Inising from or conommissions  ATE OF COI er conforms with	r has constructed this any warranty, exp spector nor his emplonected with this ins  NB 8 8 8 4  Nat'l Boar  MPLIANCE the requirements of	ressed or implied, oper shall be liable in pection.  PA 2309 d, State, Province and SECTION I of the A	concerning the boild any manner for an d No.
and state that, to the besections of the ASME Besections of the Asmediate Asmediate Inches of Authors of the Asmediate Inches of the Inches of	DONE Dest of my knowled DOLER AND PRES State neither the Ins facturer's Data Rep erty damage or a los 3, 1986 L. 2000 Inspector  d assembly of all page DODE.  19	dge and belief, to SSURE VESSEL spector nor his port. Furthermores of any kind are CERTIFIC arts of this boile	he manufacturer CODE. employer make: re, neither the Inising from or contommissions  ATE OF COI er conforms with	r has constructed this any warranty, exposed or nor his employmented with this ins  NB 8 8 9 9  Nat'l Board  MPLIANCE  the requirements of embler)  use the (A) or (S)	ressed or implied, cover shall be liable in pection.  PA 2309 d, State, Province an SECTION I of the A	concerning the boild any manner for an d No.
and state that, to the besections of the ASME By signing this certific described in this Manuf personal injury or proper Date Source Source Source Onte One Certify that the field PRESSURE VESSEL CODAte Our Certificate of Authors	DONE Doest of my knowled DOILER AND PRES State neither the Ins facturer's Data Rep erty damage or a los 3, 1986 L. 2000 Inspector  d assembly of all pa DODE.  DOTIZATION NO. 19  CERTI	dge and belief, to SSURE VESSEL spector nor his cort. Furthermores of any kind are CERTIFIC arts of this boileSigned	he manufacturer CODE. employer make: re, neither the Inising from or contourner commissions ATE OF COI er conforms with  (Assetted	r has constructed this any warranty, exposed or nor his employmented with this ins  NB & B & B & Mat'l Board  Nat'l Board  MPLIANCE the requirements of the requirements of the (A) or (S)	ressed or implied, cover shall be liable in pection.  PA 2309 d, State, Province an SECTION I of the A	ce with the applicable concerning the boild an any manner for an d No.  ASME BOILER AND DESCRIPTION OF THE SYMBOL Expire
and state that, to the besections of the ASME Besections of the Asmed Section 1997.  Note that the field of Authors of Authors of Authors of Authors of Authors of the Authors of Autho	DONE Dest of my knowled DOLER AND PRES Sate neither the Ins facturer's Data Rep erty damage or a los 3, 1986 L. 2000 LINSPECTOR  DODE.  CERTI ing a valid commiss	dge and belief, to SSURE VESSEL spector nor his port. Furthermores of any kind are CERTIFIC arts of this boile Signed	he manufacturer CODE. employer make: re, neither the Inising from or contourner commissions  ATE OF COI er conforms with  (Assetted ASSE	r has constructed this any warranty, exp spector nor his employmented with this ins  NB 8 8 9 9 Nat'l Board  Nat'l Board  MPLIANCE the requirements of embler) use the (A) or (S)	ressed or implied, cover shall be liable in pection.  PA 2309 d, State, Province an SECTION I of the A	concerning the boild an any manner for an d No.  ASME BOILER AND DESCRIPTION OF SYMBOL Expire and/or the State of the Stat
and state that, to the besections of the ASME	DONE Dest of my knowled DOLLER AND PRES Sate neither the Ins facturer's Data Rep erty damage or a los 3, 1986 2, 2062.2. Inspector  d assembly of all produce DODE.  Orization No 19  CERTI ing a valid commiss	SURE VESSEL Spector nor his sort. Furthermor ss of any kind ar  CERTIFIC arts of this boile Signed FICATE OF sion issued by th	he manufacturer CODE. employer make: e, neither the In ising from or col commissions  ATE OF COI er conforms with  (Asset	r has constructed this any warranty, exp spector nor his employmented with this ins  NB 8 8 9 9 Nat'l Board  MPLIANCE the requirements of use the (A) or (S)	ressed or implied, cover shall be liable in pection.  PA 2309 d, State, Prevince an SECTION I of the ABY (Replacement of Section of	concerning the boild an any manner for an d No.  ASME BOILER AND DESCRIPTION OF THE SYMBOL Expire and/or the State of the
and state that, to the besections of the ASME By signing this certific described in this Manual personal injury or proper Date Date Date Date Date Date Date Date	DONE Dest of my knowled DOLLER AND PRES Sate neither the Ins facturer's Data Rep erty damage or a los 3, 1986 2, 2062.2. Inspector  d assembly of all produce DODE.  Orization No 19  CERTI ing a valid commission	SURE VESSEL Spector nor his sort. Furthermor ss of any kind ar  CERTIFIC arts of this boile Signed FICATE OF sion issued by th	he manufacturer CODE. employer make: e, neither the In ising from or col commissions  ATE OF COI er conforms with  (Asset	r has constructed this any warranty, exp spector nor his employmented with this ins  NB 8 8 4  Nat'l Boar  MPLIANCE the requirements of use the (A) or (S)	ressed or implied, cover shall be liable in pection.  PA 2309 d, State, Prevince an SECTION I of the ABY (Replacement of Section of	concerning the boile on any manner for an d No.  ASME BOILER AND DESCRIPTION OF THE SYMBOL Expire and/or the State of the
