	LOCATION	PROCEDURE NUMBER Combustion Turbine-004
	COMBUSTION TURBINE	REV. APPROVED
	WATER WASH VALVE LINE-UP OUTSIDE OPERATOR	FEB. 14, 2001
	OPERATING PROCEDURE	Page 1 of 11

OBJECTIVE

Prepare the Combustion Turbine for an off-line water wash.

SAFETY AND ENVIRONMENTAL

1. Plant required personal protective equipment (i.e. Safety glasses, hard hat, gloves, etc.)
2. The water wash operation involves water under high pressure. **Caution** must be exercised to ensure the proper positioning of all valves during this operation, since the water is **HOT**, necessary precautions should be taken in handling valves, pipes, and potentially **HOT SURFACES.**
3. While detergent is being injected into the wash water, avoid skin contact and breathing fumes produced in and around CT compartment. Review the MSDS of this product.

PREREQUISITES

1. Insure detergent is available, and the water wash supply tank is preheated to 150°-180°F, this may take 8 to 12 hours to heat.

2. Prepare an In-Plant Clearance with tags for an Off Line Water Wash.

NOTE: The following clearances will be needed:

A) LCI
B) Fuel
C) Cardox
D) Turning Gear
E) Water Wash Valve line up
F) Water Wash Drains

3. Use GE drawings 352b4351 , P&ID M605 , GE TIL 1236-2 ,GEK 107122A , for more detailed information.

GENERAL PROCEDURE

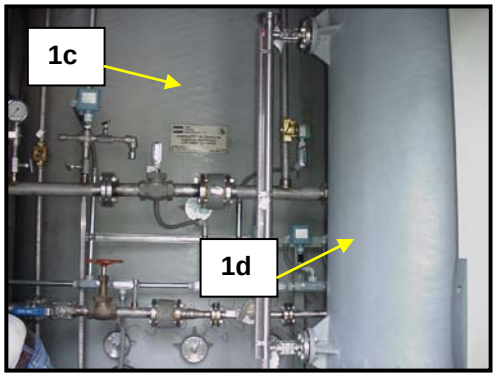
Note: Photos in this procedure are referenced with numbers within a box 1
The number represents the step in the procedure.

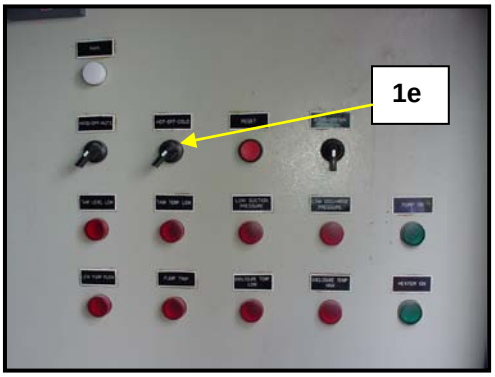
Water Wash Skid House

1. Check power feed to the corresponding Water Wash Skid

   a) 9TGK-SKD-1 (for CTs A, B & C). Power is fed from 480v panel BAPC-PPL-2D21 located west side of Unit B PEECC. Check circuit breakers: 26, 28 & 30 to be closed. _____

   b) 9TGK-SKD-2 (for CTs D, E & F). Power is fed from 480v panel EAPC-PPL-2C41 located west side of Unit E PEECC. Check circuit breakers: 26, 28 & 30 to be closed. _____

