Lebanon PA
VA Medical Center
Lebanon, PA
January 28-30, 2015

Boiler Plant Program Review

Boiler Efficiency Institute LLC.

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2-6-2015

1 CONTENTS

Boiler Plant Program Review

2 OVERVIEW

Per contract VA255-12-C-0258 the Boiler Efficiency Institute has been employed to perform a boiler plant program review at 8 VA hospitals from August 2014 – July 2015. A team consisting of VACO personnel and 2 BEI Engineers performed a detailed review of the boiler plant program over the course of three eight hour days.

The primary objective of this work is to provide support documentation to be used to develop a national strategy to strengthen the Boiler Operations program. This review includes qualitative and quantitative surveys of each boiler plants long term plans, leadership, and operational efficiency. This information should help VACO determine which facilities are meeting long term goals and why long term goals are or are not being met.

The team reviewed boiler plant and hospital documentation, conducted interviews with management, conducted interviews with staff, conducted interviews with VISN personnel and performed a few selected safety tests from the Boiler Plant Safety Device Testing Manual 3rd Edition.

Eight sites of interest have been identified for review:

Lebanon, PA
Portland, OR
Dallas, TX
Kansas City, MO
West Haven, CT
Loma Linda, CA
Montgomery, AL
Sacramento, CA

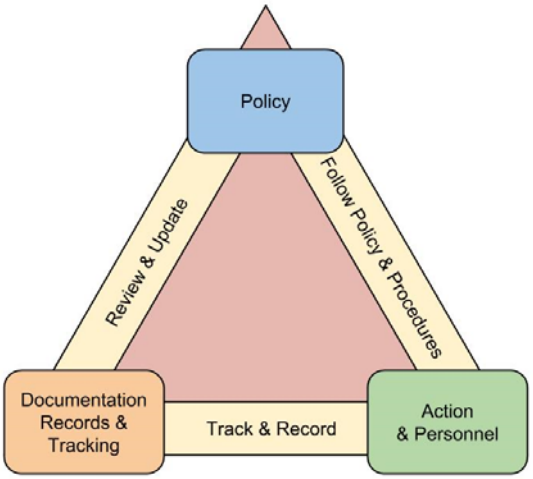
3 EVALUATION CRITERIA

A high performing, safe, and efficient boiler program includes: a complete up to date library of boiler plant policies, personnel who take systematic action, and proper documentation of all maintenance, training, and testing done. Essentially, a boiler program can be evaluated using three distinct categories.

Are there written policies in place?

Are personnel qualified and acting systematically to achieve the requirements of the directive?

Are these actions being properly documented?



Policies are imperative as they guide boiler plant personnel and management on how decisions should be made. Policies give personnel the necessary tools to make routine and emergency boiler plant decisions in the best interest of the facility in support of the mission. Policies must be frequently reviewed to ensure they reflect the facilities current needs in support of the mission.

Actions and the qualified **personnel** that execute them are the heart of any boiler plant program. Boiler plant personnel and management must be qualified for the job at hand and take policy driven, **systematic actions** that result in full compliance with the directive. Though proper action can still occur without them, policy driven actions should be guided by written SOPs. Non-policy driven action based on oral procedure can lead to confusion, non-compliance and reduced operational efficiency.

Documentation and progress **tracking** are also essential parts of a safe and efficient boiler program. Documentation allows boiler plant personnel and management to understand boiler plant trends, verify proper training, and improve operational efficiency. For example, the documentation of safety testing can flush out unseen boiler safety problems. This documentation is also useful to protect operators and is a **record** of how and when personnel accomplish their duties. As the boiler plant changes with time and technology, it is important that documentation be frequently reviewed and updated to reflect the most current state of the boiler plant and its operation.

4 DASHBOARD SUMMARY

Below is a summary of the data collected over the course of a three day review in Lebanon, PA. The data is graphically depicted in figures 4-1. Detailed information is recorded in Section 5 and Appendix A.

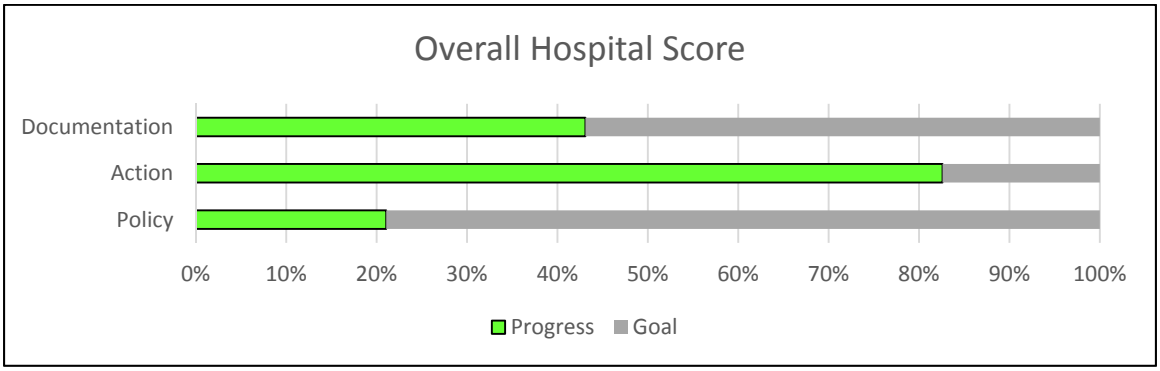


Figure 4-1. Overall Hospital Score

This Lebanon VA was picked as a high performing site based on BEI experience in conducting VISN 4 safety training for the VISN over a period of two years. The site became fully compliant in safety testing within two rounds of BEI testing and training. That contract ended in 2011. The data collected on this visit show that the site is not performing as well currently, indicating that the system in place earlier was not sustainable or that there was a flaw in the documentation and communication of the system.

The data collected in Section 5 and Appendix A show the facility has personnel capable of performing their required duties and are generally acting in accordance with the directive. Current written policy and thorough documentation are areas of improvement. Some other required actions to ensure compliance and a sustainable program are as follows.

- Create specific policies in accordance with the directive.
- Train personnel to implement these policies.
- Have periodic review and verification by a third party agency.

The data listed in Section 5 indicates the following priority issues (see more specific details in Appendix A):

- Written policies should be created in accordance with the directive, including but not limited to the following.
    - This facility should create a written steam load shedding policy and SOP.
    - The facility should create a written steam conservation program
    - The facility should create a written operator training program. At a minimum the training should address issues such as Annual training programs for Electrical Safety, MSDS, OSHA, LOTO, etc. should be created and maintained in the TMS.
    - A formal system of notification of safety device deficiencies to the director.
- The Director, Engineering Manager and Boiler plant supervisor should be involved in the approval process of the Quarterly Compliance Survey.

5 REPORT DOCUMENTATION

5.1 ENTRANCE MEETING (1HR) - TO DISCUSS THE OBJECTIVES AND METHODS OF THE REVIEW.

Included: VAMC management and invited staff

Name (Please Print)	Title / location*	phone
Robert Callahan Jr.	Director/ CEO	717-272-6621 x5904
Linda Umberger RN	Executive Assistant to Director	
Vince Kane	Associate Director	
Robert Wentling	Executive Assistant Director	
Margret Wilson	Assoc. Director Patient Care Services	
Kate Reesor	Executive Assistant ADPCS	
Anthony Slovinski MD	Chief of Staff	
Jodi Groff	EA COS	
Laine Heilum RN	Director, Quality Management	
Chris Hromes	Boiler Plant Manager	
Thad Kocuba	Facilities Manager	
Doug Ryan	VACO – Review team	
Mike Reed	VACO – Review team	
Vince Rizzo	VACO – Review team	
Rob Engle	BEI - Review team	334-821-3095
David Dyer	BEI - Review team	334-821-3095
Chase O'mary	BEI - Review team	334-821-3095

*All personnel are from the inspected facility unless otherwise noted.

Entrance Meeting Summary:

The introductory meeting was approximately 45 minutes long. The meeting began with a round table introduction of all attendees (see list above). VACO then introduced the purpose of the visit. A question and answer session followed with discussions of how the Directors office gets involved with issues in the boiler plant. The content of the facilities' morning meeting was discussed, the VACO group suggested that any critical items that are reported relative to the boiler plant be documented the morning report minutes. There was also a discussion about standardizing documentation into a central depository, recruiting problems, and pay grades.

The facility was very proud of their boiler plant staff, and feel everyone has a sense of pride and ownership of the program. Management informed the group that there are often management, clinical and administrative staff that visit the boiler plant to gain an understanding of the process and familiarize them with the boiler plant personnel. Management discussed how Boiler plant operators benefit greatly from third party outside expertise.

There are plans in place to build a new boiler plant. The review process for new boiler plants and the proper protocol through VACO was explained. Facility management discussed how getting the boiler plant personnel involved with the design of the new boiler plant will make the project better.

The communication of the details within the quarterly report was discussed. The facility informed the group that the quarterly compliance survey is reviewed by the Director or the AD prior to submission. This lead to a discussion about how the morning report is a very important part of this facility's communication process. This is the time where any issues in the boiler plant are discussed.

Suggestions for national improvement were discussed. This facility has after-hours maintenance. Management and Nursing both consider this VERY important. This facility believes that the extra cost of the program is offset by the increased productivity.

The question "If you had two things to point to for why is this boiler plant good?".

Answer: We don't have turnover and the boiler plant staff take ownership of the plant.

