INSPECTION REPORT-BOILERS
NAVFAC 9-11014/41 (3/67)
Supersedes NAVDOCKS 2544
S/N 0105-LF-004-0000

DATE OF INSPECTION: 3 JUNE - 14 JUNE 1985

TYPE OF INSPECTION: A ☐ INTERNAL & EXTERNAL B ☒ INTERNAL & EXTERNAL WITH PRESSURE TEST C ☒ OPERATIONAL

1. FROM: BASE MAINT. OFFICER
CAMP LEJEUNE, N. C.

2. TO: NAVFACENGCOM
NORFOLK, VA.

14. CERTIFICATE ISSUED ☒ YES ☐ NO
EXPIRES 3 JUNE 1986

15. BOILER INSPECTOR: Thomas L Lanier
NAVY OR NATIONAL BOARD NO: NAVFAC 239

16. REASON FOR NOT ISSUING CERTIFICATE:

BOILER DATA

3. MANUFACTURER: CLEAVER BROOKS

4. PROPERTY NO.	5. MFG. SERIAL NO.	6. MFG. MODEL NO.
2	L 68195	CB-600-350
7. BUILDING NO.	**8. YEAR BUILT**	**9. CAPACITY**
NH-160	1981	14,645,000 BTU/HR.

10. FUEL (Check): ☐ COAL ☒ OIL ☐ GAS

11. PRESSURE

DESIGNED	OPERATING	TEST
150 psi	125 psi	225 psi

12. FEED WATER TREATMENT: ☒ SATISFACTORY ☐ UNSATISFACTORY

13. TYPE: ☐ WATER TUBE ☒ FIRE TUBE ☐ C. I.

17. BOILER USE: HEATING

18. COMBUSTION CONTROL (Mfg. Name): CLEAVER BROOKS

19. COMBUSTION: 12.0 % CO_2 _____ % EXCESS O_2

20. FLUE GAS TEMPERATURE: AFTER BOILER 300 °F ; AFTER HEAT TRAP _____ °F

SAFETY DEVICES

SAFETY VALVES

21. MANUFACTURER	22. NUMBER AND SIZE	23. PSI SETTING	24. CONDITION
CONSOLIDATED	1-1½" 1-2"	140-145	NEW

STEAM PRESSURE GAUGE

25. MANUFACTURER: CLEAVER BROOKS

26. CORRECTIONS: WATER LEG CONSTANT _____ psi; OTHER _____ psi

27. REASON IF NOT TESTED:

FIRING EQUIPMENT

ITEM	IN SERVICE	ALTERNATE
28. MANUFACTURER	CLEAVER BROOKS	CLEAVER BROOKS
29. TYPE	NOZZLE - AIR ATOM	NOZZLE - AIR ATOM
30. FUEL GRADE	#6	#2

31. INSPECTOR'S COMMENTS:
W/S LIGHT COAT OF RED SCALE ON TUBES. (2) REPLACED REFRACTORY TILE IN FURNACE, (3) INSTALLED NEW SAFETY VALVES (CONSOLIDATED).

32. ATTACHMENT(S) (Check): ☐ COPY OF INSPECTOR'S REPORT ☐ SPECIAL COMMENTS

33. SIGNATURE: John L. Rowland BY DIRECTION

* U.S. GOVERNMENT PRINTING OFFICE: 1982 - 605 - 965

TL

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

DATE: 28 May 85

ACTIVITY: NAVAL HOSPITAL

BUILDING NO: NH-100 BOILER NO. _____

Based on the existing condition and present rate of deterioration, it is estimated that the boiler has a remaining life of

/ / 5 or more years / / ( ) years

The following corrective action is recommended:

Subj: Deaerator Tank, should be open up for cleaning and inspection every year. Boilers will have to be secured for this period of time or means provided to supply feed water to boilers. Also some way of rerouting condensateto another receiver or to waste drain.

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

DATE: 28 MAY 85

ACTIVITY: NAVAL HOSPITAL

BUILDING NO: NH-100 BOILER NO. _____

Based on the existing condition and present rate of deterioration, it is estimated that the boiler has a remaining life of

☐ 5 or more years ☐ ( ) years

The following corrective action is recommended:

SUBJ: DEAERATOR TANK, SHOULD BE OPEN UP FOR CLEANING AND INSPECTION EUERY YEAR. BOILERS WILL HAVE TO BE SECURED FOR THIS PERIOD OF TIME OR MEANS PROVIDED TO SUPPLY FEED WATER TO BOILERS ALSO SOME WAY OF REROUTING CONDENSATE TO ANOTHER RECEIVER OR TO WASTE DRAIN.