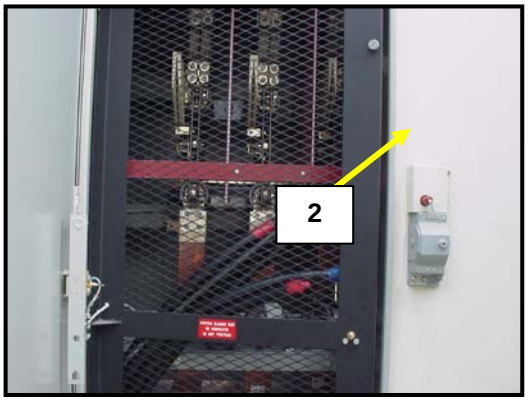




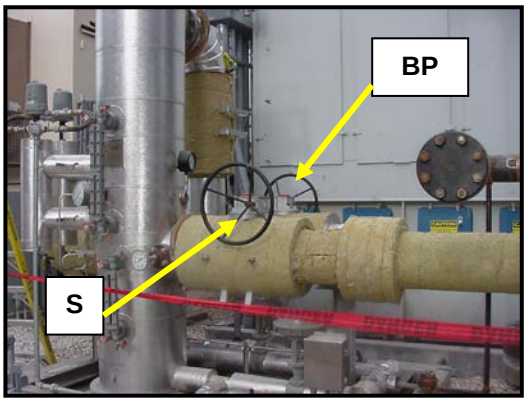
   c) Verify that the Water Wash tank is full. _____
   d) Verify that the Detergent Tank is full (4 parts of water to 1 part detergent) _____
   e) Prepare water by aligning controls at Wash Skid. Allow 8 to 12 Hours to reach 180°F. _____
   f) Verify that the Water Wash Drain Tank (3000 gal capacity) has enough capacity to store water wash. _____

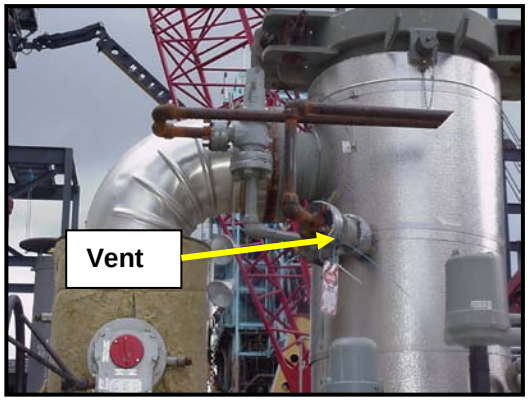
   Note: Drain tanks are buried in the ground between units A/B, C/D and West Side of F. Each drain tank has a high level alarm At 2250 gallons and a high/high alarm at 2700 gallons.

Verify that a clearance has been issued on the LCI, Fuel Supply, Turning Gear, and Cardox System.



2. Verify that the LCI disconnect is OPEN and TAGGED for combustion turbine to be washed. _____

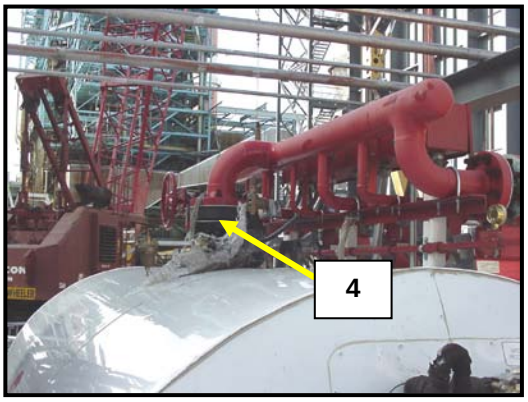




3. Verify the coalescing filter supply valve (S), filter skid bypass valve (BP) Are CLOSED and TAGGED. Verify the filter skid vent. Is OPENED and TAGGED _____

CAUTION

Header between coalescing filter and the CT gas valves will contain 450 psi gas. Be careful when venting.

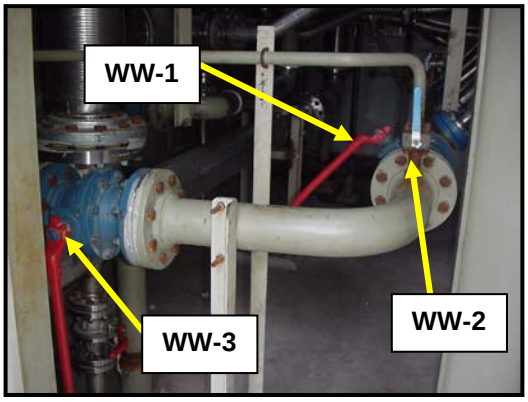


4. Verify the CO2 fire protection manual isolation valve on top of tank is locked in the CLOSED position and TAGGED _____

5. Verify that the Turning Gear breaker is OPEN and TAGGED (Located in PEECC) _____

NOTE: Steps 6 through 24 will us the In-Plant Clearance (2X CT Turbine Water Wash Valve Line-Up)

