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9 **BEFORE THE GUAM PUBLIC UTILITIES COMMISSION**

10 **IN THE MATTER OF:**

11 The Application of the Guam Power  
12 Authority for Approving the Contract with  
13 TEMES, Inc. for the Cabras 2 Overhaul.

14 **GPA DOCKET NO. 22-07**

15 **PETITION FOR CONTRACT REVIEW**

16 **COMES NOW**, the GUAM POWER AUTHORITY (GPA), by and through its  
17 counsel of record, D. GRAHAM BOTHA, ESQ., and hereby files GPA's Petition for the  
18 Public Utilities Commission of Guam to review and approve GPA's request for approval  
19 of the Contract with TEMES, Inc. for the Cabras 2 Overhaul, as follows:

20 **BACKGROUND**

21 The Guam Power Authority contracted with TEMES, Inc. for PMC services for  
22 Cabras 1 and 2, which contract expires September 2023. The generator at Cabras 2  
23 needs an overhaul, and the overhaul is scheduled to begin September 2022 and last 50  
24 days. The last overhaul was completed in April 2016, and a turbine overhaul is  
25 recommended every 5 years, but was rescheduled due to the pandemic. The overhaul  
26 will include the replacement of archway tubes, replacement of gas and air duct  
27 expansion joints, maintenance of air preheaters and burner fronts, replacement of  
28 safety valves; overhaul of the turbine, cleaning of the condenser, and maintenance of  
ancillary services including the boiler feed pumps, force draft fans, and cooling water  
pipes. The CCU in Resolution FY2022-07 has approved GPA's request for approval of  
the Contract with TEMES, Inc. for the Cabras 2 Overhaul in the amount of \$4,960,602  
using revenue funds.

ORIGINAL

1 **DISCUSSION**

2 GPA hereby petitions the PUC, pursuant to the Contract Review Protocol for the  
3 Guam Power Authority, approved by the PUC, to review and approve the Contract with  
4 TEMES, Inc. for the Cabras 2 Overhaul in the amount of \$4,960,602. In support of this  
5 Petition, GPA hereby provides the PUC with Consolidated Commission on Utilities  
6 (CCU) Resolution No. FY2022-07, which authorizes the General Manager to proceed  
7 with the Contract with TEMES, Inc. for the Cabras 2 Overhaul. Said resolution and its  
8 exhibits are attached herein as Exhibit A, and incorporated by reference herein as if fully  
9 set forth.

10 **CONCLUSION**

11 The PUC should approve GPA's request to proceed with the Contract with  
12 TEMES, Inc. for the Cabras 2 in the amount of \$4,960,602. The Cabras 2 until is  
13 essential to the island wide power, system, and the contract is reasonable, prudent, and  
14 necessary.

15 **RESPECTFULLY SUBMITTED** this 27<sup>th</sup> day of January, 2022.

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18 D. GRAHAM BOTHA, ESQ.  
19 GPA General Counsel  
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**CONSOLIDATED COMMISSION ON UTILITIES**

Guam Power Authority | Guam Waterworks Authority

P.O. Box 2977 Hagatna, Guam 96932 | (671) 648-3002 | guamccu.org

**GPA RESOLUTION NO. FY2022-07**

**AUTHORIZING THE GUAM POWER AUTHORITY TO SEEK APPROVAL FROM THE PUC TO  
PROCEED WITH THE CABRAS UNIT 2 MAJOR OVERHAUL**

**WHEREAS**, GPA entered into a Performance Management Contract (PMC) with Taiwan Electrical and Mechanical Engineering Services, Inc. (TEMES) to manage the Cabras 1&2 power plant; and

**WHEREAS**, TEMES has been the PMC for Cabras 1&2 power plant since 2002 and the last contract was entered into on October 1, 2020 and expires September 2023; and

**WHEREAS**, the last boiler and turbine overhaul for Cabras Unit 2 was completed in April 2016; and

**WHEREAS**, a boiler overhaul for the unit is recommended every 18 months and a turbine overhaul is recommended every 5 years; and

**WHEREAS**, the overhaul was scheduled in March 2020, but was postponed due to the pandemic, and

**WHEREAS**, since the last overhaul, Cabras Unit 2 has experienced unit outages and significant unit down time caused by boiler tube failures; plant safety valve failures; as well as insufficient air flow caused by gas and air duct leakage which has restricted unit output; and