INSPECTION REPORT-BOILERS
NAVFAC 9-11014/41 (3/67)
Supersedes NAVDOCKS 2544
S/N 0105-LF-004-0000

DATE OF INSPECTION: 30 NOV 1982

TYPE OF INSPECTION: A ☐ INTERNAL & EXTERNAL B ☐ INTERNAL & EXTERNAL WITH PRESSURE TEST C ☒ OPERATIONAL

1. FROM: BASE MAINT. OFFICER, CAMP LEJEUNE, N. C.

2. TO: NAVFACENGCOM, NORFOLK, VA.

14. CERTIFICATE ISSUED ☐ YES ☒ NO

15. BOILER INSPECTOR: Thomas L Lanier
NAVY OR NATIONAL BOARD NO.: NAVFAC 239

16. REASON FOR NOT ISSUING CERTIFICATE: AS OF 22 FEB, 1983 - INTERNAL AND EXTERNAL WITH PRESSURE TEST HAS NOT BEEN RUN.

SAFETY VALVES NOT OPERATING IN PERMISSIBLE RANGE.

BOILER DATA

3. MANUFACTURER	4. PROPERTY NO.	5. MFG. SERIAL NO.	6. MFG. MODEL NO.
CLEAVER BROOKS	2	L-68195	CB 600-350

7. BUILDING NO.	8. YEAR BUILT	9. CAPACITY
H-100	1981	14645000 BTU/HR.

10. FUEL (Check): ☐ COAL ☒ OIL ☐ GAS

11. PRESSURE

DESIGNED	OPERATING	TEST
150 psi	125 psi	psi

12. FEED WATER TREATMENT: ☒ SATISFACTORY ☐ UNSATISFACTORY

13. TYPE: ☐ WATER TUBE ☒ FIRE TUBE ☐ C. I.

17. BOILER USE: HEATING

18. COMBUSTION CONTROL (Mfg. Name): CLEAVER BROOKS

19. COMBUSTION: 13.4 % CO_2 _____ % EXCESS O_2

20. FLUE GAS TEMPERATURE: AFTER BOILER 375 °F ; AFTER HEAT TRAP _____ °F

SAFETY DEVICES

SAFETY VALVES

21. MANUFACTURER	22. NUMBER AND SIZE	23. PSI SETTING	24. CONDITION
KUNKLE VALVE CO.	1-1½" 1-2"	150-150	NEW SEE COMMENTS

STEAM PRESSURE GAUGE

25. MANUFACTURER: CLEAVER BROOKS

26. CORRECTIONS: WATER LEG CONSTANT _____ psi; OTHER _____ psi

27. REASON IF NOT TESTED

FIRING EQUIPMENT

ITEM	IN SERVICE	ALTERNATE
28. MANUFACTURER	CLEAVER BROOKS	CLEAVER BROOKS
29. TYPE	NOZZLE SPRAY - AIR ATOM	NOZZLE SPRAY - AIR ATOM
30. FUEL GRADE	#6	#2

31. INSPECTOR'S COMMENTS

NEW BOILERS INSTALLED AT NEW HOSPITAL

32. ATTACHMENT(S) (Check): ☐ COPY OF INSPECTOR'S REPORT ☐ SPECIAL COMMENTS

33. SIGNATURE: R.M. Dillon
BY DIRECTION

★ U. S. GOVERNMENT PRINTING OFFICE: 1978-604-467

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

DATE: 1 March 1983

ACTIVITY: Marine Corps Base, Camp Lejeune, North Carolina

BUILDING NO: H-100 BOILER NO. 1 and 2

Based on the existing condition and present rate of deterioration, it is estimated that the boiler has a remaining life of

☐ **5 or more years** ☐ **( ) years**

The following corrective action is recommended:

Two new Cleaver Brooks Boilers, Model Numbers CB 600-350 were installed at the new Naval Regional Medical Center, Building Number H-100, Camp Lejeune, North Carolina in 1982. Operational and efficiency tests were run in November 1982 by Cleaver Brooks representative. The boilers are equipped with two (each) Kunkle Safety Valves which do not meet the requirements of the American Society Mechanical Engineering Code, Section I, page 72.