and state that, to the besections of the ASME By signing this certific described in this Manual personal injury or proper Date Date Date Date Date Date Date Date	post of my knowled on the local post of my knowled on the local post of my knowled on the local post of the local post o	SURE VESSEL Spector nor his sort. Furthermor ss of any kind ar  CERTIFIC arts of this boile Signed Signed FICATE OF sion issued by th and employed ufacturer's Data	he manufacturer CODE. employer make: e, neither the In ising from or color commissions  ATE OF COI er conforms with  (Asset to  FIELD ASSE te National Board d by  Report with the	r has constructed this is any warranty, exp spector nor his employment of the spector nor his employment of the spector nor his employment of the requirements of the requirements of use the (A) or (S)	ressed or implied, of over shall be liable in pection.  PA 2309  d, State, Previous and SECTION I of the A  By  (Replace of State of Shop in certificate of shop in section of shop in s	concerning the boile on any manner for an any manner for any manner f
and state that, to the besections of the ASME By signing this certific described in this Manual personal injury or proper Date Date Date Date Date Date Date Date	post of my knowled on the local post of my knowled on the local post of my knowled on the local post of the local post o	SURE VESSEL Spector nor his sort. Furthermor ss of any kind ar  CERTIFIC arts of this boile Signed Signed FICATE OF sion issued by th and employed ufacturer's Data	he manufacturer CODE. employer make: e, neither the In ising from or color commissions  ATE OF COI er conforms with  (Asset to  FIELD ASSE te National Board d by  Report with the	r has constructed this is any warranty, exp spector nor his employment of the spector nor his employment of the spector nor his employment of the requirements of the requirements of use the (A) or (S)	ressed or implied, of over shall be liable in pection.  PA 2309  d, State, Previous and SECTION I of the A  By  (Replace of State of Shop in certificate of shop in section of shop in s	concerning the boild an any manner for any manne
and state that, to the besections of the ASME By signing this certific described in this Manuf personal injury or proper Date Source Source Out Certificate of Authors of the undersigned, holding ave compared the state lems and property of the certificate of the state lems of the Aspected by me and the sections of the certificate of the state lems of the certificate of the certificate of the state lems of the certificate of the	DONE DOST OF MY KNOWLED DOST OF MY KNOWLED DOST OF MY KNOWLED DOLL OF	SURE VESSEL spector nor his sort. Furthermor sof any kind ar  CERTIFIC arts of this boile Signed FICATE OF sion issued by th and employed ufacturer's Data	he manufacturer CODE. employer make: re, neither the Inising from or contourner commissions  ATE OF COI er conforms with  (Assetted to	r has constructed this any warranty, exposed or nor his employmented with this ins  NB 8 8 9 4  Nat'l Boar  MPLIANCE  the requirements of embler)  use the (A) or (S)	ressed or implied, or over shall be liable in pection.  PA 2309  d, State, Prevince and SECTION I of the A  By  (Replace of State of Stop in certificate of Stop in sessembler has construints.)	concerning the boild and many manner for an any manner for any manner fo
and state that, to the besections of the ASME By signing this certific described in this Manufipersonal injury or proper Date Source Source Source Our Certificate of Authorize of Source Source of Source Source of Source Source Source of Source Sou	post of my knowled to ILER AND PRES at eneither the Instructor's Data Reperty damage or a los 2, 1986  L. 2000 L. Inspector  dissembly of all property damage or all property of all property damage or all property damage or all property damage.  CERTI ing a valid commission of the best of my with the applicable of the best of my with the applicable of the property damage.	SURE VESSEL spector nor his sort. Furthermor s of any kind ar  CERTIFIC arts of this boile Signed FICATE OF sion issued by th and employed ufacturer's Data or knowledge and esections of the	he manufacturer CODE. employer make: re, neither the Inising from or color commissions  ATE OF COI er conforms with  (Assette National Board d by Report with the belief the manu	r has constructed this any warranty, exposed or nor his employmented with this ins NB & & Y Nat'l Board Nat'l Board Nat'l Board Nat'l Board Nat'l Board NPLIANCE the requirements of the requirements of dof Boiler and Press the described boiler and not included in the facturer and/or the and AND PRESSURE V	ressed or implied, or over shall be liable in pection.  PA 2309  d, State, Prevince and SECTION I of the A  By  (Replace of State of Stop in certificate of Stop in sessembler has construints.)	concerning the boild and many manner for an any manner for any manner fo