**WHEREAS**, the overhaul will ensure the unit is available, reliable, efficient, and most importantly safe to operate until the new Ukudu power plant is commissioned; and

**WHEREAS**, major overhaul activities include replacement of archway tubes in the rear water wall and boiler water wall areas; replacement of gas and air duct expansion joints; maintenance of air preheaters and burner fronts; replacement of safety valves; overhaul of the turbine; cleaning of the condenser, and maintenance of ancillary services including the boiler feed pumps, force draft fans, and cooling water pipes; and

**WHEREAS**, the overhaul is scheduled for September 2022 and will last approximately 50 days; and

1           **WHEREAS**, the overhaul is necessary to maintain the reliability, availability, and safety of  
2 Cabras Unit 2, restore overall plant efficiency, and support economic dispatching of the  
3 generation system; and

4           **WHEREAS**, the total overhaul cost is anticipated to be \$4,960,602; and

5           **WHEREAS**, this project is budgeted under capital improvement funds; and

6           **WHEREAS**, approval is requested to petition the PUC to utilize CIP funds for the Cabras  
7 Unit 2 Overhaul in the amount of \$4,960,602.

8           **NOW, THEREFORE, BE IT RESOLVED**, by the Consolidated Commission on Utilities as  
9 follows:

10           1. After careful consideration, the Consolidated Commission on Utilities finds the  
11 Cabras Unit 2 overhaul to be reasonable, prudent and necessary for the reliable  
12 operation of the generating plant.

13           2. The General Manager of the Guam Power Authority is hereby authorized to  
14 petition the PUC to utilize revenue funds in the amount of \$4,960,602 for the  
15 Cabras Unit 2 overhaul

16           **RESOLVED**, that the Chairman certifies and the Secretary attests the adoption of this  
17 Resolution.

18           **DULY AND REGULARLY ADOPTED AND APPROVED THIS 25<sup>TH</sup> DAY OF JANUARY, 2022.**

19  
20 Certified by:

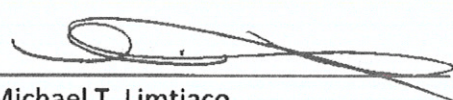
Attested by:

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24 JOSEPH T. DUENAS

25 Chairperson

26 Consolidated Commission on Utilities

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30 Michael T. Limtiaco

31 Secretary

32 Consolidated Commission on Utilities

1 I, Michael T. Limtiaco, Secretary for the Consolidated Commission on Utilities (CCU), as  
2 evidenced by my signature above do certify as follows:

3 The foregoing is a full, true, and accurate copy of the resolution duly adopted at a  
4 regular meeting of the members of the Guam Consolidated Commission on Utilities, duly and  
5 legally held at a place properly noticed and advertised at which meeting a quorum was present  
6 and the members who were present voted as follows:

7 Ayes: 5

8 Nays: 0

9 Absent: 0

10 Abstain: 0



# **CABRAS 2**

## **MAJOR OVERHAL**

# Scope of Work & Costs

System	Description	Est. Cost
Boiler	Safety Valve Repair/Replacement	\$98,630
Boiler	Boiler Casing and Refractory Renewal, Including Soot Disposal	\$59,400
Boiler	Archway Tubes - 50%; Rear Water wall tubes and Boiler Water wall tube replacement	\$31,574
Boiler	Gas and Air Duct Expansion Joint Replacement	\$191,321
Boiler	2A & 2B APH Maintenance	\$87,102
Boiler	Stack Refurbishment and Support Structure Rehabilitation	\$104,578
Boiler	Burner Front Components Renovation	\$545,745
Turbine	Condenser A&B banks and service water cooler inspection and jet cleaning	\$58,744
Turbine	Condenser Expansion Joint Replacement	\$84,842
Turbine	Turbine Generator Overhaul	\$2,875,000
Ancillary	Space Heater Installation for 2PT, PPT NGR; CWP control cable replacement, Inverter #2 Maintenance, misc motor inspections	\$98,754
Ancillary	Service Water Cooler Cooling Water Pipes and Drain Lines Replacement	\$52,779
Ancillary	125 VDC Battery Bank Replacement	\$9,474
Ancillary	Fire Pump	\$162,660
	TOTAL COST	\$4,960,602