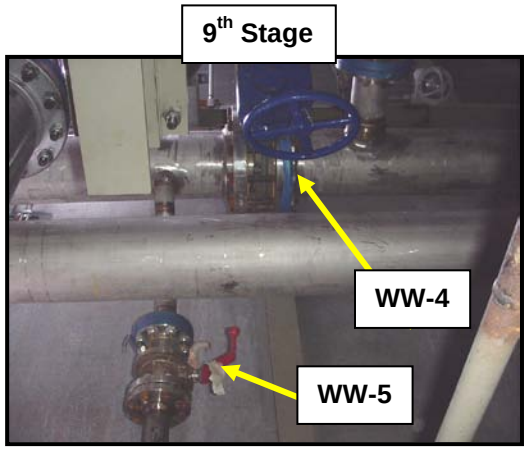
Steps 6 through 15 are located inside the CT compartment

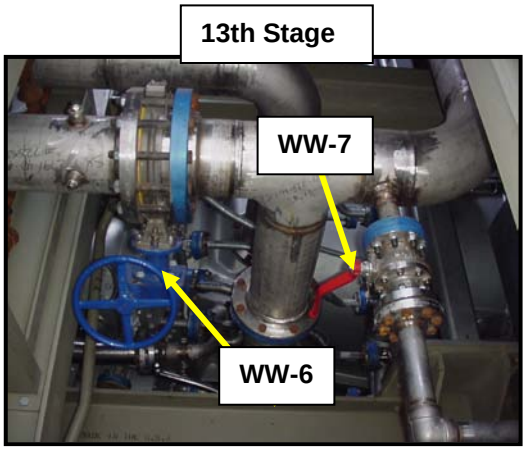


6. Open and Tag both ball valves (WW-1 & WW-3) on the drain headers that are attached to the seven (7) lower combustion cans (cans 4 through 10). _____

7. Close and Tag the vent valve (WW-2) between the isolation valves. _____

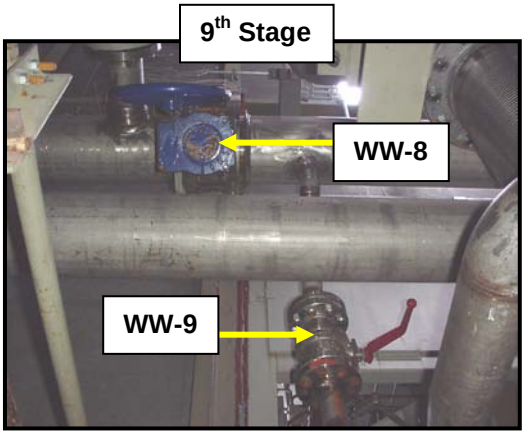
Note:
During normal operations WW-2 is left in the open position. It is used as a tail tail help identify a leaking isolation valve from going undetected. This line will prevent the drain header from leaking into the CT compartment.

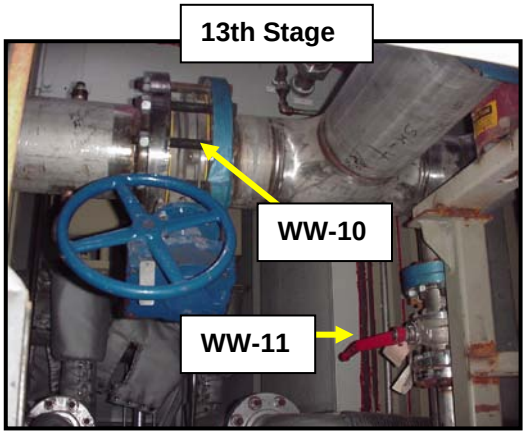




8. Close and Tag the East Side 9th and 13th stage extraction isolation valves. (WW-4 & WW-6) _____

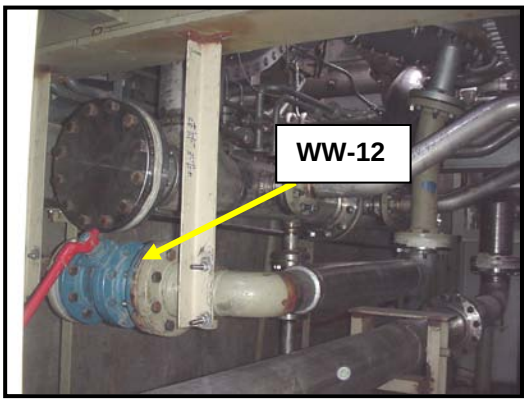
9. Open and Tag Drain valves. (WW-5 & WW-7) _____