The issue of ownership was further discussed. How does this facility support operators taking ownership?"

Answer: "Management gives them the money and support they need to get things fixed. This facility does not rely on contractors to fix everything; they do a lot of work themselves. The boiler plant operators take pride in fixing things themselves. All employees understand how their actions impact veterans care. What the boiler plant does supports the nurses, doctors, and effects patient care directly."

This facility does not have feuding between shops. All shops report to the Assistant Chief Engineer.

Electrical safety was discussed. Also, it was questioned if there was a SOP for the alarms in the boiler plant e.g. the Freezers, temperature, general hospital alarms. The facility stated that there was a SOP and they knew where it was, but it was out of date.

The meeting ended on a very positive note and the review process began.

5.2 Audit Process and Results

This inspection was performed using the question rubric filled out in Appendix A. All questions were evaluated on a No, Partial, and Yes basis. A “No” evaluation was given to an item that appeared to be completely inadequate or missing. A “Partial” evaluation was given to items that have been attempted and have some proper information, but do not completely satisfy the directive or best practices. A “Yes” evaluation meets the minimum criteria in the spirit of the directive or best practices.

Scoring is generated based on the No, Partial, and Yes responses as listed above. A “No” response is awarded zero points. A partial response is awarded one point. A “Yes” response is awarded two points. This scoring system is used to generate the graphics and tables

Questions are grouped into distinct categories:

Management
Directive
Training
Parts & Supplies
References
Records
Physical Observations of Boiler Plant
Facility Condition Assessment (FCA)
Testing & Inspection

The scores for each group are summarized in tables, and the results are displayed graphically in horizontal bar charts. The bar charts indicate the percentage of total amount of points awarded on a scale of the total points possible.

The graphics and tables are to be used as a guide to help the facility improve its compliance with the directive and to achieve best practices exhibited in high performing boiler programs.

5.3 Category 1 - Management Summary

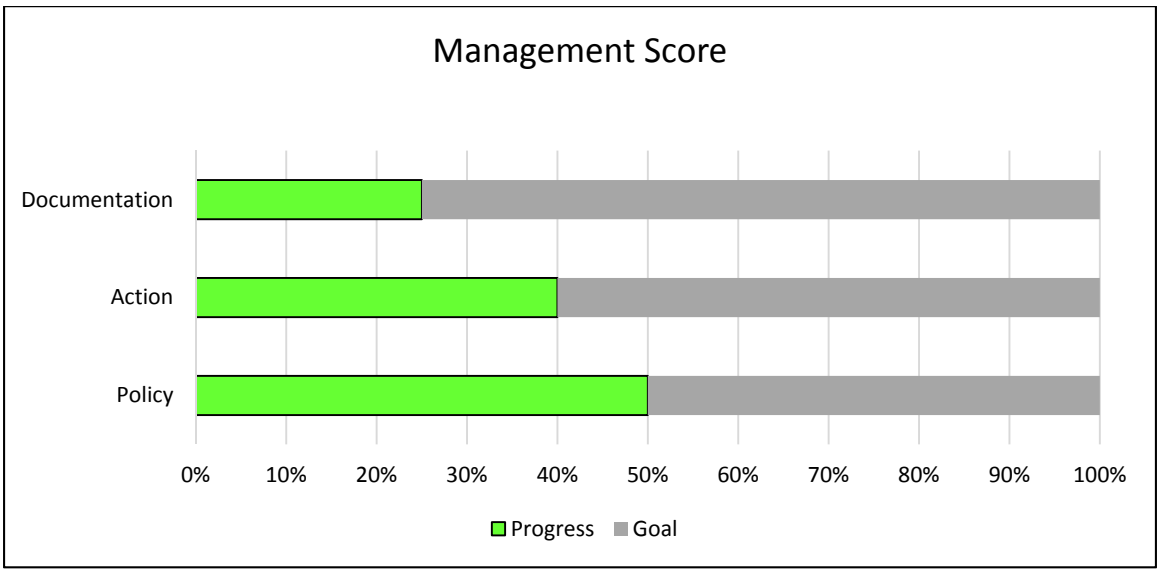


Figure 5-1

1. Management		Response count			Totals	
	Max Points Possible	No - 0 points each	Partial-1 point each	Yes-2 points each	Total Score	Percent
Policy	4	1	0	1	2	50%
Action	10	2	2	1	4	40%
Documentation	4	1	1	0	1	25%

Deficiencies found include but are not limited to:

- No written policies to address safety device deficiency correction or communication in the boiler plant.
- Safety device deficiencies are not tracked to completion and documented.
- Chief Engineer is not involved in approval of competency of new employees.
- Chief Engineer and Boiler Plant Supervisor are not involved in reviewing the Quarterly Compliance Report.

General Notes and information:

- The Boiler plant supervisor is engaged, knowledgeable and respected by the staff.
- The program would benefit from mentoring and support of the boiler plant supervisor (as a new supervisor) by facility leadership in the administrative aspects of the program and overall program management.
- The program is required to have current policies and procedures; this must be reviewed and updated to ensure future compliance and staff has written guidance on the tasks and requirements of the plant.

5.4 Category 2 - Directive 2008-062

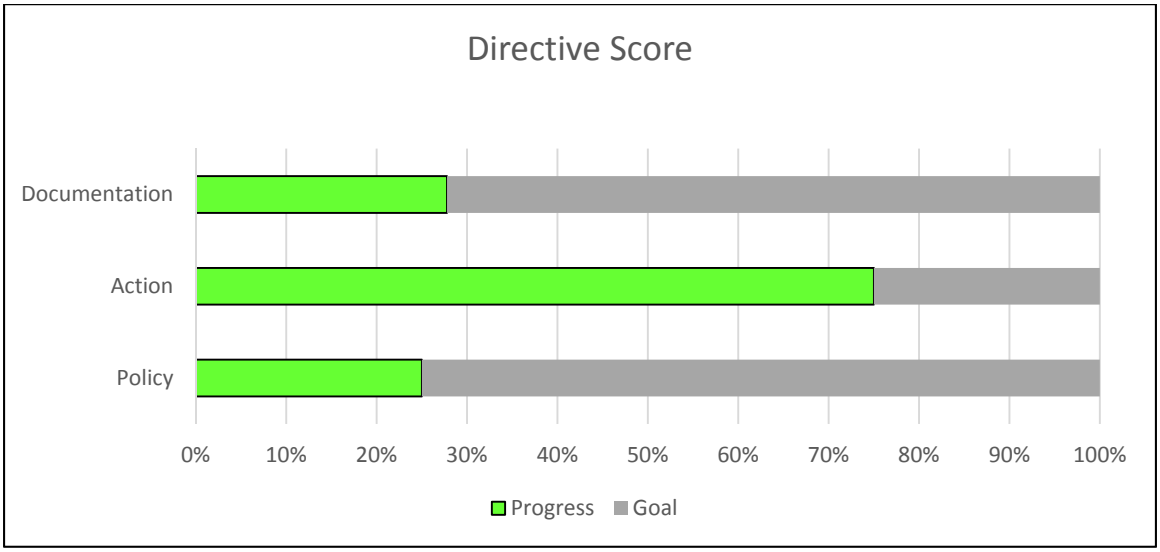


Figure 5-2

2. Directive		Response count			Totals	
	Max Points Possible	No - 0 points each	Partial-1 point each	Yes-2 points each	Total Score	Percent
Policy	16	6	0	2	4	25%
Action	16	0	4	4	12	75%
Documentation	18	6	1	2	5	28%

Deficiencies found include but are not limited to:

- There are places in the quarterly report where the information has been inaccurately reported. For example question (2A, 2B, 6A, 6B)
- Missing policies and SOP for notifying director of a non-functioning safety device and its repair.
- Policies & SOP for reviewing daily logs, updating plant drawings, testing emergency water and fuel, and policies for site specific boiler safety test procedures.

General Notes and information:

- The directive was available and the staff seemed generally aware of the content
- The program would benefit from a review of the document in detail with engineering leadership to develop a quick reference of the required deliverables.
- The facility must develop a system to ensure the accuracy and completeness of mandatory reporting requirements. The system should also have a mechanism to address the correction and reporting of deficiencies.
- The facility should develop a system of review by the SME to ensure all documents are accurate, complete and up to date.