# Cost Summary

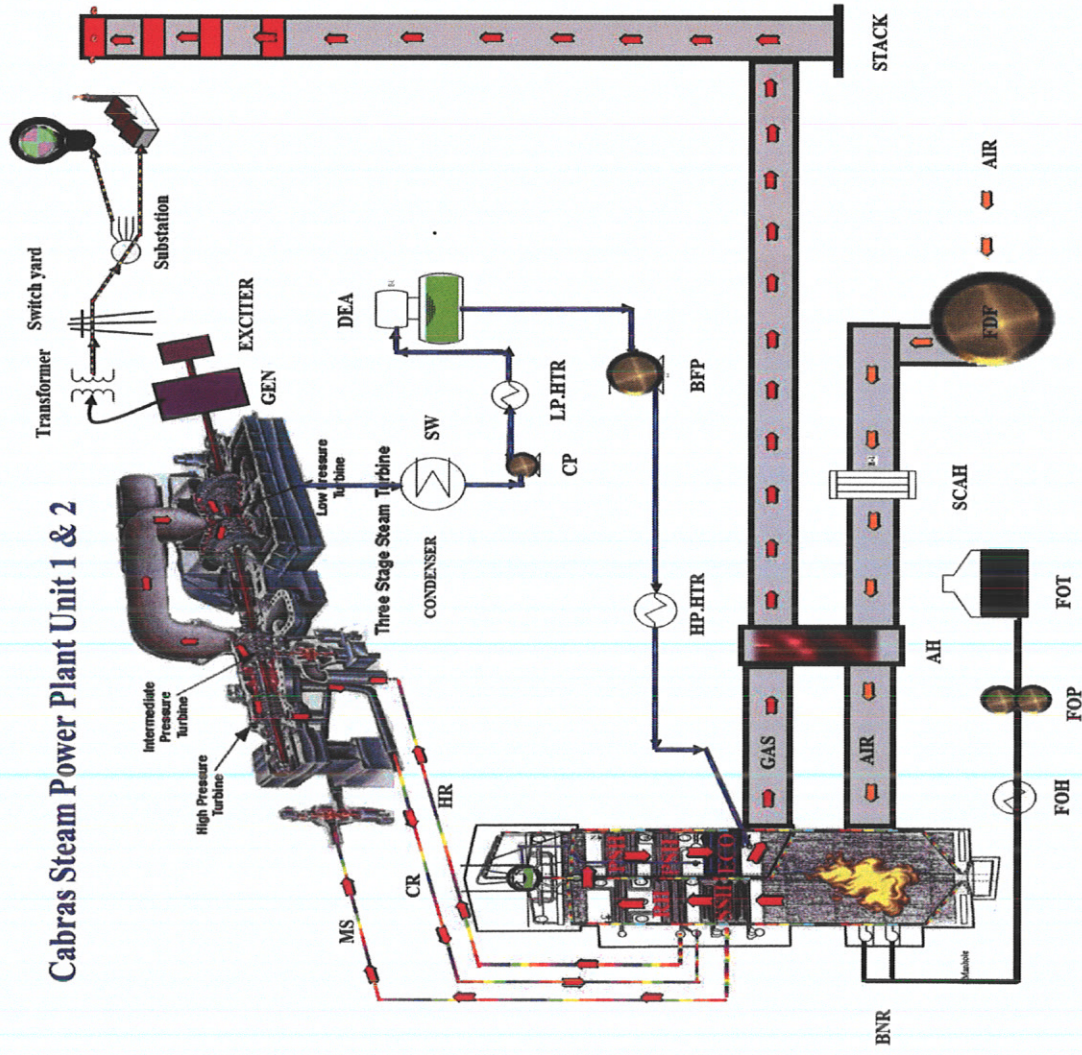
SUMMARY Cabras 2 Overhaul	
Boiler	\$1,618,350
Turbine	\$3,018,586
Ancillary	\$323,667
TOTAL	\$4,960,602

