



EAST TENNESSEE STATE UNIVERSITY

Facilities Management Boiler Variance Policy

Policy Number: 1200.01

Title: Boiler Variance Policy

Implementation Date: May 17th, 2021

Background

The boiler system, located at the Power House Building, consists of four natural gas fired high pressure boilers with #2 fuel oil as a backup. The boilers are equipped with their own microprocessor based internal controls that can be monitored remotely through an alarm panel that has been installed at Public Safety Dispatch. This remote alarm panel allows public safety dispatchers to shut down a boiler that initiates an alarm signal. This system of remote monitoring is part of our boiler variance, obtained from the Tennessee Boiler Division, that will allow boiler operators to leave the Power House building up to 4 hours.

Purpose

The purpose of this policy is to detail the procedures for complying with the boiler variance, which was approved by the Boiler Division of the State of Tennessee. The boiler variance provides for boiler operators to leave the Power House building for up to 4 hours, allowing them to accomplish additional responsibilities that will improve the response capability of Facilities Management.

Policy Statement

ETSU will comply with all of the requirements of the boiler variance that was approved by the Boiler Division of the State of Tennessee. The procedures enumerated in this policy fulfill the regulatory requirements of the approved boiler variance.

Procedures for Boiler Attendants

Personnel Type

The Boiler Attendant is a trained individual who is designated to operate or monitor the boiler. The Boiler Attendant is classified by ETSU as one of the following:

1. Maintenance Worker
2. Boiler Operator
3. Boiler Mechanic 2

4. Manager

Training

1. The Boiler Attendants shall be familiarized with the emergency procedures through daily actuation of the alarm circuits for the boiler.
2. Boiler Emergency Procedures shall be kept in the Boiler Room and in the Plant Control Room. New personnel assigned to the boiler operation will be required to read and be familiar with these procedures. Documentation of all training shall be kept on file by the Director of EH&S through the use of Talent Learning Management System (LMS).
3. Boiler Attendants will receive eight (8) hours training on the operation of the boiler and demonstrate proficiency through a qualification test. Annually, Boiler Attendants will receive four (4) hours of refresher training.
4. The Facilities Maintenance Manager is responsible for training.

Normal Daily Duties

1. Boiler Attendants shall report to the boiler room at the beginning of each shift and shall perform routine daily tests and maintenance requirements.
2. Boiler Attendants shall contact the remote station at the Public Safety Dispatch Office and then cause a test fault to the remote panel to verify proper operation for each operating boiler. If the system is not functioning properly, a Boiler Attendant shall repair the boiler in accordance with Tennessee Boiler and Unfired Pressure Vessel Inspection Law, Rules and Regulations paragraph 0800-3-3-.04 (11) until the problem is corrected.
3. Boiler Attendants will perform a radio check of the two-way cellular phones to verify communications with Public Safety Dispatch.
4. Upon satisfactory tests of the remote annunciation systems, the Boiler Attendant may then proceed to perform other scheduled duties.
5. Boiler Attendants shall remain on campus at all times.
6. A Boiler Attendant shall return to boiler room every four (4) hours to verify normal boiler operation and shall log the visit on the Boiler Daily Log form contained in Appendix A.
7. At the end of the shift, a Boiler Attendant shall report to the boiler room to verify normal boiler operation.
8. While the boilers are in operation, the boiler attendant on duty shall not leave the Campus until relief personnel are on site.

Emergency Duties

1. During a shift, if an alarm condition occurs, the boiler controller will simultaneously shut down the boiler and annunciate at the remote station in the Public Safety Dispatch Office.
2. Upon receipt of an alarm, the remote station personnel shall read and perform in sequence the instructions on the placard attached to the remote panel.
3. A PUBLIC SAFETY DISPATCHER SHALL SHUT DOWN THE ALARMED BOILER

- FROM THE REMOTE PANEL AND NOTIFY THE BOILER ATTENDANT THAT THE BOILER HAS BEEN SHUTDOWN.
4. Upon notification of an alarm, the Boiler Attendant shall contact the Public Safety Dispatcher to acknowledge the alarm and proceed to the boiler room. When he confirms it is safe, he shall enter the boiler room to take appropriate action.
 5. Boiler Attendants shall log alarm problems and their resolution on the Boiler Attendant Alarm Log sheet, contained in Appendix B, for the period during which the alarm occurred.

Procedures for Public Safety Dispatchers - Remote Monitoring Personnel

Personnel Type

The remote station will be continuously manned by Public Safety Dispatchers who have demonstrated experience with monitoring equipment, warning systems and who's only responsibilities are monitoring campus systems.

Training

Personnel responsible for reacting to boiler alarms will be instructed about the emergency procedures. Furthermore, those emergency procedures will be placarded and affixed adjacent to the remote panel.