5.5 Category 3- Training

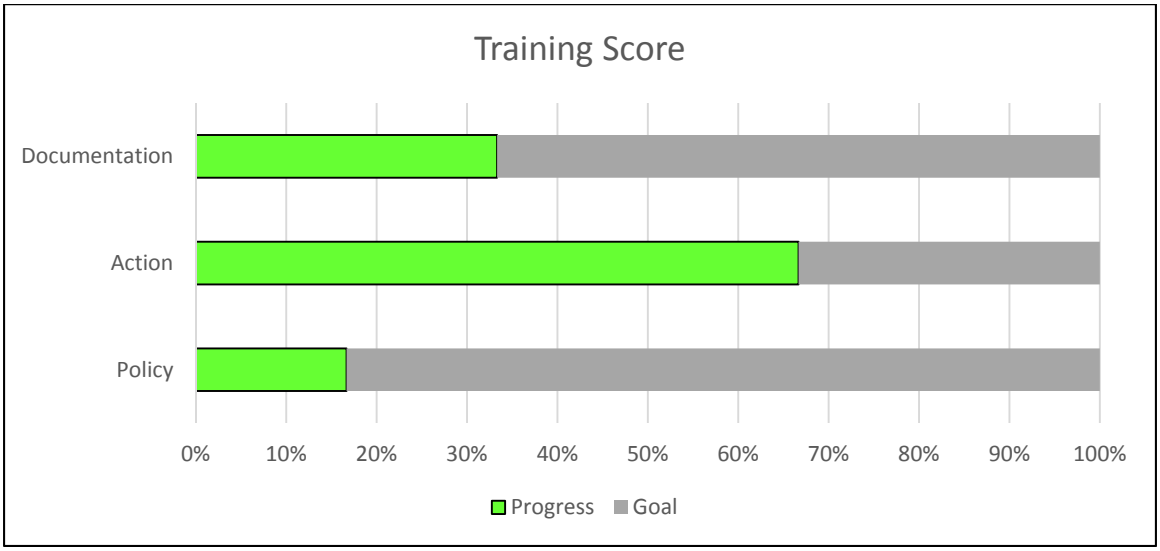


Figure 5-3. Training Score

3. Training		Response count			Totals	
	Max Points Possible	No - 0 points each	Partial-1 point each	Yes-2 points each	Total Score	Percent
Policy	6	2	1	0	1	17%
Action	6	0	2	1	4	67%
Documentation	6	1	2	0	2	33%

Deficiencies found include but are not limited to:

- There are no written policies, SOP, or documentation for training operators on plant equipment, handling emergency situations, OSHA, MSDS, etc.

General Notes and information:

- Staff is competent in the execution of their daily duties and the VA mandatory requirements.
- LOTO reviews are done annually as required.
- The program needs a training program that has long range goals and competencies in mind and lays out a general plan on how it will be achieved.

5.6 Category 4- Parts and Supplies

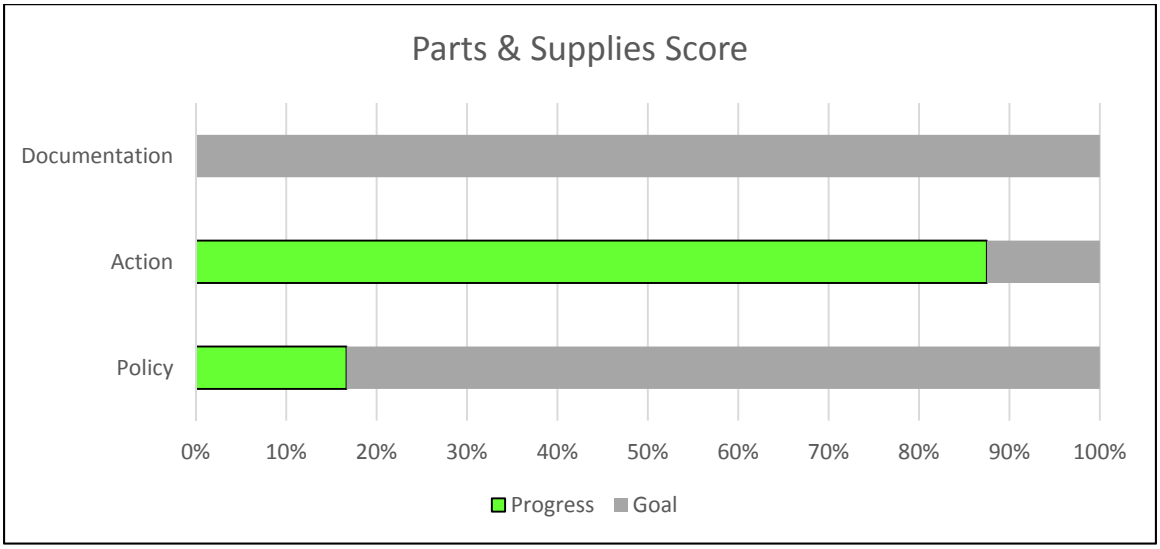


Figure 5-4. Parts & Supplies Score

4. Parts & Supplies		Response count			Totals	
	Max Points Possible	No - 0 points each	Partial-1 point each	Yes-2 points each	Total Score	Percent
Policy	6	2	1	0	1	17%
Action	8	0	1	3	7	88%
Documentation	6	3	0	0	0	0%

Deficiencies found include but are not limited to:

- There are no policies, SOP, or documentation for commonly required parts inventory, emergency parts inventory, acquisition and tracing of parts.

General Notes and information:

- The plant has a great shop area with general supplies and tools required to maintain the facility
- It is imperative the facility support the purchase and stocking of essential specialized parts and equipment that may bridge the micro purchase limit.
- It is recommended that the new plant consider this type of area as well.
- A written policy will support maintaining the required parts and allow re-evaluation in the future as well as provide the logic for the original position.

5.7 Category 5- References

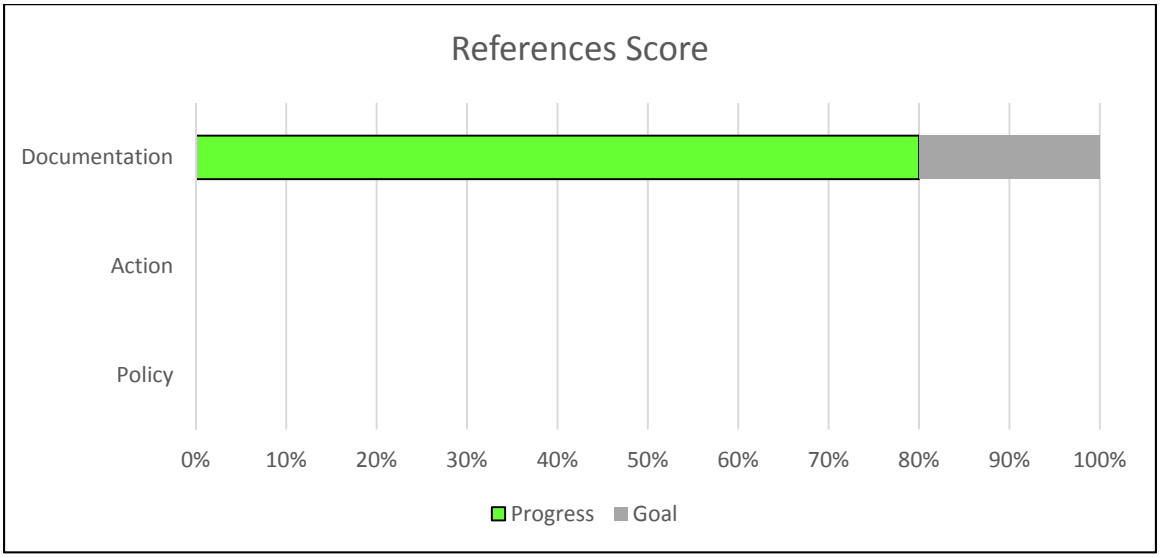


Figure 5-5. References Score

5. References		Response count			Totals	
	Max Points Possible	No - 0 points each	Partial-1 point each	Yes-2 points each	Total Score	Percent
Policy	0	0	0	0	0	N/A
Action	0	0	0	0	0	N/A
Documentation	10	0	2	3	8	80%

Deficiencies found include but are not limited to:

- There is no current and complete documentation for the emergency and normal operating procedures accessible to the boiler plant.

General Notes and information:

- The plant has a reference area with manuals and other references for operator use.
- Emergency and normal operational procedures should be written up and periodically reviewed to ensure proper training of new staff as well as to ensure consistent execution of work.

5.8 Category 6- Records

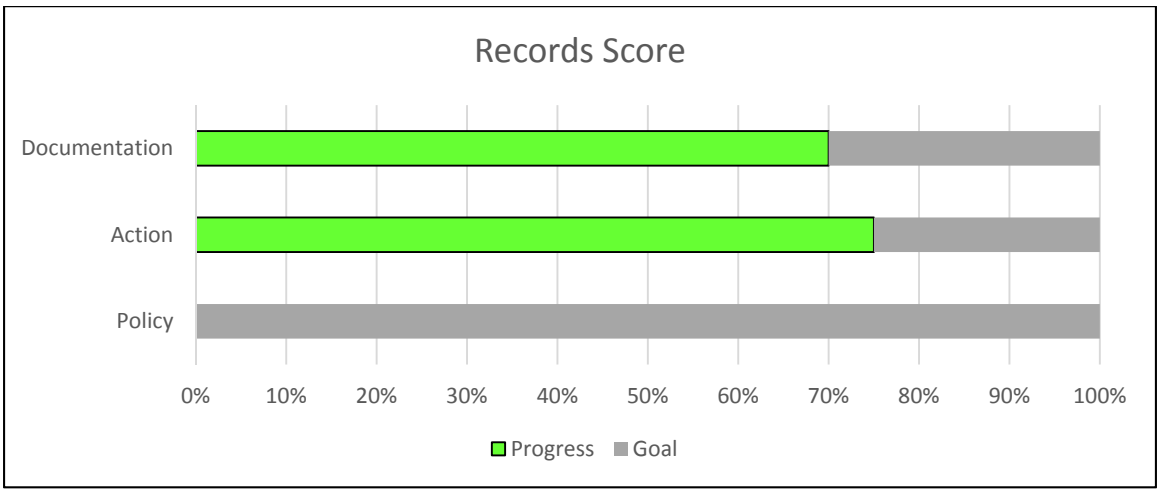


Figure 5-6. Records Score

6. Records		Response count			Totals	
	Max Points Possible	No - 0 points each	Partial-1 point each	Yes-2 points each	Total Score	Percent
Policy	4	2	0	0	0	0%
Action	4	0	1	1	3	75%
Documentation	10	1	2	2	6	60%

Deficiencies found include but are not limited to:

- There is no policy, SOP or complete documentation for the calibration of temperature and pressure gauges or review of operating logs. The gauges are calibrated, however, there are no instrument specification sheets nor is there an instrument log to ensure all instruments are addressed.
- Semiannual and Annual Boiler plant inspections for 2014 were not conducted.
- There are no records of repair for any safety device deficiencies.