# CABRAS 2 OUTAGES

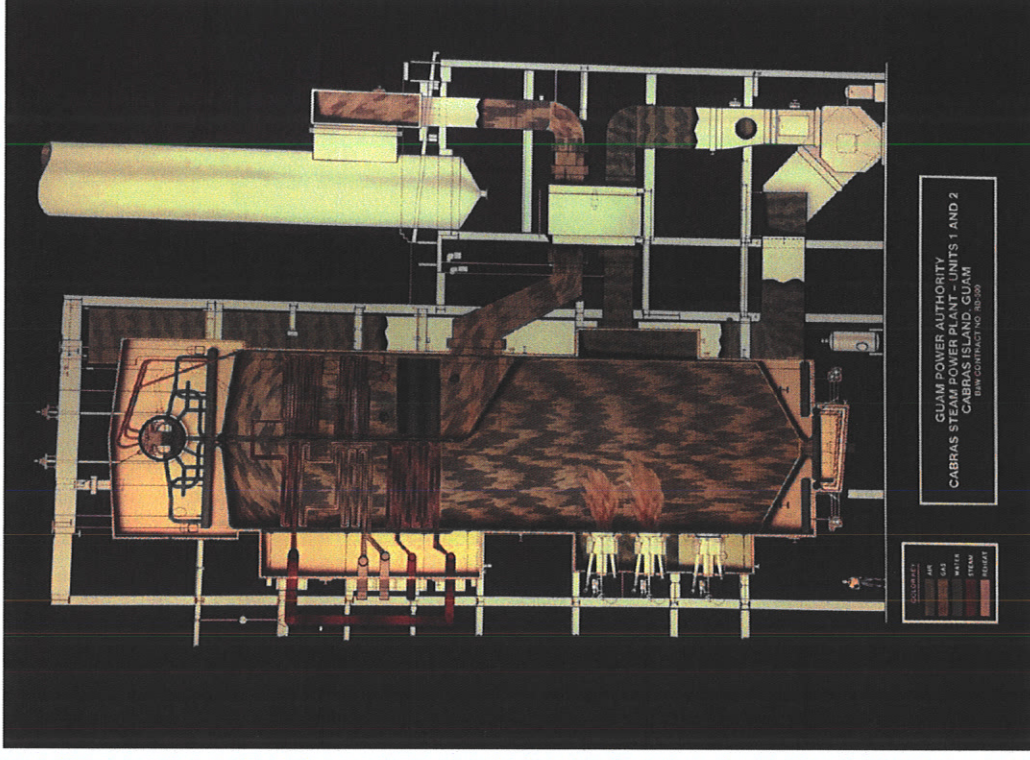
OUTAGES	
2021	127 DAYS
2022	4 DAYS

OUTAGES	Days	Reason
2/20/2021	13	APH Cleaning, FDF Troubleshooting, Inspection
4/4/2021	4	Boiler Tube Leaks
4/18/2021	12	Boiler Tube Leaks
4/23/2021	7	Boiler Tube Leaks
5/15/2021	33	Condenser cleaning, APH Cleaning, Soot blowing, Turbine and Generator Inspection
7/7/2021	36	Boiler Tube Leaks
12/7/2021	20	APH Basket Replacement 2A Hot End, Turbine & Generator Inspection
12/25/2021	2	Boiler Tube Leaks