Boiler Number 1 - South S/V Set at 150 PSI - Front opens 146 PSI, Close 135 PSI; Back S/V Opens 144 PSI, Closes 124 PSI

Boiler Number 2 - North S/V Set at 150 PSI - Front S/V opens 150 PSI, Closes 133 PSI; Back S/V opens 145 PSI, Closes 135 PSI.

Internal inspection and hydrostatic test have never been run on boilers.

MFGRS. SERIAL NO.: L-68195

MFGRS. MODEL NO.: CB 600-350

MANUFACTURER: Cleaver Brooks

DATE OF SHEET: 1 March 1983

TYPE OF SUPERHEATER: None

TEMPERATURE AT SUPERHEATER OUTLET: ____ °F

NORMAL FEEDWATER TEMPERATURE: ____ °F

(See Reverse Side for Fittings)

FURNACE VOLUME: ____ CU. FT.

HEATING SURFACE (SQ. FT.)

BOILER 1750

WATER WALL ____

ECONOMIZER ____

SUPERHEATER ____

DRUMS

NO. 1

DIAMETER 78 IN.

LENGTH 16 FT. 9 IN.

- [ ] RIVETED
- [ ] FORGE WELDED
- [X] FUSION WELDED

OPERATION

- [X] AUTOMATIC
- [ ] SEMI-AUTOMATIC
- [ ] MANUAL

PRESSURE (psig)

____ DESIGN

150 MAWP

____ INSTALLED WP

AIR HEATER

- [X] NONE
- [ ] TUBULAR
- [ ] REGENERATIVE
- [ ] STEAM

USE

- [X] EXPORT
- [ ] ELEC. POWER GENERATION
- [ ] LAID UP - WET
- [ ] LAID UP - DRY

CAPACITY

____ HP

____ LB./HR

____ EDR

14645000 BTU/HR.

DATE BUILT: ____

DATE INSTALLED: 1982

BOILER

TYPE

- [ ] C.I.
- [ ] WATER TUBE
- [X] FIRE TUBE

DRAFT

- [ ] NATURAL
- [X] FORCED
- [ ] INDUCED

PRODUCES

- [X] STEAM
- [ ] LOW TEMP. WATER
- [ ] HIGH TEMP. WATER

CIRCULATION

- [X] NATURAL
- [ ] FORCED

FUEL

FUEL & FIRING EQUIPMENT IN SERVICE

COAL

- [ ] ANTHRACITE
- [ ] BITUMINOUS

OIL

- [X] COMMERCIAL 1, 2, 4, 5, 6
- [ ] NAVY
- [ ] OTHER ____

GAS

- [ ] NATURAL
- [ ] MANUFACTURED

ALTERNATE FUEL & FIRING EQUIPMENT

COAL

- [ ] ANTHRACITE
- [ ] BITUMINOUS

OIL

- [X] COMMERCIAL 1, 2, 4, 5, 6
- [ ] NAVY SPECIAL
- [ ] OTHER ____

GAS

- [ ] NATURAL
- [ ] MANUFACTURED

FIRING EQUIPMENT

FUEL & FIRING EQUIPMENT IN SERVICE

- [ ] COAL-HAND FIRED

COAL - STOKER

- [ ] UNDERFEED - MULTIPLE RETORT
- [ ] UNDERFEED - SINGLE RETORT
- [ ] SPREADER - DUMP GRATE
- [ ] SPREADER - VIBRATING GRATE
- [ ] SPREADER - TRAVELING GRATE
- [ ] CHAIN GRATE

GAS

- [ ] GAS RING
- [ ] VENTURI TYPE

COAL - PULVERIZER

- [ ] ATTRITION
- [ ] BALL & RACE
- [ ] BOWL MILL
- [ ] TUBULAR

OIL BURNERS

- [ ] MECHANICAL
- [X] STEAM ATOMIZED
- [X] AIR ATOMIZED
- [ ] ROTARY CUP

ALTERNATE FUEL & FIRING EQUIPMENT

- [ ] COL-HAND FIRED

COAL - STOKER

- [ ] UNDERFEED - MULTIPLE RETORT
- [ ] UNDERFEED - SINGLE RETORT
- [ ] SPREADER - DUMP GRATE
- [ ] SPREADER - VIBRATING GRATE
- [ ] SPREADER - TRAVELING GRATE
- [ ] CHAIN GRATE