General Notes and information:

- There is a system for record keeping and the files for calibration are available in hard copy in the plant
- The program would benefit from the development of an electronic system to ensure the long term maintenance of records. Records are required to be maintained for 3 years by policy.
- The program would benefit from a review of records periodically by a member of engineering that is not in the boiler plant. This will allow a fresh review and potentially identify discrepancies and oversights.

5.9 Category 7 - Physical Observations of Boiler Plant

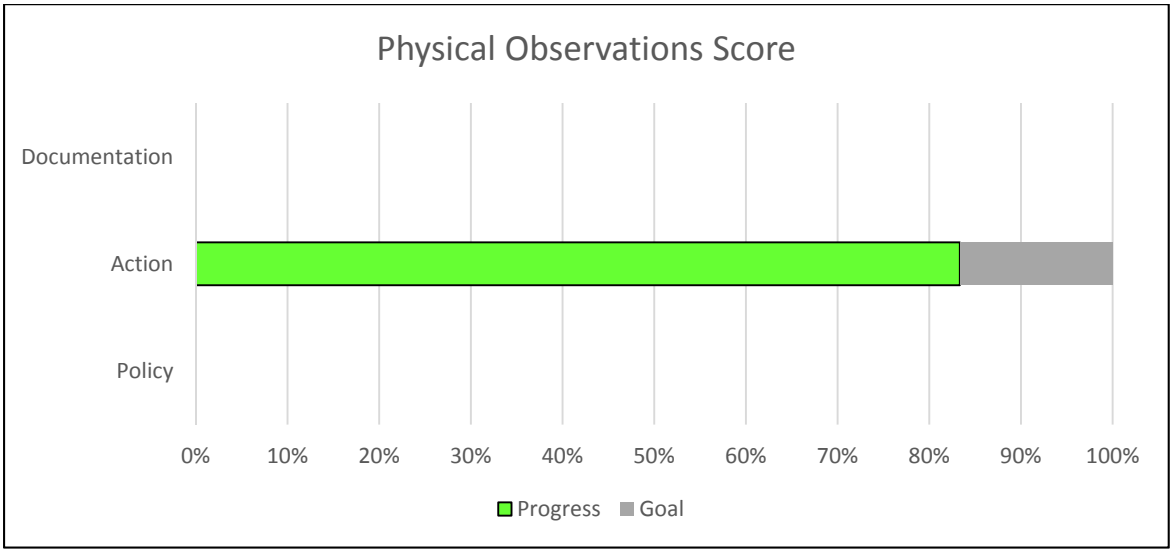


Figure 5-7. Physical Observations Score

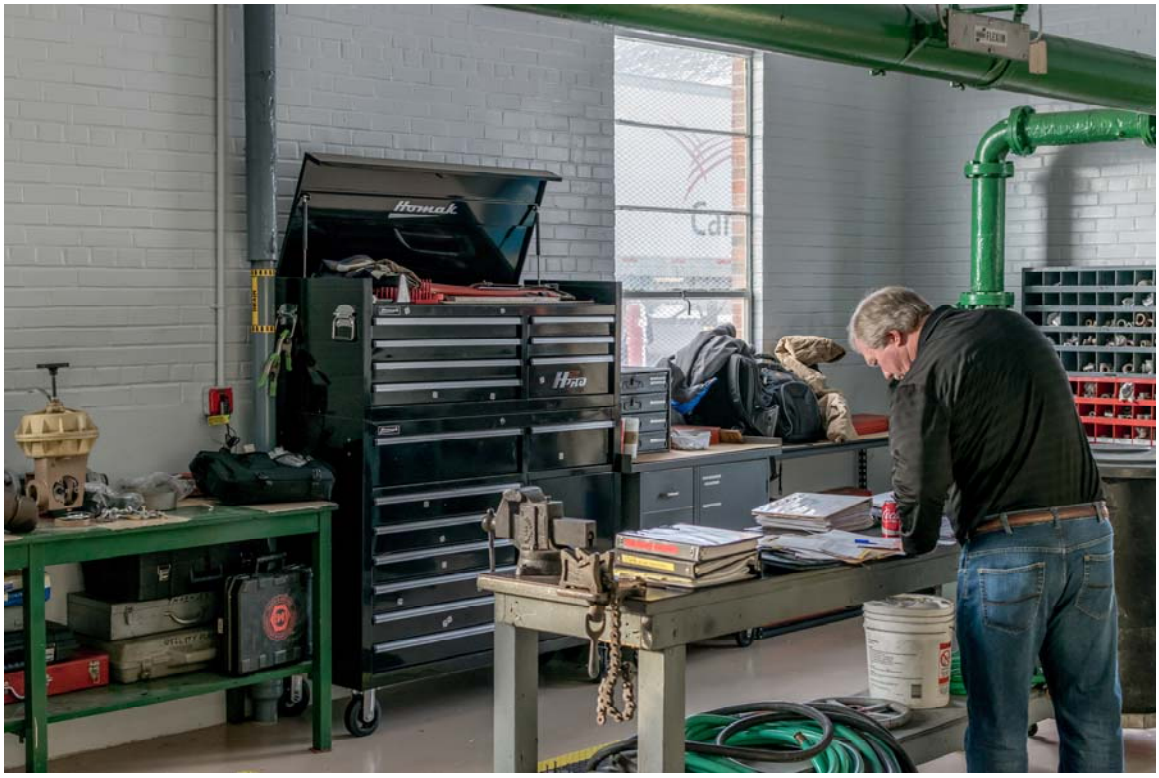
7. Physical Observations B.P		Response count			Totals	
	Max Points Possible	No - 0 points each	Partial-1 point each	Yes-2 points each	Total Score	Percent
Policy	0	0	0	0	0	N/A
Action	12	1	0	5	10	83%
Documentation	0	0	0	0	0	N/A

Deficiencies found include but are not limited to:

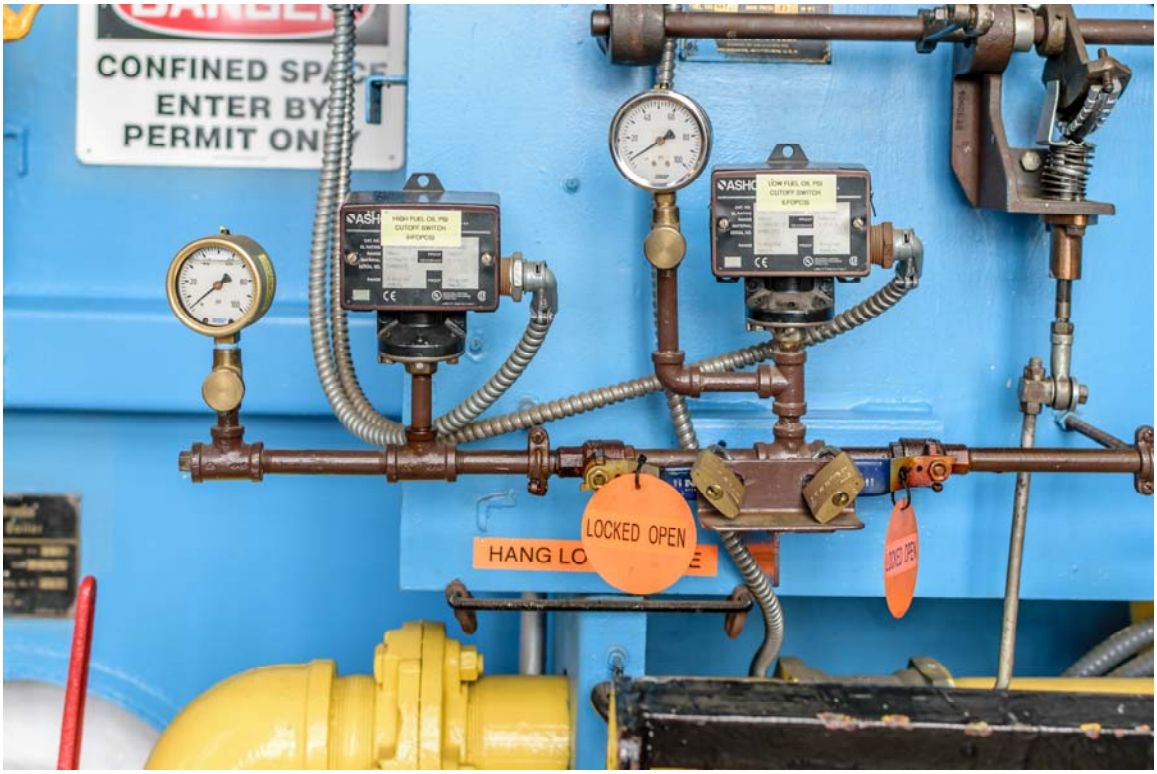
- No current electrical policy is in place, staff seems to be trained, however, records could not be provided. Additionally there is no PPE available to the staff for electrical work.