and state that, to the besections of the ASME By signing this certific described in this Manufersonal injury or proper Date Source Sour	post of my knowled to a hydrostatic test	SURE VESSEL spector nor his sort. Furthermor sof any kind ar  CERTIFIC arts of this boile  Signed  FICATE OF sion issued by th and employed ufacturer's Data of knowledge and esections of the tof	he manufacturer CODE. employer make: e, neither the In ising from or col commissions  ATE OF COI er conforms with  (Asset to  FIELD ASSE to National Board d by Report with the belief the manu ASME BOILER	r has constructed this any warranty, exp spector nor his employmented with this ins NB & & Y Nat'l Board NAT'l Boa	ressed or implied, or over shall be liable in pection.  PA 2309  d, State, Province an SECTION I of the A  By  (Replace of State of Shop in the Security of Securi	concerning the boild and any manner for an any manner for any manner
and state that, to the besections of the ASME By signing this certific described in this Manuf personal injury or proper Date Sparie Sp	post of my knowled to a hydrostatic test te neither the Inspector	CERTIFIC arts of this boile Signed  FICATE OF sion issued by the and employed facturer's Data or knowledge and exections of the cof	he manufacturer CODE. employer make: re, neither the In ising from or col commissions  ATE OF COI er conforms with  (Asset to  FIELD ASSE se National Board d by Report with the belief the manu ASME BOILER	r has constructed this is any warranty, exposed or nor his employmented with this ins NB & & Y Nat'l Board NAT'l B	ressed or implied, of over shall be liable in pection.  PA 2309 d, State, Prevince and SECTION I of the ABY  ION  ION  Ure Vessel Inspector  of of state that the particertificate of shop in essembler has constructed assets or implied, constructed assets or implied assets or implied, constructed assets or implied assets o	concerning the boiler any manner for an any manner for any manner
and state that, to the besections of the ASME By signing this certific described in this Manufacture of Date Date Date Date Date Date Date Date	post of my knowled to a ssembly of all property damage or a los of assembly of all property damage or a los of assembly of all property damage or a los of assembly of all property damage or a los of assembly of all property damage or a los of assembly of all property damage or a los of assembly of all property damage.  CERTI ing a valid commission of the best of my with the applicable to a hydrostatic test to the best of my with the applicable to a hydrostatic test to neither the Inspiriturer's Data Reposition of the property of the pro	CERTIFIC arts of this boile Signed	he manufacturer CODE. employer make: e, neither the In ising from or col commissions  ATE OF COI er conforms with  (Asset to  FIELD ASSE te National Board d by Report with the belief the manu ASME BOILER  mployer makes , neither the Insi	r has constructed this is any warranty, exposed or nor his employmented with this ins NB & & Y Nat'l Board MPLIANCE the requirements of use the (A) or (S)	ressed or implied, cover shall be liable in pection.  PA 2309 d, State, Prevince and SECTION I of the ABY  ION  Ure Vessel Inspector of the Above that the participate of shop in assembler has constructed by the sessed or implied, cover shall be liable in the sessed or implied.	concerning the boiler any manner for any manner for any dollar a
and state that, to the besections of the ASME By signing this certific described in this Manufipersonal injury or proper Date Sparie Sp	post of my knowled to the lost of my knowled to ILER AND PREState neither the Instacturer's Data Reperty damage or a lost of my many at the best of my with the applicable to a hydrostatic test te neither the Inspector of the many many many many many many many many	CERTIFIC arts of this boile Signed Si	he manufacturer CODE. employer make: e, neither the In ising from or col commissions  ATE OF COI er conforms with  (Asset to  FIELD ASSE te National Board d by Report with the belief the manu ASME BOILER  mployer makes , neither the Insi	r has constructed this is any warranty, exposed or nor his employmented with this ins NB & & Y Nat'l Board MPLIANCE the requirements of use the (A) or (S)	ressed or implied, cover shall be liable in pection.  PA 2309 d, State, Prevince and SECTION I of the ABY  ION  Ure Vessel Inspector of the Above that the participate of shop in assembler has constructed by the sessed or implied, cover shall be liable in the sessed or implied.	concerning the boiler any manner for any manner for any dollar a

# C MELDER OF WELDING CHEFFILE OUTAL RICHTION TESTS (See OW 201 Section IX ASME Bollet and Prassure Vestic S

Versellers Perry Shaw :	Check No Siz-	-: Nc(D)
the Dr. 185-16 TELLY DIIGH	Using WPS No (109 Rev U.	The state of the s
inf	apove welder is qualified for the following ranges.	