GAS

- [ ] GAS RING
- [ ] VENTURI TYPE

COAL - PULVERIZER

- [ ] ATTRITION
- [ ] BALL & RACE
- [ ] BOWL MILL
- [ ] TUBULAR

OIL BURNERS

- [ ] MECHANICAL
- [ ] STEAM ATOMIZED
- [ ] AIR ATOMIZED
- [ ] ROTARY CUP

FIRING EQUIPMENT MANUFACTURER: ____

PROPERTY NO.: B-102 North

BUILDING OR LOCATION: New Hospital, Building No. H-100

BOILER 2

ACTIVITY: Marine Corps Base
Camp Lejeune, NC 28542

DATA RECORD SHEET - BOILERS
NAVFAC 9-11014/40 (9-69) Supersedes NAVDOCKS 2509
S/N 0105-003-7010

FITTING	NUMBER	SIZE	MANUFACTURER	TYPE	SETTING	RANGE	PRESSURE CLASS
SAFETY VALVES	2	2 - 1 1/2	Kunkle Valve Co.		150		
STEAM OUTLET VALVES	1 1	4" 4"	Crane Crane	Non-Return Gate-Stop			250 250
BLOW-OFF VALVES	2 1	1 1/2" 1 1/2"	Everlasting Everlasting	4000 A 4060 A			250 250
FEEDWATER VALVES	1 1	2" 2"	Lunk, No. 554 Lunk, No. 73	Check Globe			
WATER COLUMN							
FEEDWATER REGULATOR	1	1 1/2	McDonnel Miller	No. 157			150
WATER GAGES							
STEAM GAGES	1	8 1/2" Dia.	Cleaver Brooks			0-300	
SOOT BLOWERS							
FUSIBLE PLUGS							

Safety Valves

No. 1 - Size 2", Set 150, Cap. 9831 B.D. 6

No. 2 - Size 1 1/2", Set 150, Cap. 5997 B.D. 6

LWCO - 2 McDonnel Miller 150 BM

High Water Alarm - McDonnel 150 B

DATA RECORD SHEET - BOILERS
NAVFAC 9-11014/40 (9-69) Supersedes NAVDOCKS 2509

MFGRS. SERIAL NO. L-68195

MFGRS. MODEL NO. CB 600-350

MANUFACTURER CLEAVER BROOKS

DATE OF SHEET

TYPE OF SUPERHEATER: NONE

TEMPERATURE AT SUPERHEATER OUTLET: ____ °F

NORMAL FEEDWATER TEMPERATURE: ____ °F

(See Reverse Side for Fittings)

FURNACE VOLUME: ____ CU. FT

HEATING SURFACE (SQ. FT.)
- BOILER 1750
- WATER WALL
- ECONOMIZER
- SUPERHEATER

DRUMS
- NO. 1
- DIAMETER 78" IN.
- LENGTH 16 FT. 9 IN.
- [ ] RIVETED
- [ ] FORGE WELDED
- [X] FUSION WELDED

OPERATION
- [X] AUTOMATIC
- [ ] SEMI-AUTOMATIC
- [ ] MANUAL

PRESSURE (psig)
- ____ DESIGN
- 150 MAWP
- ____ INSTALLED WP

AIR HEATER
- [X] NONE
- [ ] TUBULAR
- [ ] REGENERATIVE
- [ ] STEAM

USE
- [X] EXPORT
- [ ] ELEC. POWER GENERATION
- [ ] LAID UP - WET
- [ ] LAID UP - DRY

CAPACITY
- ____ HP
- ____ LB./HR
- ____ EDR
- 14645000 BTU/HR.

DATE BUILT

DATE INSTALLED 1982

BOILER

TYPE
- [ ] C.I.
- [ ] WATER TUBE
- [X] FIRE TUBE

DRAFT
- [ ] NATURAL
- [X] FORCED
- [ ] INDUCED

PRODUCES
- [X] STEAM
- [ ] LOW TEMP. WATER
- [ ] HIGH TEMP. WATER

CIRCULATION
- [X] NATURAL
- [ ] FORCED

FUEL

FUEL & FIRING EQUIPMENT IN SERVICE

COAL
- [ ] ANTHRACITE
- [ ] BITUMINOUS

OIL
- [X] COMMERCIAL 1, 2, 4, 5, (6)
- [ ] NAVY
- [ ] OTHER ____

GAS
- [ ] NATURAL
- [ ] MANUFACTURED

ALTERNATE FUEL & FIRING EQUIPMENT

COAL
- [ ] ANTHRACITE
- [ ] BITUMINOUS

OIL
- [X] COMMERCIAL 1, (2) 4, 5, 6
- [ ] NAVY SPECIAL
- [ ] OTHER ____

GAS
- [ ] NATURAL
- [ ] MANUFACTURED

FIRING EQUIPMENT

FIRING EQUIPMENT IN SERVICE

- [ ] COAL-HAND FIRED

COAL - STOKER
- [ ] UNDERFEED - MULTIPLE RETORT
- [ ] UNDERFEED - SINGLE RETORT
- [ ] SPREADER - DUMP GRATE
- [ ] SPREADER - VIBRATING GRATE
- [ ] SPREADER - TRAVELING GRATE
- [ ] CHAIN GRATE