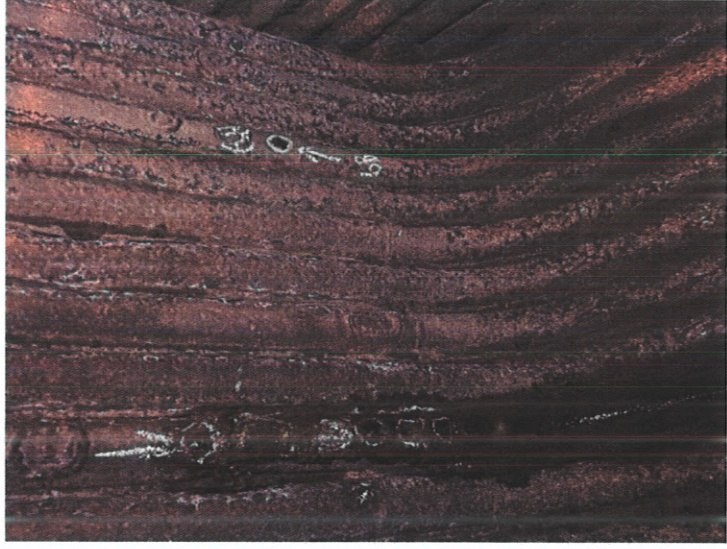
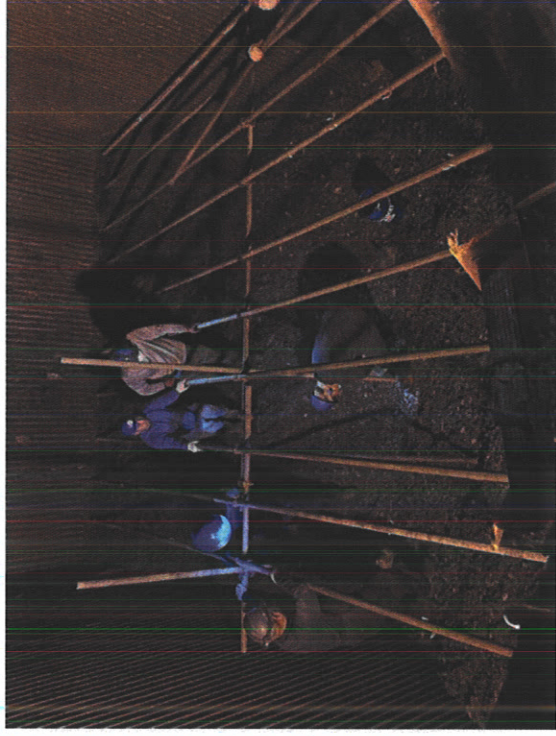
# Cabras Steam Power Plant Unit 1 & 2