General Notes and information:

- The plant is well maintained and there is a sense of ownership that is visible in the upkeep
- Some Pictures depicting the organization and cleanliness of the plant are shown below.




ACCESS IS PROHIBITED EXCEPT FOR REQUIRED MAINTENANCE
EMERGENCY
Eye Wash
HOT


CONFINED SPA
ENTER BY
PERMIT ON
LOCKED OPEN
HANG LO


DANGER
CONFINED SPACE
ENTER BY
PERMIT ONLY
BOILER FEED WATER

5.10 Category 8 - Facility Condition Assessment (FCA)

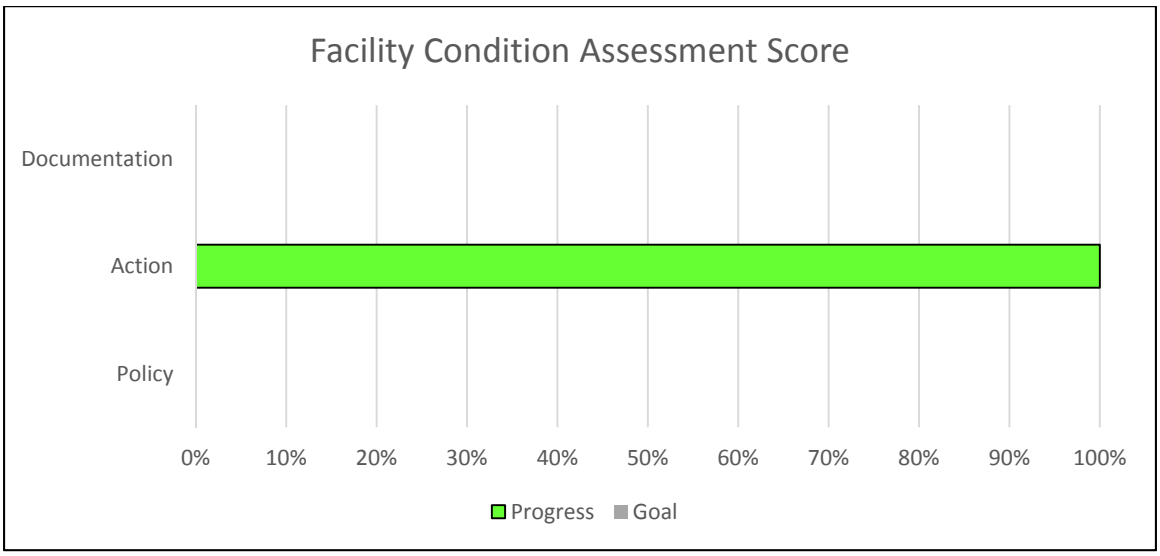


Figure 5-8. Facility Condition Assessment Score

8. Facility Condition Assessment		Response count			Totals	
	Max Points Possible	No - 0 points each	Partial-1 point each	Yes-2 points each	Total Score	Percent
Policy	0	0	0	0	0	N/A
Action	4	0	0	2	4	100%
Documentation	0	0	0	0	0	N/A

Deficiencies found include but are not limited to:

- All items on the FCA are being actively addressed as the construction of a new boiler plant is about to begin.

General Notes and information:

- The plant is in very good shape however it is nearing the end of its useful life. There is a plan for a new plant which is timely to ensure the long term sustainability and reliability of the steam supply

5.11 Category 9 - Testing and Inspection

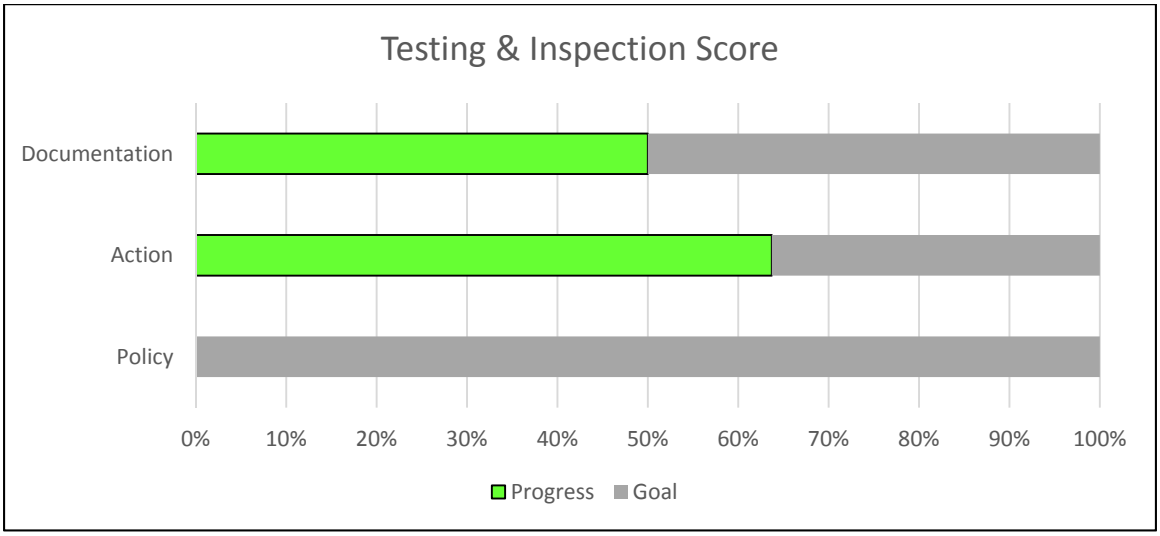


Figure 5-9. Testing & Inspection Score

9. Testing & Inspection		Response count			Totals	
	Max Points Possible	No - 0 points each	Partial- 1 point each	Yes-2 points each	Total Score	Percent
Policy	2	1	0	0	0	0%
Action	124	3	39	20	79	64%
Documentation	4	1	0	1	2	50%

Deficiencies found include but are not limited to:

- Missing 2014 annual and semiannual safety device inspections.
- Of the six devices tested by BEI in conjunction with boiler plant personnel, four were compliant as found and two failed but were repaired.
- In several instances, the contractor would declare a device as passed, even when test results did not meet all VA Safety Device Testing Manual 3rd Edition requirements. (See Appendix A for complete details). There is no site specific testing procedure.

General Notes and information:

- The plant has begun semiannual an annual testing and inspections.
- Corrective actions are being implemented on the deficiencies found in the inspections. However, the actions must be documented to ensure there is supporting information.
- The program needs a tracker or schedule that will ensure that testing and inspection is done at the frequency required.
- The program needs a tracking system for deficiencies to ensure they are corrected and documented appropriately.

- The program would benefit significantly from a process where in the semiannual testing is either conducted by the facility or the facility is directly involved with the contractor on each item. The system should still require a third party annual inspection.
- NOTE: Currently, safety device testing is being conducted via contractor. Upon reviewing contractor documentation of past testing, some deficiencies were noted. In several instances, the contractor would declare a device as passed, even when test results did not meet all VA Safety Device Testing Manual 3rd Edition requirements. No clear documentation was found to show the devices were failed repaired. If a device does not pass all criteria in the 3rd Edition testing manual, then the device should be recorded as a failure. Also an instance was found were a complete device test was documented and passed, but the device did not exist on the boiler. The device in question is the furnace pressure switch. The boilers at Lebanon, PA do not require or currently have a furnace pressure switch. In this case the contractor should have noted this in the comments rather than passing a device that doesn't exist.

5.12 TESTING BOILER INFORMATION

Boiler # 1	
Manufacturer:	Cleaver Brooks
Model:	D-52
Serial #: National Board No.:	WL-1770
Typical Operating Pressure:	110 psig
Date of Manufacture:	1971
Design Pressure/Capacity:	260 psig / 20,000 lb./hr
Burner	
Manufacturer:	Cleaver Brooks
Fuels:	Gas / #2 Fuel Oil

Comments:

A new boiler plant project is underway.

5.13 Additional Safety Testing / Training Done

Training Summary:

During the review, the opportunity arose to train Lebanon Boiler Plant Personnel on properly testing boiler safety devices. Training was only conducted on the six devices selected for the survey. Lebanon Boiler Plant Supervisor Chris Hrones and USRO Jose participated in the training conducted by Chase O'Mary of BEI. Both participants seemed eager and capable of performing the safety device testing. Jose performed all six tests under BEI guidance and demonstrated a willingness and ability to take on a bigger role in future safety device testing. The training session concentrated on the Four Questions as found in the Safety Testing Manual 3rd Edition as criteria to evaluate both contractor testing procedure and in house testing procedure. Lebanon personnel demonstrated an understanding and application of the Four Questions in the session conducted on site, however BEI feels additional training is required to ensure fully compliant in house safety device testing.

5.14 Exit Meeting with VAMC Management

Below is a summary of the exit meeting with VAMC management. In this meeting, the contractor summarized the findings and recommendations gathered throughout the review session.

Name (Please Print)	Title / location
Linda Umberger RN	Executive Assistant to Director
Vince Kane	Associate Director
Margret Wilson	Assoc. Director Patient Care Services
Anthony Slovinski MD	Chief of Staff
Thad Kocuba	Facilities Manager
Boyd Martin	Maintenance Supervisor
Doug Ryan	VACO – Review team
Mike Reed	VACO – Review team
Vince Rizzio	VACO – Review team
Rob Engle	BEI - Review team

Exit Meeting Summary:

The Director was sorry, but was not able to make this meeting. The representatives from VACO started with a statement that the plant was safe and well maintained. The staff was a pleasure to work with over the course of the boiler plant review. There were no major testing problems, but there were a few things that need to be addressed. The benefit of internal mentoring for the boiler plant supervisor by management was discussed.