GAS
- [ ] GAS RING
- [ ] VENTURI TYPE

COAL - PULVERIZER
- [ ] ATTRITION
- [ ] BALL & RACE
- [ ] BOWL MILL
- [ ] TUBULAR

OIL BURNERS
- [ ] MECHANICAL
- [X] STEAM ATOMIZED
- [X] AIR ATOMIZED
- [ ] ROTARY CUP

ALTERNATE FIRING EQUIPMENT

- [ ] COL-HAND FIRED

COAL - STOKER
- [ ] UNDERFEED - MULTIPLE RETORT
- [ ] UNDERFEED - SINGLE RETORT
- [ ] SPREADER - DUMP GRATE
- [ ] SPREADER - VIBRATING GRATE
- [ ] SPREADER - TRAVELING GRATE
- [ ] CHAIN GRATE

GAS
- [ ] GAS RING
- [ ] VENTURI TYPE

COAL - PULVERIZER
- [ ] ATTRITION
- [ ] BALL & RACE
- [ ] BOWL MILL
- [ ] TUBULAR

OIL BURNERS
- [ ] MECHANICAL
- [ ] STEAM ATOMIZED
- [ ] AIR ATOMIZED
- [ ] ROTARY CUP

FIRING EQUIPMENT MANUFACTURER

PROPERTY NO. B-102 NORTH

BUILDING OR LOCATION NEW HOSPITAL H-100

BOILER 2

ACTIVITY MCBCL

FITTING	NUMBER	SIZE	MANUFACTURER	TYPE	SETTING	RANGE	PRESSURE CLASS
SAFETY VALVES	2	2 - 1½	KUNKLE VALVE CO		150		
STEAM OUTLET VALVES	1	4"	CRANE	NON-RETURN			250
	1	4"	CRANE	GATE. STOP			250
BLOW-OFF VALVES	2	1½"	EVERLASTING	4000 A			250
	1	1½"	EVERLASTING	4060 A			250
FEEDWATER VALVES	1	2"	LUNK #554	CHECK			
	1	2"	LUNK #73	GLOBE			
WATER COLUMN							
FEEDWATER REGULATOR	1	1½	McDONNELL MILLER	NO. 157			150
WATER GAGES							
STEAM GAGES	1	8½" DIA	CLEVER BROOKS			0 - 300	
SOOT. BLOWERS							
FUSIBLE PLUGS							

SAFETY VALVE

NO.1 SIZE 2" SET 150 CAP. 9831 BD. 6

NO.2 SIZE 1½" SET 150 CAP. 5997 BD. 6

LWCO - 2 McDONNELL MILLER 150 BM

HIGH WATER ALARM - McDONNELL 150 B

7/23/90

#2 BOILER (ACTUAL READINGS)

@ 200°F oil temperature

	GPM	GPH	O_2	CO_2	STACK TEMP	% EFF		B.P.
Ø %	0.14	8.4	10.5%	9.0%	340°F	85 3/4 %	@ 250 NST	10.5
25 %	0.38	19.2	6.5%	12.5%	350° F	87.5%	@ 250 NST	12.6
50 %	0.90	54.0	7.5%	11.5%	360° F	87 1/4 %	@ 250 NST	17.3
75 %	1.25	75.0	8.5%	11.5%	375° F	86.0 %	@ 300 NST	20.
100 %	1.30	78.0	7.0%	12.0%	380° F	86 1/4 %	@ 300 NST	20.6

air ambient temp. @ 100°F

OPTIMUM READINGS

@ 5:1 ratio

	GPM	GPH
Ø %	.30	18.5
25 %	.62	37.0
50 %	.92	55.5
75 %	1.23	74.0
100 %	1.54	92.5

MAX CAPACITY - 97.5 GPH

95% MAX CAPACITY - 92.5 GPH

7/23/90
Time Out.
3627