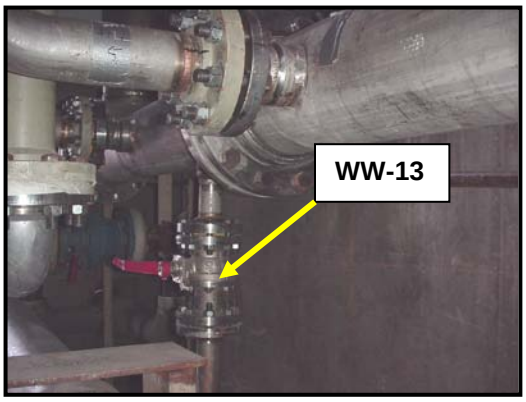




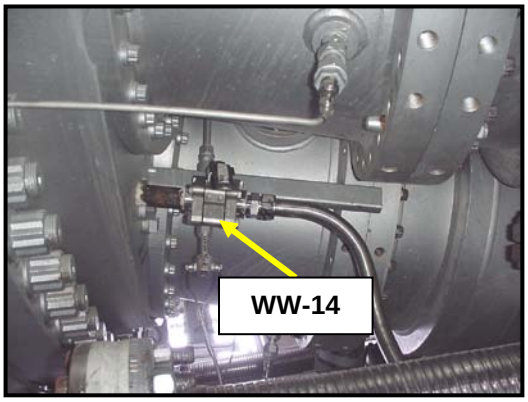
10. Close and Tag the West Side 9th and 13th stage extraction isolation valves. (WW-8 & WW-10) _____

11. Open and Tag drain valves.
    (WW-9 & WW-11) _____



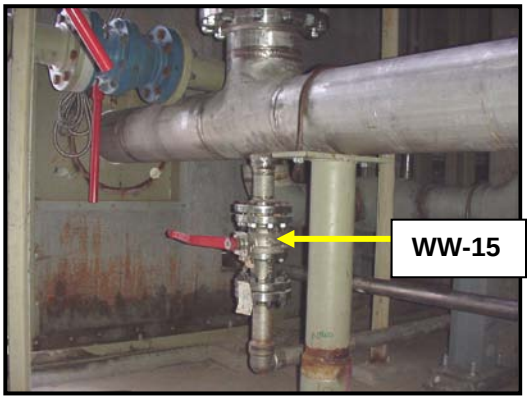


12. Open and Tag The turbine belly manway cover inspection plate drain valve.
    (WW-12) _____
13. Open and Tag Atomizing Air header drain valve. (WW-13) _____



14. Close and Tag compressor bleed (surge) operating air supply valve
    (WW-14) located between combustor cans 8 & 9. _____

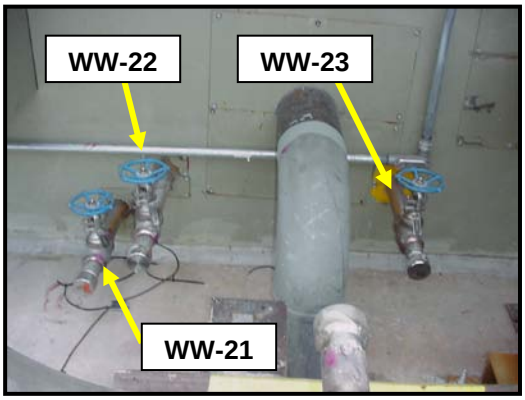
NOTE:
After the Water Wash the line from this valve will need to be disconnected at the elbow to allow water to drain that may leak by the isolation valve.