	Record Actual Values	
		Outlification Flange
Fruces	Used in Qualification SMAV	SYAY
	Menual	Tar usi
	िस्टिंग्सिंग्सिंग्सिंग्सिंग्सिंग्सिंग्सिंग्स	or at the state of the first
rain 1990 - The American Albania (1990) Marking Barandan Albania	11 , 11	11 to 12
	.432	t, <u>ice x .432</u>
9.41.4		
- Faret Diameter		2 7/8÷
Groc.s	6.625	2 7/67
H. T. 프로그램 경영() (프로그램 프로그램 트리트 레스트 레스트 프로그램 프로그램 프로그램 프로그램 프로그램 프로그램 프로그램 프로그램		
Filier Filier Metal (OW-404)		
- ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^	SFA 5.1	
Spec. No.	E-6010 & E7018	
F-Vc.	3 4	
(2) + 20 (2) 405)	r-c	All Positions
La a Fragresson (DV: 410	Vertical lp_	
45 T 1		
Leanties Characteristics (C/L<02)		
Corrent	DC	
Forerity	Market Market State of the Control o	ter and the second second
Guided Bend 7	Tert Results QV: 462.218, QV: 462 3(a), QV: 4	52.3(b)
Type and Fig. No.		Piesult
Face henc 1	Satisfactor Satisfactor	
Face Fend 2	Satisfactor	
Root hend 1	Satisfactor	
Root Bend 2	Satisfactor	3
[24] [10] [10] [25] [10] [25] [10] [10] [10] [10] [10] [10] [25] [25] [25] [25] [25] [25] [25] [25	prephic Test Results (QW-304 & QW-305)	
For ahernativ	e qualification of groove welds by radicate	phy
ed i greptici Fesults		
	Test Results (See QN 4624(8) QN 46241	0))
	ze of any creat or tearing or the speciment	
repture Test (Description of an or instant and si	(1985년) 12일 -	
		<u>`</u>
ength and Far Canon Dolotto L	-:-er	
ength and Par Centro Dolotto	-:-er	in or Concevity
ength and Par Canon Dolotto	-:-er	in or Concevity
ength and Far Cent of Dolotto Jord Rest—Fusion Colestance—Fusio Size (leg)	Times  If Convexity	in of Concevity
regressions = Section Construction	Company Laterated—Test No	in or Concevity
ength and Par Carbon Dalathic Construction are carbon that the statements in this record are of	Times  If Convexity	in or Concevity
ergor and factors for the construction	Company Laterated—Test No	in or Concevity
ength and Far Carbon Island  done Terr—Florer  done stande—Flore State (eg	Company Latoraton—Test No  price and that the test welds were prepared, we	in or Concevity
ergor and Per Certor Described and Section of the Construction of the Construction and the Construction are of the Construction.	Company Laterated—Test No	in or Concevity
ength and Far Carbon Island  issue Test—Fusion  processionse—Fusion Esselves	Company Latoraton—Test No  price and that the test welds were prepared, we	in or Concevity

1-23-87
HARRIS CONST CO.

