

PROJECT NO.: BUILDING: 320	VA245-P-0622 Task #3	SYSTEM OUTPUTS		SYSTEM INPUTS		SYSTEM SOFTWARE/CONTROL		PAGE: 3
SYSTEM: BOILER BFT3		BINARY	ANALOG	BINARY	ANALOG	ALARM PROCESSING	APPLICATION/FUNCTION	
SYSTEM COMPONENT:		ELECTRIC DEVICE START/STOP	SPEED COMMAND	VALVE POSITION	DAMPER POSITION	STATUS	ALARM	REMARKS
STATUS								
BURNER								
FORCED DRAFT FAN								
DIFFERENTIAL PRESSURE								
VARIABLE FREQUENCY DRIVE (VFD)								
VFD FAULT								
VOLTAGE A to B								
VOLTAGE B to C								
VOLTAGE C to A								
VOLTAGE A to N								
VOLTAGE B to N								
VOLTAGE C to N								
COMBUSTION AIR								
OUTSIDE AIR DAMPER								
OUTSIDE AIR DAMPER - OPEN								
FILTER								
STEAM CONTROL VALVE								
SUPPLY AIR TEMPERATURE								
BOILER STEAM PRESSURE								
BOILER STEAM FLOW (SFM3)								
BOILER STACK TEMPERATURE								
LEAVING ECONOMIZER TEMPERATURE								
ECONOMIZER ENTERING WATER TEMP.								
ECONOMIZER LEAVING WATER TEMP.								
ECONOMIZER AIR DELTA TEMP.								
ECONOMIZER WATER DELTA TEMP.								
FLUE GAS RECIRCULATION								
FLOW								
DAMPER POSITION								
AIR COMPRESSOR (integral)								
FUEL PUMP (integral)								
ECONOMIZER STACK DAMPER								
OXYGEN								
NOX								
CARBON MONOXIDE								
EXCESS AIR								
WATER LEVEL								
AUXILIARY WATER LEVEL								
BLOWDOWN CONTROL VALVE CV-11								
BOILER NATURAL GAS FLOW (NGFM3)								
BOILER FUEL OIL FLOW (DFM3)								
BOILER 2-WAY FUEL OIL VALVE								
BOILER 3-WAY FUEL OIL VALVE								
LP GAS IGNITER PILOT (in use)								
PRESSURE								
STATUS - First out alarm annunciation for each of the following interlocks:								
FLAME FAILURE								
PURGE AIRFLOW LOW								
COMBUSTION AIRFLOW LOW								
FALSE COMBUSTION AIR								
HIGH MAIN GAS PRESSURE (at gas train)								
LOW MAIN GAS PRESSURE (at gas train)								
HIGH OIL PRESSURE (at fuel train)								
LOW OIL PRESSURE (at fuel train)								
LOW IGNITER (PILOT) GAS PRESSURE								
FUEL SAFETY SHUTOFF VALVES NOT CLOSED PRIOR TO IGNITION CYCLE								
LOW FIRE POSITION NOT ATTAINED PRIOR TO IGNITION CYCLE								
LOW ATOMIZING MEDIA STATIC PRESSURE AT ATOMIZING MEDIA								
SERVICE CONNECTION TO BURNER PIPING								
LOW ATOMIZING OIL DIFFERENTIAL PRESSURE								
LOW WATER CUTOFF								
LOW/LOW WATER CUTOFF								
LOW WATER CUTOFF RESET								
LOW ATOMIZING AIR PRESSURE								
FLUE GAS RECIRCULATION IMPROPER DAMPER POSITION								
LOW FLUE GAS OXYGEN								
HIGH STEAM PRESSURE CUTOFF								
HIGH/HIGH STEAM PRESSURE CUTOFF								
Alarm annunciation, safety shutdown and manual reset required for:								
FLAME SIGNAL DETECTED PRIOR TO IGNITION CYCLE								
PRE-IGNITION INTERLOCK OPEN DURING PRE-PURGE								
HIGH FIRE PURGE INTERLOCK FAILS TO CLOSE								
LOW FIRE PURGE INTERLOCK FAILS TO CLOSE								
IGNITER (PILOT) FAILS TO IGNITE								
MAIN BURNER FAILS TO IGNITE								
MALFUNCTION OF FLAME DETECTOR								
MALFUNCTION OF PROGRAMMER								
MALFUNCTION OF FLAME SIGNAL AMPLIFIER								
COMBUSTION AIR PROVING SWITCH ACTUATED PRIOR TO								
START-UP OF FORCED DRAFT FAN								
LOCK-OUT INTERLOCK OPEN DURING PRE-PURGE								
LOCK-OUT INTERLOCK OPEN DURING IGNITION								
LOCK-OUT INTERLOCK OPEN DURING RUN PERIOD								
INTERLOCK OPEN								
FLAME FAILURE								