15. Open and tag compressor bleed heat drain valve. (WW-15) _____

East Side of the CT Compartment Outside

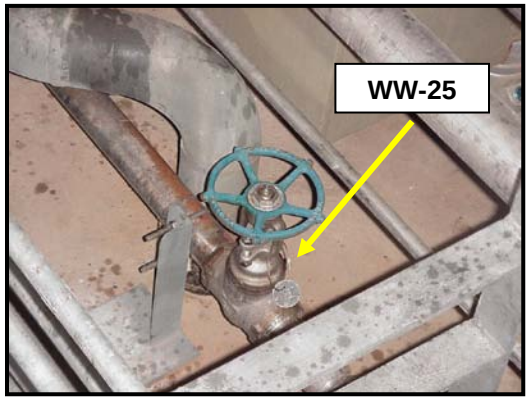
16. Close and Tag Compressor Bleed Heat manual isolation valve (WW-20) _____



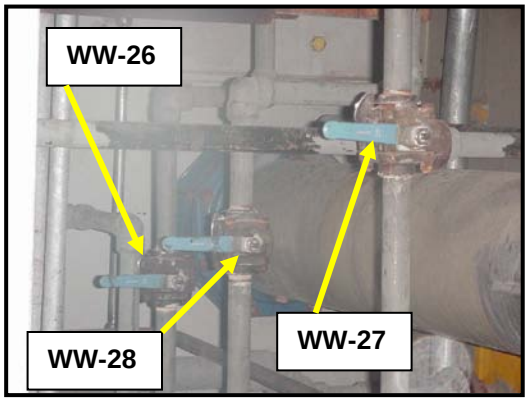
17. Open and Tag the following drain valves:

WW-21 (Bleed Heat drain)	_____
WW-22 (9th stage extraction drain)	_____
WW-23 (Atomizing Air Header drain)	_____
WW-24 (13th stage extraction drain)	_____

West Side of CT Compartment Outside



18. Open and Tag 9th stage extraction drain (WW-25) _____



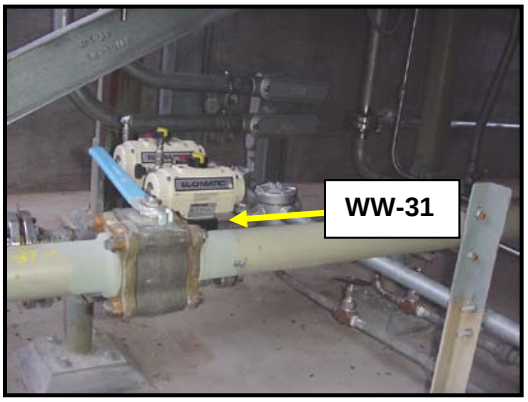
19. Open and Tag False fired drain valve. (WW-26) _____

20. Open and Tag both Exhaust Frame vertical joint drains. (WW-27 & WW-28) _____

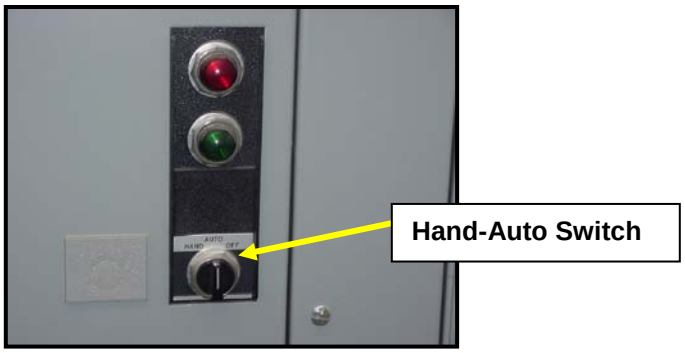
21. Open and Tag Exhaust Diffuser Duct drain valve. (WW-29) _____

East Side of PEECC

22. Open and Tag 13th stage extraction drain valve (WW-30). _____



23. Open and Tag CT Inlet Plenum drain valve (WW-31). _____



24. With all the low point drains opened and tagged, the last step before releasing the clearance on the LCI is to set both exhaust frame blowers to the HAND position. See photo above. _____

Note:

The corresponding switches are located on the 480v breakers (MCC) in the PEECC Skids.

At this time this procedure is complete. The Outside and Inside Operator should conduct a tailboard before starting the wash. It will be necessary for the Outside and Inside Operator to start using the Off-Line Water Wash Procedure to complete the water wash.