SEAL WELD All TUBES IN 2 Nd PASS (46)

BA-186
# 65 BoilER

AVFAC 9-11014/41 Supersedes NAVDOCE					7 may-	19 116 198
N 0105-LF-004-000	00		TYPE OF INSPECTIO	ON	771111	19 DEC 198
			A INTERNAL EXTERNAL	A B X	INTERNAL & EXTER	ST C OPERATIONAL
I. FROM	BASE MAINT. O	FFICER		1	4.	
	CAMP LEJEUNE	N. C.		E	CERTIFICATE IS	
. то	NAVFACENG				S. BOILER INSPECTO	
	NORFOLK,	VA			Lesse Z	Sellen
	BOILER D	ATA			NAVEAC	TONAL BOARD NO.
YORK -	SHIPLEY					ISSUING CERTIFICATE
PROPERTY NO.	5. MFG. SERIAL NO.		MFG. MODEL NO.	-0		
SUILDING NO.	63-8242-H300	38 S	PH-188-6-972	09		
n-230	1963	1	500 LBS/	140		
FUEL (Check)	11. PRESSU	URE	,300 11337	///		
	DESIGNED	OPE	ERATING TEST			
	OIL GAS 150		50 pai 100	5 psi		
FEED WATER TREAT		13. TYPE	ER FIRE			
SATISFACTOR	UNSATISFACTORY	TUB	ER TUBE	C. I.		extra dilandi di Nella
EXPORT			18. COMBUSTION CO		Name)	
BOILER USE  EXPORT  COMBUSTION			FIREYE 20. FLUE GAS TEMP	ERATURE		
EXPORT COMBUSTION	- 6 CO <sub>2</sub>	EXCESS O	20. FLUE GAS TEMPI	ERATURE	Name)  *F : AFTER HEA	AT TRAP
EXPORT COMBUSTION	- * CO <sub>2</sub> * 1	EXCESS O	20. FLUE GAS TEMPI 20. FLUE GAS TEMPI 2 AFTER BOILER	ERATURE		AT TRAP
EXPORT COMBUSTION	CO <sub>2</sub> *	EXCESS O	20. FLUE GAS TEMPI 20. FLUE GAS TEMPI AFTER BOILER SAFETY DEVICES SAFETY VALVES	R AND SIZE		AT TRAP
EXPORT COMBUSTION 9, 0,		EXCESS O	20. FLUE GAS TEMPI 20. FLUE GAS TEMPI AFTER BOILER SAFETY DEVICES SAFETY VALVES	350	_•F : AFTER HEA	
EXPORT COMBUSTION 9-0, MANUFACTURER, CANSOLIE			SAFETY DEVICES SAFETY VALVES  22. NUMBE 22. NUMBE 23. OF THE PROPERTY OF THE P	R AND SIZE	F : AFTER HEA	24. CONDITION
EXPORT COMBUSTION  9-0  MANUFACTURER  CANSOLIE  MANUFACTURER	DATED		AFTER BOILER SAFETY DEVICES SAFETY VALVES 22. NUMBE 22. NUMBE 26. CORRECT	R AND SIZE	23. PSI SETTING	24. CONDITION
MANUFACTURER  MANUFACTURER  MANUFACTURER			AFTER BOILER SAFETY DEVICES SAFETY VALVES 22. NUMBE 22. NUMBE 26. CORRECT	R AND SIZE	23. PSI SETTING	24. CONDITION
MANUFACTURER  MANUFACTURER  MANUFACTURER	DATED		AFTER BOILER SAFETY DEVICES SAFETY VALVES 22. NUMBE 22. NUMBE 26. CORRECT	R AND SIZE	23. PSI SETTING	24. CONDITION
MANUFACTURER  MANUFACTURER	PATED  FAGE  FESTED	STEA	AFTER BOILER SAFETY DEVICES SAFETY VALVES 22. NUMBE 22. NUMBE 26. CORRECT	R AND SIZE	23. PSI SETTING 65-75	24. CONDITION  GOOD  OTHERpsi
EXPORT COMBUSTION  9-0  MANUFACTURER  CANSOLIE  MANUFACTURER	PATED  SAGE  TESTED  IN	STEA F SERVICE	SAFETY DEVICES SAFETY VALVES 22. NUMBE 2 - 2 M PRESSURE GAL 26. CORREC WATER L	R AND SIZE	23. PSI SETTING	24. CONDITION  G-OOD  OTHERpsi