1 POINTS LIST FOR BOILER BFT3  
NTS

PROJECT NO.: BUILDING: 320	VA245-P-0622 Task #3	SYSTEM OUTPUTS		SYSTEM INPUTS		SYSTEM SOFTWARE/CONTROL		PAGE: 4
SYSTEM: BOILER PLANT MISCELLANEOUS AND STEAM FLOWS		BINARY	ANALOG	BINARY	ANALOG	ALARM PROCESSING	APPLICATION/FUNCTION	
SYSTEM COMPONENT:		ELECTRIC DEVICE START/STOP	SPEED COMMAND	VALVE POSITION	DAMPER POSITION	STATUS	ALARM	REMARKS
EMERGENCY STOP								
MAIN STEAM HEADER PRESSURE								
MAIN STEAM HEADER TEMPERATURE								
TOTAL PLANT STEAM FLOW (calculated)								
HOSPITAL STEAM FLOW (SFM7)								
OUT BUILDING STEAM FLOW (campus) (SFM4)								
IN-HOUSE STEAM FLOW (SFM5)								
RO HEAT EXCHANGER FLOW (SFM6)								
CAMPUS CONDENSATE RETURN FLOW (WFM1)								
PRESSURE REDUCING STATION								
downstream pressure								
HEAT EXCHANGERS HX1 & HX2 PRV-1 & PRV-2								
RO HEAT EXCHANGER PRV-3 & PRV-4								
DEAREATOR & STORAGE TANK PRV-5 & PRV-6								
DDC CONTROL VALVE (PRV-5)								
DDC CONTROL VALVE (PRV-6)								
40 PSIG CAMPUS PRV-7 & PRV-8								
BOILER PLANT IN-HOUSE PRV-9								
BURNER MANAGEMENT SAFETY								
CONTROL SYSTEM - ALARM								
STEAM TRAP MONITORING SYSTEM								
BUILDING 320 CARBON MONOXIDE LEVEL								
OUTSIDE AIR TEMPERATURE								
OUTSIDE AIR TEMPERATURE								

2 POINTS LIST FOR BOILER PLANT  
NTS

PROJECT NO.: BUILDING: 320	VA245-P-0622 Task #3	SYSTEM OUTPUTS		SYSTEM INPUTS		SYSTEM SOFTWARE/CONTROL		PAGE: 7
SYSTEM: FUEL SYSTEMS		BINARY	ANALOG	BINARY	ANALOG	ALARM PROCESSING	APPLICATION/FUNCTION	
SYSTEM COMPONENT:		ELECTRIC DEVICE START/STOP	SPEED COMMAND	VALVE POSITION	DAMPER POSITION	STATUS	ALARM	REMARKS
FUEL OIL TRANSFER PUMPS								
PUMP #1								
PUMP #2								
TANK MONITORING								
TANK #1 - FUEL LEVEL								
TANK #1 - HIGH LEVEL								
TANK #1 - LOW LEVEL								
TANK #2 - FUEL LEVEL								
TANK #2 - HIGH LEVEL								
TANK #2 - LOW LEVEL								
TANK FLUID LEVEL MONITORING & ALARM SYSTEM								
UNDERGROUND FUEL OIL PIPING - INTERSTITIAL								
MONITORING LEAK DETECTION SYSTEM								
NATURAL GAS SERVICE								
MAIN HEADER PRESSURE								
MAIN HEADER FLOW								
EMERGENCY NATURAL GAS VALVE								
FUEL OIL								
PLANT SUPPLY FLOW (OFM1)								
PLANT RETURN FLOW (OFM2)								
LP GAS IGNITER PILOT								

3 POINTS LIST FOR FUEL SYSTEMS  
NTS

CONSULTANTS: <b>Barton Associates</b> Consulting Engineers 281 West Philadelphia Street York, PA 17401 Tel: (717) 845-7654 Web: www.ba-inc.com		ARCHITECT/ENGINEERS: <b>SAA architects</b> 600 North Hartley Street, Suite 150 T 717.843.3200 F 717.699.0205 York, PA 17404 www.saaarchitects.com		Drawing Title CONTROL POINTS LISTS - MECHANICAL Approved Project Director		Project Title BOILER PLANT UPGRADE PHASE V Location VAMC MARTINSBURG, WV Date 10.22.2013 Checked Drawn		Project Number 613-12-501 Building Number 320 Drawing Number 320-MP507 Dwg. 38 of 44		Office of Construction and Facilities Management Department of Veterans Affairs	
REVISION #1 Date 10.24.13		YORK   STATE COLLEGE PROJECT No. 2011130.02 DRAWN BY: RGG DESIGNED BY: JRA CHECKED BY: DJB		DAVID BARTON REGISTERED 1999 STATE OF PENNSYLVANIA PROFESSIONAL ENGINEER No. 0000000000							