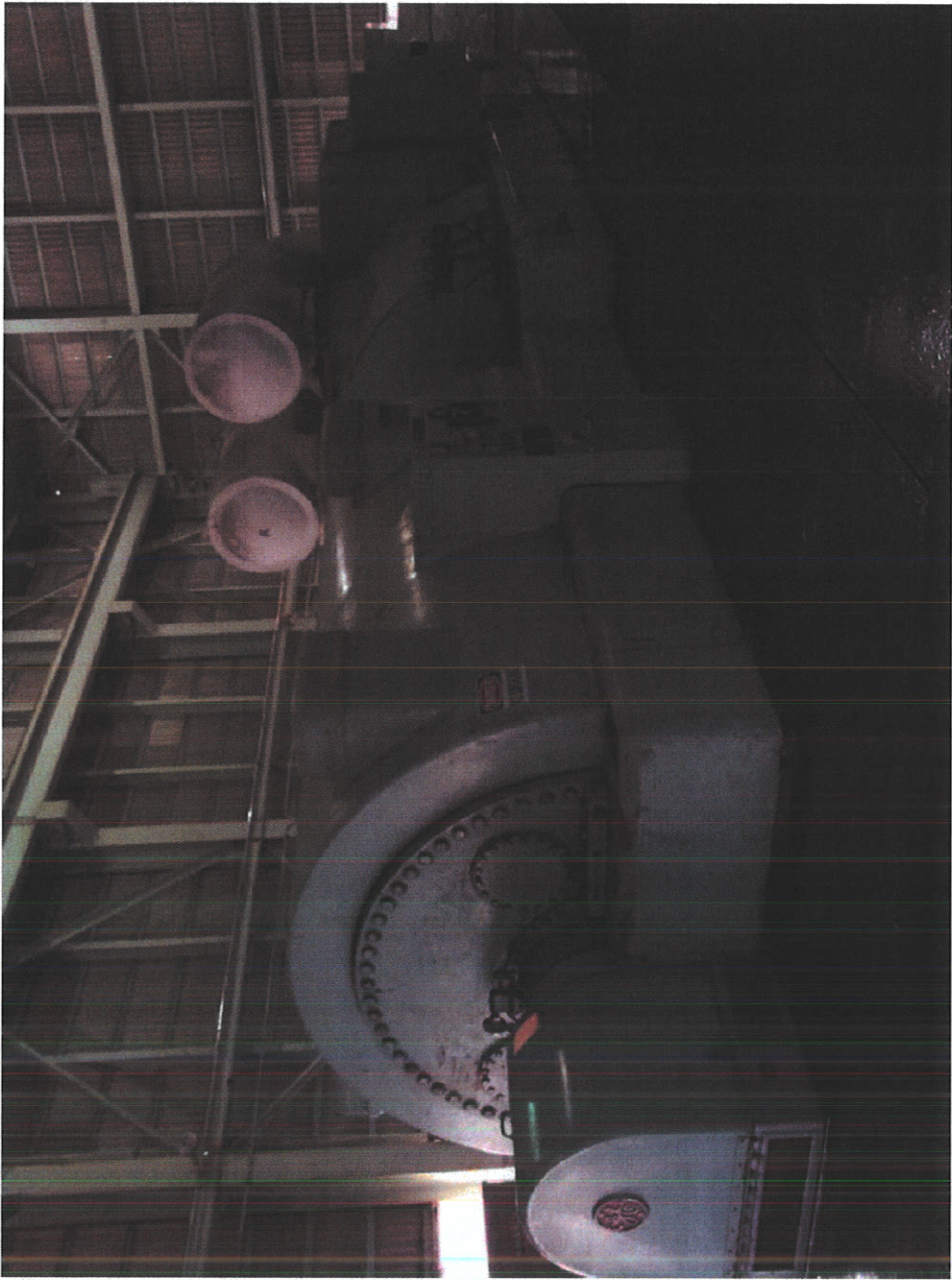


# BOILER



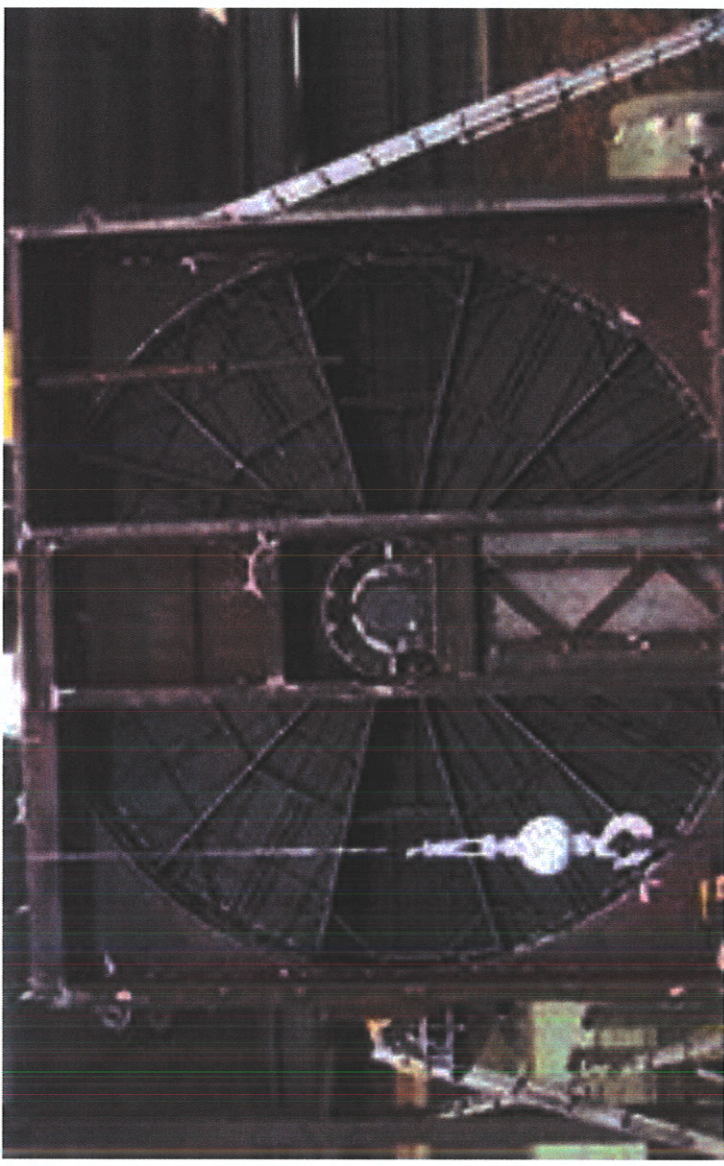
# BOILER TUBE LEAKS





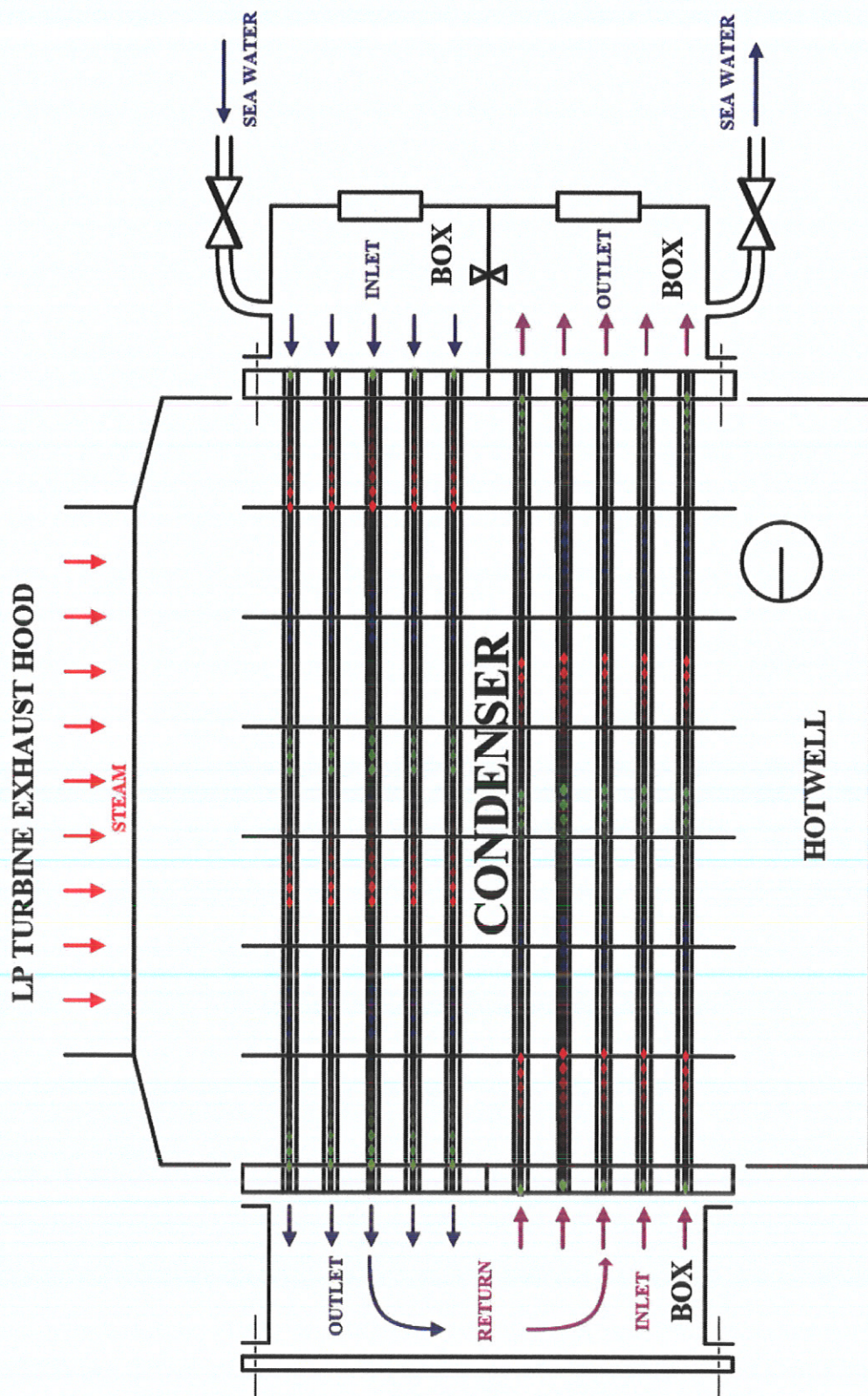