EXPORTON  GONEUSTION  GONEUSTION  MANUFACTURER  CANSOLIE  MANUFACTURER  LIS (  REASON IF NOT 1	PATED  SAGE  TESTED  IN	STEA F SERVICE	SAFETY DEVICES SAFETY VALVES 22. NUMBE 2 - 2 M PRESSURE GAL 26. CORREC WATER L	R AND SIZE	23. PSI SETTING 65-75	24. CONDITION  G-OOD  OTHERpsi
MANUFACTURER  MEASON IF NOT THE	PATED  FAGE  FESTED	STEA F SERVICE	SAFETY DEVICES SAFETY VALVES 22. NUMBE 2 - 2 M PRESSURE GAL 26. CORREC WATER L	R AND SIZE	23. PSI SETTING 65-75	24. CONDITION  GOOD  OTHERpsi
MANUFACTURER  MANUFACTURER  MANUFACTURER  MEASON IF NOT THEM  MANUFACTURER  TYPE	PATED  SAGE  TESTED  IN	STEA F SERVICE	SAFETY DEVICES SAFETY VALVES 22. NUMBE 2 - 2 M PRESSURE GAL 26. CORREC WATER L	R AND SIZE	23. PSI SETTING 65-75	24. CONDITION  GOOD  OTHERpsi
MANUFACTURER  MANUFACTURER  MANUFACTURER  MANUFACTURER  ITEM  MANUFACTURER  TYPE  FUEL GRADE	PATED  SAGE  ESTED  IN  YORK SHIPL  NOZZIE SE  # 1	STEA F SERVICE	SAFETY DEVICES SAFETY VALVES 22. NUMBE 2 - 2 M PRESSURE GAL 26. CORREC WATER L	R AND SIZE	23. PSI SETTING 65-75	24. CONDITION GOOD OTHERpsi
MANUFACTURER  MANUFACTURER  MANUFACTURER  MANUFACTURER  ITEM  MANUFACTURER  TYPE  FUEL GRADE  INSPECTOR'S COM	PATED  SAGE  ESTED  IN  YORK SHIPL  NOZZIE SE  # 1	STEA F SERVICE	SAFETY DEVICES SAFETY VALVES 22. NUMBE 2 - 2 M PRESSURE GAL 26. CORREC WATER L	R AND SIZE	23. PSI SETTING 65-75	24. CONDITION GOOD OTHERpsi
MANUFACTURER  MANUFACTURER  MANUFACTURER  MANUFACTURER  ITEM  MANUFACTURER  TYPE  FUEL GRADE	PATED  SAGE  ESTED  IN  YORK SHIPL  NOZZIE SE  # 1	STEA F SERVICE	SAFETY DEVICES SAFETY VALVES 22. NUMBE 2 - 2 M PRESSURE GAL 26. CORREC WATER L	R AND SIZE	23. PSI SETTING 65-75	24. CONDITION  GOOD  OTHERpsi
EXPORT COMBUSTION  GOOD MANUFACTURER MANUFACTURER MANUFACTURER  ITEM MANUFACTURER  TYPE  FUEL GRADE INSPECTOR'S COM	PATED  SAGE  ESTED  IN  YORK SHIPL  NOZZIE SE  # 1	STEA F SERVICE	SAFETY DEVICES SAFETY VALVES 22. NUMBE 2 - 2 M PRESSURE GAL 26. CORREC WATER L	R AND SIZE	23. PSI SETTING 65-75	24. CONDITION  GOOD  OTHERpsi
EXPORT COMBUSTION  GOOD MANUFACTURER MANUFACTURER MANUFACTURER  ITEM MANUFACTURER  TYPE  FUEL GRADE INSPECTOR'S COM	PATED  SAGE  ESTED  IN  YORK SHIPL  NOZZIE SH  # 2  MENTS	STEA F SERVICE LEY ORAY	SAFETY DEVICES SAFETY VALVES  22. NUMBE 24. CORREC WATER L  SIRING EQUIPMENT	R AND SIZE  OF THE TOTAL STATE O	23. PSI SETTING 65-75	24. CONDITION GOOD OTHERpsi
EXPORT COMBUSTION  9-0  MANUFACTURER  CANSOLIF  MANUFACTURER  ITEM  MANUFACTURER  ITEM  MANUFACTURER  TYPE  FUEL GRADE  INSPECTOR'S COMP  OK  ATTACHMENT(S) (C	PATED  SAGE  ESTED  IN  YORK SHIPL  NOZZIE SH  # 2  MENTS	STEA F SERVICE	SAFETY DEVICES SAFETY VALVES 22. NUMBE 26. CORREC WATER L  FIRING EQUIPMENT	R AND SIZE  OF THE TOTAL STATE O	23. PSI SETTING 65-25  IT	24. CONDITION  GOOD  OTHERpsi