The facility made the statement that they were going to make a strong commitment to develop SOP's as required by the directive. This project had already begun by the time of the exit meeting.

Creating a system of checks and balances for the quarterly compliance report was discussed. It was also suggested that the chief engineer and the boiler plant supervisor be part of the system of approval for the quarterly compliance report.

There is a need for a big picture long term training program. This could include sending operators to school, bringing vendors in, etc.

There was a discussion about the Boiler plant supervisor creating a budget for himself. This would help him deal with expediting the money for a large purchase. $5,000 valve, a $3,000 instrument, etc.

We discussed creating electronic records for all boiler plant records and creating records for the repair of boiler safety failures.

Involving the boiler plant personnel in the vendor semiannual and annual boiler safety testing was discussed at length. Suggestions included having the operators shadow the vendor to verify the testing is done correctly and to help them learn the process. In the future the facility may consider doing the semiannual testing and contracting the annual testing if the facility deems the operator qualified to do the testing.

The facility thanked the review team for their time and their consultations. They stated that this review got the details they needed and it created a platform to have some candid conversations about potential improvements in the system. The facility said strongly that “we will act on them”.

6 SAFETY TESTING (PARTIAL SURVEY)

Safety Test	Procedure Not Adequate	Issue last Inspection	Compliant as found	Failed Repaired	Failed Not Repaired
Low Fire Proving Switch (Air)	☐	☐	☒	☐	☐
Comments: Switch made within 5% of low fire position.					

Safety Test	Procedure Not Adequate	Issue Last Inspection	Compliant as found	Failed Repaired	Failed Not Repaired
Low Fire Proving Switch (Gas)	☐	☐	☒	☐	☐
Comments: Single Point Position Control only requires one low fire proving switch					

Safety Test	Procedure Not Adequate	Issue Last Inspection	Compliant as found	Failed Repaired	Failed Not Repaired
Purge Airflow Proving Switch	☐	☐	☒	☐	☐
Comments: Switch made within 80% of highest measured pressure difference across the boiler.					

Safety Test	Procedure Not Adequate	Issue Last Inspection	Compliant as found	Failed Repaired	Failed Not Repaired
Combustion Air Pressure Switch	☐	☐	☒	☐	☐
Comments: Switch broke within 80% of minimum pressure differential.					

Safety Test	Procedure Not Adequate	Issue Last Inspection	Compliant as found	Failed Repaired	Failed Not Repaired
Low Gas Pressure Switch	☐	☐	☐	☒	☐
Comments: Trip point was found to be below 80% of regulated gas pressure. Switch was adjusted and re-tested by in house boiler personnel.					

Safety Test	Procedure Not Adequate	Issue Last Inspection	Compliant as found	Failed Repaired	Failed Not Repaired
High Gas Pressure Switch	☐	☐	☐	☒	☐
Comments: Trip Point was found to be above 120% of regulated pressure. Switch was adjusted and re-tested by in house boiler personnel.					

7 GENERAL NOTES

8 APPENDIX A – FIELD NOTES FROM INSPECTION

GUIDELINES FOR ASSESSING MEDICAL CENTER'S BOILER PLANT PROGRAM

Site: Lebanon, PA VAMC **Program Review Date:** January 28-30, 2015

Question	Eval Category	Chief Engineer / B. P. Super / Safety Champior / Operators / BEI Staff Evaluation / Hosp Director / union		0 No	1 Part	2 Yes
Category 1 - Management:						
In general, how does the Medical Center approach the important issues that deal with the boiler plant?						
1-1p	**p**	E S C D U	Are there written Medical Center or engineering policies that specify a systematic way to address safety device deficiencies in the boiler plant?	X		
1-1a	**a**	E S C D U	Are safety device deficiencies in the boiler plant, systematically dealt with in a timely manner? (1-2 months). If not site the evidence that this issue has been elevated to the next higher level for action (Chief Engineer, EOC Committee, local resource board, director, VISN)		X	
1-1d	**d**	E S C D U	Are safety device deficiencies tracked to completion in writing with an estimated completion date regardless of cost on a regular and recurring basis? If yes, what mechanism?	X		

Comments:

There is no written policy in place to deal with safety device deficiencies. According to management and staff, when safety device deficiencies are found, they are addressed and fixed immediately. Management and staff also report that if there is any issue in remedying the deficiency, it is reported in the morning meeting.

However, boiler plant safety testing was not done in 2014. Reportedly, the Hospital director was not made aware.

1-2p	**p**	E S D U	Is there a policy and SOP in place for training new employees?			X
1-2a	**a**	E S D U	Are all new employees trained and deemed competent by the Boiler Plant Supervisor and Chief Engineer?		X	
1-2d	**d**	E S D U	Is training of new employees documented in writing? When a new employee is deemed competent, is this signed by BP Supervisor and Chief Engineer?		X	

Comment:

There is a SOP in place. Operators are trained using this SOP. However, the Chief Engineer is not involved in approving the new employees competent.

1-3a	**a**	E S C D U	Does the Directors office approve the quarterly compliance survey? Is there a mechanism to verify its accuracy?			X
1-3a	**a**	E S C D U	Does the Chief Engineer verify and approve the quarterly survey?	X		
1-3a	**a**	E S C D U	Does the Boiler Plant Supervisor verify and approve the quarterly survey?	X		

Comments:

The directors office does approve the quarterly compliance survey, however, there is no mechanism in place to verify the results.

Reportedly, the Chief Engineer does not review the quarterly compliance report.

Reportedly, the Boiler plant supervisor does not review the quarterly compliance report.

Category 2 - Directive 2008-062:				0	1	2
Is there evidence that the chief engineer, boiler plant supervisor/leader and boiler plant operators are familiar with and have acted upon the current Boiler Plant Operations Directive (2008-062)? Is it actively enforced? What is this evidenced by?				**No**	**Part**	**Yes**
2-1d	**d**	S	Review the facility's quarterly compliance survey posted on CEOSH's Web site: http://vaww.ceosh.med.va.gov/01HE/Pages/DataReports.shtml#Boiler). Is it accurate?	X		
Comments: There are several places in the quarterly report where the information is inaccurate. For example question (2A, 2B, 6A, 6B)						
2-2p	**p**	E S C O D	Is there a policy and SOP in place for notifying the Medical Center Director when a boiler safety is non-functioning?	X		
2-2a	**a**	E S C O D	Is the Medical Center Director notified when any boiler safety device is non-functioning, and as a result of the non-functioning safety device/s are interim safety measures put into place and changes to procedures assessed and required due to the non-functioning safety device or device failure?		X	
2-2d	**d**	E S C O D	Are the notification and interim safety measures documented in writing and updated when repairs have been made?	X		
Comments: According to management, this information is being communicated during the morning meetings. However, the missing year of safety testing implies that this system is not complete.						
2-3p	**p**	E S C O	Is there a policy and SOP in place for reviewing daily logs?	X		
2-3a	**a**	E S C O	Are daily logs reviewed and actions taken as necessary? Cite evidence.			X
2-3d	**d**	E S C O	Is there a systematic record of this review?		X	
Comments: The log book looks great and appropriate action has been taken on several recent issues. Evidence found includes: fixing leaking valves and broken pipes. However, there is no SOP or documentation of who reviewed the logs and when. The system is unwritten but does appear to be systematic.						

2-4p	**p**	S O	Is there a lone soul policy and SOP in place for performing safety checks on boiler plant staff?			X
2-4a	**a**	S O	Are safety checks performed and documented by police multiple times per shift on each shift. (maybe via phone, two-way radio, etc.)?			X
2-4d	**d**	S O	Is there record of these safety checks being performed?			X
Comments: The lone soul policy looks very good. There is a policy in place and safety checks are performed hourly by a service automatically. The information from the checks is reportedly available from the service provider.						
2-5p	**p**	S C O	Is there a policy in place to update the single line diagrams of the boiler plant when changes occur?	X		
2-5a	**a**	S C O	Are single line diagrams of the boiler plant equipment and connected loads current and up to date?		X	
2-5d	**d**	S C O	Is there a document that contains the current revision dates for all boiler plant drawings.	X		
Comments: The only single line diagrams that could be found were from the original installation of the plant (circa 1971).						
2-6p	**p**	E S C O	Is there a policy for providing and testing emergency power to the boiler plant?			X
2-6a	**a**	E S C O	Is there evidence that emergency power system is regularly tested under load?			X
2-6d	**d**	E S C O	Is there several years of documentation of the boiler plant emergency power being tested?			X
Comments: The is a policy for testing the emergency power. It was last tested May 2014 under load for 4 hours.						

2-7p	**p**	E S C O	Is there a policy for providing and testing the emergency water source to the boiler plant?	X		
2-7a	**a**	E S C O	Is there an emergency water source provided for the boiler plant?			X
2-7d	**d**	E S C O	Is there several years of documentation of the boiler plant emergency water source being tested?	X		

Comments:

There are two city main feeds and a water tower. Operators are familiar with the valves necessary to select the appropriate water source. However emergency water specifications should be added to SOP 4.03

2-8p	**p**	E S C O	Is there a policy for providing and testing the emergency fuel source to the boiler plant?	X		
2-8a	**a**	E S C O	Is the emergency fuel source to the boiler plant tested monthly on every boiler?		X	
2-8d	**d**	E S C O	Is there at least a year of documentation of monthly testing of the emergency fuel source?	X		

Comments:

No testing of the alternate fuel has been done. There is no procedure in place. However, this site has begun the monthly testing of backup fuel as of January 2015.