1. The personnel shall be familiarized with the emergency procedures through frequent actuation of the alarm circuits for the operating boiler. A copy of this System Operation Manual shall be kept at the remote station and in the boiler room. Newly assigned personnel will be required to read and be familiar with these procedures. Each employee will be required to pass a qualification test to be a Remote Boiler Attendant. The Facilities Maintenance Manager is responsible for the training. Documentation of all training shall be kept on file by the Director of EH&S through the use of Talent LMS.
2. Public Safety dispatchers will receive initial training and annual refresher training. New Public Safety Dispatchers will be required to read and familiarize themselves with the manual.

Normal Operations

1. Once per shift (three 8-hour shifts per day) the Boiler Attendant on duty will contact the remote station (Public Safety Dispatch).
2. Upon contact, the Boiler Attendant will initiate an alarm on the remote panel for the operating boiler.
3. The Boiler Attendant will perform a communication check of the two-way cellular phone system to verify communications with the remote station.

Emergency Duties

1. During a shift, if an alarm condition occurs, the boiler controller will simultaneously shut down the boiler and annunciate at the remote station.
2. Upon receipt of an alarm, the on-duty Public Safety Dispatcher shall read and perform in sequence the instructions on the placard described in the dispatcher training section of this policy. **THE PERSON ON-DUTY AT THE REMOTE STATION SHALL SHUT DOWN THE ALARMED BOILER FROM THE REMOTE PANEL.**
3. Upon notification of an alarm, the Public Safety Dispatcher shall contact the Boiler Attendant to acknowledge the alarm within one (1) minute. If the remote station personnel are unable to communicate with the Boiler Attendant, then they shall attempt to notify other individuals on the Emergency call list.
4. When the alarm condition is cleared, the Boiler Attendant shall contact the Public Safety dispatcher and the shutdown switch shall be reset and the boiler restarted by the Boiler Attendant.

Contact Persons

Facilities Director
Director of Environmental Health and Safety
Maintenance Manager

Approved by: Laura Bailey
Laura Bailey, Associate Vice President, Facilities Management

Date approved: 5-20-21

APPENDIX A

BOILER DAILY LOG SHEET

DATE: _____

| | TIME OF DAY | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|-----|------------------------|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| "A" | FUEL TYPE (GAS or OIL) | | | | | | | | | | | | | | | | | | | | | | | | |
| "B" | FLAME INTENSITY | | | | | | | | | | | | | | | | | | | | | | | | |
| "C" | FLUE GAS OXYGEN | | | | | | | | | | | | | | | | | | | | | | | | |
| "D" | FLUE GAS STACK TEMP | | | | | | | | | | | | | | | | | | | | | | | | |
| "E" | AMBIENT AIR TEMP | | | | | | | | | | | | | | | | | | | | | | | | |
| "F" | MODULATION RATE | | | | | | | | | | | | | | | | | | | | | | | | |
| "G" | STEAM LOAD | | | | | | | | | | | | | | | | | | | | | | | | |
| "H" | STEAM PRESSURE | | | | | | | | | | | | | | | | | | | | | | | | |
| "I" | WATER LEVEL | | | | | | | | | | | | | | | | | | | | | | | | |
| "J" | | | | | | | | | | | | | | | | | | | | | | | | | |
| "K" | BURNER GAS PRESSURE | | | | | | | | | | | | | | | | | | | | | | | | |
| "L" | GAS PRESSURE | | | | | | | | | | | | | | | | | | | | | | | | |
| "M" | COMBUSTION CHECK | | | | | | | | | | | | | | | | | | | | | | | | |
| "N" | FEED WATER TEMP | | | | | | | | | | | | | | | | | | | | | | | | |
| "O" | DA WATER PRESSURE | | | | | | | | | | | | | | | | | | | | | | | | |
| "P" | DA STEAM PRESSURE | | | | | | | | | | | | | | | | | | | | | | | | |
| "Q" | OUTSIDE AIR TEMP | | | | | | | | | | | | | | | | | | | | | | | | |
| "R" | BLOW BOTTOM BLOWDOWN | | | | | | | | | | | | | | | | | | | | | | | | |
| "S" | LOW WATER CUTOFF CHECK | | | | | | | | | | | | | | | | | | | | | | | | |
| "T" | DOM HOT WATER TEMP | | | | | | | | | | | | | | | | | | | | | | | | |
| | OPERATOR INITIALS | | | | | | | | | | | | | | | | | | | | | | | | |
| | ALARM COMMENTS | | | | | | | | | | | | | | | | | | | | | | | | |

APPENDIX B

BOILER ATTENDANT ALARM LOG SHEET

| DATE | TIME | BOILER# | ALARM ISSUE | CORRECTED BY |
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