**TURBINE**

# AIR PREHEATER



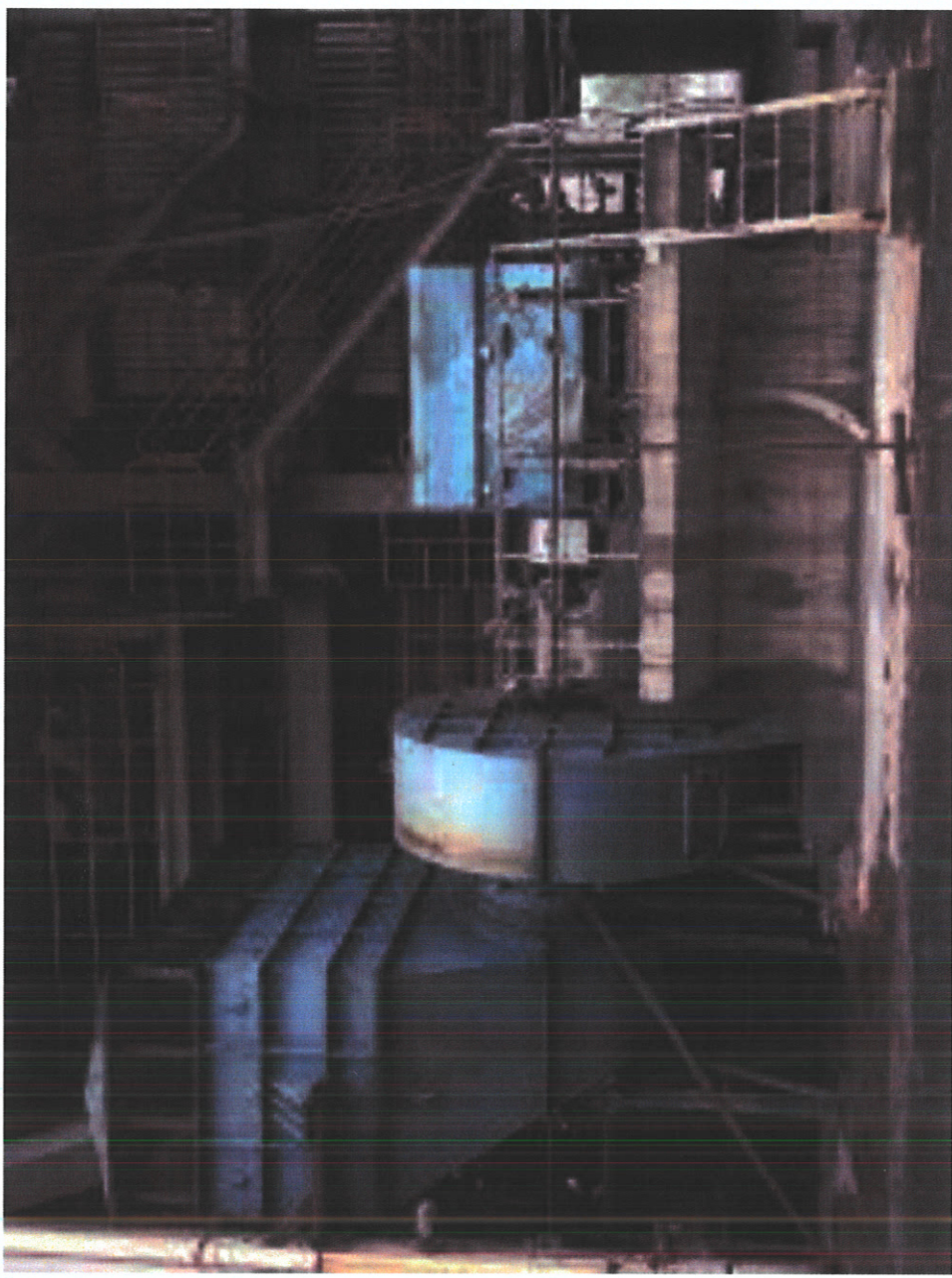
# AIR PREHEATER REPAIRS NEEDED





# **SHORTAGE OF CIRCULATING WATER CIRCULATING WATER PUMP (CWP) TRIP**





**FORCE  
DRAFT FAN**

## CONDENSER REPAIR AND CLEAN



## SEAWATER PIPE LEAK



## FORCE DRAFT FAN REPAIRS