2-9p	**p**	E S C	Is there a policy in place to have current site specific safety device testing procedures in place?	X		
2-9a	**a**	E S C	Do they have written safety device testing procedures specific to their site?		X	
2-9d	**d**	E S C	Is there a change log / record of all past safety device testing procedures as well as the current procedure on file?	X		

Comments:

This site is using the Current Safety testing manual 3rd edition as stock. The new directive will require site specific procedures.

Category 3- Training				0	1	2
Is the on-going boiler plant operator training evidenced by?				No	Part	Yes
3-1p	p	S C O	Are there current written SOPs for training operators on the operation of boiler plant equipment?	X		
3-1a	a	S C O	Have operators been trained on the operation of the boiler plant equipment?			X
3-1d	d	S C O	Is there documentation of operator training on boiler plant equipment?		X	
Comments:			There is a verbally communicated understood procedure, but they do not train by written documented procedures. They train ad-hoc. Some procedures are documented but they do not have an adequate documentation library to conduct training from.			
3-2p	p	S C O	Are there current written SOPs describing how to train operators on emergency situations?	X		
3-2a	a	S C O	Are the operators trained yearly in handling emergency situations?		X	
3-2d	d	S C O	Is there documentation for each operator in handling emergency situations? (Yearly)	X		
Comments:			Again training is ad hoc. No official documentation to train personnel.			
3-3p	p	S C O	Is there a policy requiring operators be trained in the following: OSHA, MSDS, Boiler Plant Operations SOPs, electrical safety (Lockout-Tag out), call back procedures, and emergency procedures?		X	
3-3a	a	S C O	Have all operators been trained in the following: OSHA, MSDS, Boiler Plant Operations SOPs, electrical safety (Lockout-Tag out), call back procedures, and emergency procedures?		X	
3-3d	d	S C O	Is there documentation that operators have been trained in the following: OSHA, MSDS, Boiler Plant Operations SOPs, electrical safety (Lockout-Tag out), call back procedures, and emergency procedures? Verify in TMS.		X	
Comments:			A policy is in place but not written. There is no electrical policy/procedure in place. Documentation in not current.			

Category 4- Parts and Supplies				0	1	2
				No	Part	Yes
4-1p	p	S C O	Is there a written policy that addresses having common parts in stock?	X		
4-1a	a	S C O	Is there an adequate stock of most common parts?			X
4-1d	d	S C O	Is there a current inventory list and parts supplier list for the common parts.	X		

Comments:

No written SOP for acquiring materials of any price. Personnel noted difficulty in obtaining items over $2500. No evidence of tracing information, documentation for parts.

4-2p	p	S C O	Is there a written policy that addresses having emergency parts in stock?	X		
4-2a	a	S C O	Is there an adequate stock of emergency parts?			X
4-2d	d	S C O	Is there a current inventory list and parts supplier list for emergency parts?	X		

Comments:

No written policy fir acquiring emergency parts. No documentation of emergency inventory.

4-3a	**a**	S C O	Is the parts storage area organized and accessible?			X
Comments:			Yes, the parts room looks great and is nicely organized.			
4-4p	**p**	E S C O	Is there a SOP for acquiring needed materials for the boiler plant (less than and more than $2,500)?		X	
4-4a	**a**	E S C O	Are all needed materials acquired in a timely manner? If not explain why (what are the problems)?		X	
4-4d	**d**	E S C O	Is there tracing information, documentation and an estimated time of arrival for parts ordered through contracting?	X		
Comments:			No written SOP for acquiring materials of any price. Personnel noted difficulty in obtaining items over $2500. No evidence of tracing information, documentation for parts. It was also noted that the facility struggles to get the specific part they need. It is reported that purchasing will search out and purchase cheaper replacement parts without consulting the plant.			

Category 5- References				0	1	2
				No	Part	Yes
5-1d	**d**	E	Is a hard copy of VA Boiler Plant Directive 2008-062 on hand or bookmarked and readily available on the computer in the boiler plant?			X
Comments:			Yes, there is a link on the computer.			
5-2d	**d**	S C O	Are written *emergency* operating procedures available to operators on all shifts (not locked in office)?		X	
Comments:			Yes, but there is not a complete inventory of all needed emergency operating procedures. Also, most of the EOPs are out of date.			
5-3d	**d**	S C O	Are written *normal* operating procedures available to operators on all shifts (not locked in office)?		X	
Comments:			Yes, but there is not a complete inventory of all needed normal operating procedures. Also, the normal operating procedures are out of date.			
5-4d	**d**	S C O	Are manufacturer's instructions for all major equipment: boilers, burners, burner management controls, pumps, deaerator, water softener, emergency generator, combustion controls, instrumentation, and schematic boiler control wiring diagrams for troubleshooting readily available?			X
Comments:			Yes			
5-5d	**d**	S C O	Are records of the last safety device testing inspection, and internal and external inspection of boiler vessels readily available?			X
Comments:			Yes			

Category 6- Records				0	1	2
				No	Part	Yes
6-1p	p	S C O	Is there a policy or SOP for the calibration of temperature indicators and pressure gages used in the boiler plant (boiler pressure, deaerator pressure and temperature, etc.)?	X		
6-1a	a	S C O	Are instruments calibrated every 6 months and gauges and temperature indicators every year?		X	
6-1d	d	S C O	Is there a log of calibration dates for temperature indicators and pressure gages used in the boiler plant (boiler pressure, deaerator pressure and temperature, etc.)?		X	
Comments: New calibration program to start in March.						
6-2p	p	S O	Is there a policy or SOP for the collection and review of daily plant operating logs?	X		
6-2a	a	S O	Are daily plant operating logs (steam produced, fuel used, flue gas oxygen, flue gas temperature, steam pressure, deaerator temperature and pressure, other data) being properly collected with hourly readings and operating notes?			X
6-2d	d	S O	Are daily plant operating logs (steam produced, fuel used, flue gas oxygen, flue gas temperature, steam pressure, deaerator temperature and pressure, other data) being maintained with hourly readings and operating notes?			X
Comments: Excellent operating logs and documentation, but no written policy.						

6-3d	**d**	S C O	Are boiler inspection reports for current year and past two years readily available?	X		
Comments:			Past year (2013) is missing.			
6-4d	**d**	S C O	Is there evidence that deficiencies listed in the boiler inspection reports or burner and interlock testing reports have been corrected?		X	
Comments:			There is evidence deficiencies are addressed by yearly report but there is no official documentation of repair/correction.			
6-5d	**d**	S O	Is there evidence that emergency power system is regularly tested under load?			X
Comments:			Yes, this is done monthly.			

Category 7 - Physical Observations of Boiler Plant				0	1	2
How often do you visit the plant, walk around and visit with operators (all shifts)				No	Part	Yes
7-1	a	S B	Are the steam safety valve vents discharged outside?			X
Comments:						
7-2	a	B	Are water level gage glasses and sight flow indicators clean on boilers, de-aerator, condensate storage tank, blow-off tank and other equipment?			X
Comments:						
7-3	a	B	Are boiler water level gage glasses and pressure gages easily visible from main floor in front of boilers?			X
Comments:						
7-4	a	S B	Are electrical and control cabinets closed and locked and all breakers properly labeled?	X		
Comments:			No current electrical policy is in place.			
7-5	a	O B	How is the overall cleanliness of the boiler plant?			X
Comments:			The boiler plant is very clean.			
7-6	a	O B	Do the boiler plant operators work well together? (As a team)			X
Comments:			The operators appear to work well together. Shift change appears to be friendly and professional.			

Category 8 - Facility Condition Assessment (FCA)				0	1	2
				No	Part	Yes
8-2	a	E S	In the FCA, are all items graded A,B, or C? (NOTES -for comments only: if not how many items are graded D and/or F? Are there construction projects identified for corrections (Major, Minor, NRM Station Level) to identify these issues?)			X
Comments: Getting new Boiler plant. Construction to start soon.						
8-3	a	E S	Are there construction projects identified for corrections (Major, Minor, NRM, Station Level) to identify these issues?			X
Comments: New Boiler Plant project is approved and slated to start construction in the near future.						

Category 9 - Testing and Inspection				0	1	2
Are inspections and testing conducted in accordance with the following frequencies?				**No**	**Part**	**Yes**
9-0	**a**		Does your Qualified Professional Inspector (QPI) meet the minimum criteria?			X

a. **Key to Frequency Abbreviations**

(1) H = Hourly.

(2) D = Daily. **VHA DIRECTIVE 2008-062 CORRECTED COPY October 15, 2008 B-2**

(3) M = Once per month.

(4) 6M = Once every 6 months.

(5) Y = Once per year.

(6) 6Y = Once every 6 years.

9-1	**a**	S C	(1) High pressure boilers (above 15 psig): Inspect furnace and other internal surfaces, closures and accessories. Y		X	
Comments:			Missing 2013 (Atlantic services)			
9-2	**a**	S C	(2) High pressure boilers (above 15 psig): Inspect exterior of Unit, casing, supports, closures, accessories, valves, controls. Y		X	
Comments:			Missing 2013 (Atlantic services)			
9-3	**a**	S C	(3) Deaerator: Inspection and wet magnetic particle testing of welds of pressure vessel interior. 6Y			X
Comments:			Done in 2013			
9-4	**a**	S C	(4) Boiler fouling and combustion gas flow check. Y		X	
Comments:			No fouling in 2012 and 2014. Missing 2013.			
9-5	**a**	S C	(5) Tube leak check. Y		X	
Comments:			Missing 2013.			

NOTE: *The items preceding (2b(1) through 2b(5) must be accomplished by a Qualified Professional Inspector. The following items (2b(6)) through 2b(13))*

9-6	**a**	S C	(6) Low pressure boilers (15 psig and below): inspect interior and exterior, supports, closures, accessories, valves, and controls. Y			
Comments:			N/A			
9-7	**a**	S C	(7) Deaerator: interior cleaning and visual inspection. Y	X		
Comments:			This has never been done. Plan to start this summer.			
9-8	**a**	S C	(8) Adjust burner combustion settings and calibrate oxygen trim. 6M			X
Comments:			Done every 6 months.			
9-9	**a**	S C	(9) Check vibration of burner fans. 6M	X		
Comments:			Has never been done.			
9-10	**a**	S C	(10) Calibrate instrumentation, monitoring, and control systems. 6M			X
Comments:			Yes			
9-11	**a**	S C	(11) Calibrate pressure gages and thermometers. Y			X
Comments:			Yes			

(I2) Operational Testing of Boiler Safety Devices, such as:						
9-12a	**a**	S C	(a) Low-water cutoff (slow drain) M			X
Comments:			Yes. Done on boilers 1,2,&3.			
9-12b	**a**	S C	(b) Fire each boiler and the pilot on the alternate fuel for 1 hour M		X	
Comments:			This has not been done in a few years. Restarted the process In January 2015.			
9-12c	**a**	S C	(c) Low-water cutoff shunt switch M			X
Comments:			Yes			
9-12d	**a**	S C	(d) Auxiliary low-water cut-off (slow drain) M			X
Comments:			Yes			
9-12e	**a**	S C	(e) Auxiliary low-water cut-off shunt switch M			X
Comments:			Yes			
9-12f	**a**	S C	(f) High-water alarm M			X
Comments:			Yes			

9-12g	**a**	S C	(g) Low-water alarm M			X
Comments:			Yes			
9-12h	**a**	S C	(h) High-steam pressure cut-out (recycle) 6M		X	
Comments:			Missing 2014. Has 2012 and 2015.			
9-12i	**a**	S C	(i) High-steam pressure cut-out (non-recycle) 6M		X	
Comments:			Missing 2014, but corrected.			
9-12j	**a**	S C	(j) Steam safety valves (raise boiler pressure until valve pops) 6M		X	
Comments:			Reset pressures are very close to ASME, but they are out of ASME tolerances.			
9-12k	**a**	S C	(k) Steam safety valves (accumulation test at high fire) Y			X
Comments:			Yes			
9-12l	**a**	S C	(l) Flame scanner M	X		
Comments:			This test is done semiannually, but is not done monthly as required.			
9-12m	**a**	S C	(m) Check gas vent for leaks 6M		X	
Comments:			Yes			

9-12n	**a**	S C	(n) High-gas fuel pressure cut-off 6M		X	
Comments:			Yes			
9-12o	**a**	S C	(o) Low-gas fuel pressure cut-off 6M		X	
Comments:			Yes			
9-12p	**a**	S C	(p) Gas fuel safety shut off valves proof of closure 6M		X	
Comments:			Yes			
9-12q	**a**	S C	(q) Leak test gas fuel safety shut off valves 6M		X	
Comments:			Failed last inspection. It works now.			
9-12r	**a**	S C	(r) High-fuel oil temperature cut-off (heated fuel) 6M			
Comments:			N/A			
9-12s	**a**	S C	(s) Low-fuel oil temperature cut-off (heated fuel) 6M			
Comments:			N/A			
9-12t	**a**	S C	(t) Low-atomizing pressure for fuel oil 6M		X	
Comments:			OK.			

9-12u	**a**	S C	(u) High-fuel oil pressure cut-off 6M		X	
Comments:			Yes			
9-12v	**a**	S C	(v) Low-fuel oil pressure cut-off 6M		X	
Comments:			Yes			
9-12w	**a**	S C	(w) Fuel oil safety shut off valves proof of closure 6M		X	
Comments:			Yes			
9-12x	**a**	S C	(x) Leak test fuel oil safety shut off valves 6M		X	
Comments:			Yes			
9-12y	**a**	S C	(y) Check operation of Liquid Petroleum Gas pilot 6M		X	
Comments:			Yes			
9-12z	**a**	S C	(z) Low-pilot gas pressure cut-out 6M		X	
Comments:			Trip Point was documented to be below 80% of regulated pressure but device was still passed.			
9-12aa	**a**	S C	(aa) Forced draft fan motor interlock 6M		X	
Comments:			Yes			

9-12bb	**a**	S C	(bb) Forced draft fan damper wide open for purge 6M		X	
Comments:			Yes			
9-12cc	**a**	S C	(cc) Boiler outlet damper wide open for purge 6M		X	
Comments:			Yes			
9-12dd	**a**	S C	(dd) Purge air flow interlock 6M		X	
Comments:			Yes			
9-12ee	**a**	S C	(ee) Timing for pre-purge 6M		X	
Comments:			Yes			
9-12ff	**a**	S C	(ff) Timing for post-purge 6M		X	
Comments:			Yes			
9-12gg	**a**	S C	(gg) Igniter timing 6M		X	
Comments:			Yes			
9-12hh	**a**	S C	(hh) Low fire position interlock 6M		X	
Comments:			Yes			

9-12ii	**a**	S C	(ii) Combustion air interlock 6M		X	
Comments:			Yes			
9-12jj	**a**	S C	(jj) Main flame out; i.e., time to close valves 6M		X	
Comments:			Yes			
9-12kk	**a**	S C	(kk) Ignition flame out; i.e., it is time to close valves 6M		X	
Comments:			Yes			
9-12ll	**a**	S C	(ll) Minimum igniter flame test 6M		X	
Comments:			Yes			
9-12mm	**a**	S C	(mm) Scanner not sensing ignition spark 6M		X	
Comments:			Yes			
9-12nn	**a**	S C	(nn) Low-oxygen alarm and/or cut-out 6M		X	
Comments:			Yes			
9-12oo	**a**	S C	(oo) Pre-purge setting of flue gas recirculation damper 6M			
Comments:			N/A			
9-12pp	**a**	S C	(pp) Interlock of building outside air damper with burner control 6M		X	
Comments:			Adequate fixed openings.			

NOTE: *The preceding safety devices are essential for ensuring the safest possible operation. Any boilers not so equipped must be immediately programmed*

(13) Boiler Plant Safety and Operational Duties

9-13a	**a**	S C O	(a) Overall plant operation H		X	

Comments:

Operators work well together and have good general boiler plant knowledge. Policies and procedures are missing and need updating. Water treatment program is excellent. The physical condition of the plant is well maintained and very clean.

9-13b	**a**	S C O	(b) Blowdown water columns D			X

Comments:

This is done at 8:00AM every morning. Operators report doing two 15 second blowdowns. Not tracked in shift log. Add to shift log.

9-13c	**a**	S C O	(c) Testing and adjusting water treatment D			X

Comments:

Excellent.

9-13d	**a**	S C O	(d) Check furnace pressure 6M			X

Comments:

Furnace pressure is recorded during the boiler tuning.

9-13e	**a**	S C O	(e) Check combustion gas leaks into boiler room 6M			X

Comments:

9-13f	**a**	S C O	(f) Clean waterside of boilers Y		X	
Comments: Missing 2013. Scheduled to be performed this summer.						
9-13g	**a**	S C O	(g) Clean fireside and repair refractory Y		X	
Comments: Missing 2013. Scheduled to be performed this summer.						
9-13h	**a**	S C O	(h) Operation of deaerator high and low water alarms M			X
Comments:						
9-13i	**a**	S C O	(i) Operation of deaerator steam pressure or temperature control M			X
Comments:						
9-13j	**a**	S C O	(j) Operation of condensate storage tank high and low water alarms M			X
Comments:						

9-13k	**a**	S C O	(k) Operation of all other alarm devices M			X
Comments:						
9-13l	**a**	S C O	(k) Operation of boiler economizers; temperatures in or out D			
Comments:			N/A			
9-13m	**d**	S C	(m) Review written procedures 6M	X		
Comments:			Very few written procedures in place.			
9-14p	**p**	E S C O	Is there a Policy and SOP for annual and semi-annual safety testing on each boiler?	X		
9-14a	**a**	E S C O	Is testing being conducted properly and in accordance with the directive / policies?		X	
9-14d	**d**	E S C O	Is the documentation of the annual and semi-annual being done properly and are several years of data on file?			X
Comments:			No safety testing was conducted by contractor in 2014. Only monthly in house checks were performed. Suggest filling out 3rd Edition test procedure sheets for in house documentation of monthly tests.			

Category 10 - Tracer Activity			0	1	2
Safety Device Failure - Steps to review from failure to functioning:			**No**	**Part**	**Yes**
10-1	S C O	a) Did failure cause any adverse events? If yes, who was notified, how and when?			
10-2	E S C	b) How was failure communicated to all operators (check daily logs), Chief Engineer (email, face to face) and director (email, face to face)?			
10-3	E S C O	c) Was the failure evaluated and procedures changed to limit risk until correction was made?			