ROCHESTER GAS AND ELECTRIC CORPORATION

GINNA STATION

CONTROLLED COPY NUMBER 21

PROCEDURE NO. PT-47.11 REV. NO. 3

CONTAINMENT POST ACCIDENT CHARCOAL FILTER UNIT EFFICIENCY TEST

TECHNICAL REVIEW

PORC REVIEW DATE 3-9-94

PLANT SUPERINTENDENT

3-12-94
EFFECTIVE DATE

CATEGORY 1.0

REVIEWED BY: _____

THIS PROCEDURE CONTAINS 11 PAGES

GINNA STATION
START:
DATE _____
TIME _____
COMPLETED:
DATE _____
TIME: _____

PT-47.11

CONTAINMENT POST ACCIDENT CHARCOAL FILTER UNIT

EFFICIENCY TEST

1.0 PURPOSE:

1.1 To provide test steps for surveillance halide leak testing of the installed "CHARCOAL" adsorber bank to ensure that there are no leaks greater than that allowed by system acceptance criteria.

2.0 TEST REQUIREMENTS:

2.1 This test shall be performed every 18 months or after 720 hours of charcoal adsorber system operation, since previous test, or following painting, fire, or chemical release, in the area communicating with the air handling unit and shall have the following conditions demonstrated.

2.1.1 Pressure drop across the "CHARCOAL" adsorber bank shall be $\leq$ 3" H_2O at design flow rate, ($\pm$ 10%).

2.1.2 In-place "HALIDE" (Freon) leak testing, under normal operating conditions, shall show $\geq$ 99% removal efficiency.

2.1.3 Every 12 months, a "CHARCOAL" sample shall be removed from an adsorber cell, randomly selected from those cells with the longest in-bank residence time or "TEST CANISTER(S)" shall be removed, and sent to a laboratory for an "IODINE REMOVAL EFFICIENCY TEST". The efficiency shall be at least 90% removal for iodine.

2.2 After each replacement of a "CHARCOAL" adsorber cell or after any structural maintenance performed on the adsorber mounting frames of the unit, the efficiency specified in step 2.1.2, shall be demonstrated.

2.3 Visual inspection of "CHARCOAL" adsorber cell assemblies for damage and loss of charcoal shall be performed.

3.0 REFERENCES:

3.1 Plant Tech. Specs. - Section 4.5.2.3 inclusive.

3.2 ANSI/ASME N510-1980 (Testing of Nuclear Cleaning Systems).

3.3 NUCON - Vendor.

3.4 RG&E Ventilation System Flow Diagram #33013-1863.

3.5 Previously procedure PT-29.3 (1987).

.6 A-1102, Qualification of Test Personnel.

3.7 A-1603.1, Work Request/Trouble Report Initiation.

3.8 PT-38.1, Visual Inspection of Charcoal Filter Tray Assemblies.

3.9 A-1408, Independent Verification Procedure.

3.10 A-805, Control of Consumable Materials at Ginna Station Procedure.

4.0 INITIAL CONDITIONS:

NOTE: If preparatory work will be performed prior to vendor arrival, mark step 4.1 N/A.

4.1 Vendor documentation required by the applicable purchase order has been submitted to QC Dept. and found acceptable prior to start of work.

QC _____

4.2 Plant shall be at cold shutdown. _____

4.3 RG&E test personnel are qualified in accordance with A-1102.

_____

4.4 Visual inspection of "CHARCOAL" adsorber cell assemblies shall be completed per PT-38.1.

_____

4.5 Notify Shift Supervisor and Head Control Operator at start and upon completion of test.

_____

4.6 When mass air flow thru "CHARCOAL" bank has been determined, log on applicable vendor's "IN-TEST" data sheet.

_____

4.7 This procedure is divided into the following sections. Initial which section(s) apply and mark remainder N/A.

4.7.1 Removal of "CHARCOAL" Adsorber Cell or Test Canister for Iodine Removal Efficiency Testing (Section 6.2). _____

4.7.2 Charcoal Adsorber Bank Testing - Halide (Section 6.3). _____

4.7.3 Filter Bank Removal and Replacement (Section 6.4). _____

4.8 Prepare test tags for the following:

	POSITION PRIOR TO TEST:	POSITION REQUIRED FOR TEST:
4.8.1	1-A Contmnt. Recirc. Fan Unit Switch: _____	"As Required" _____
4.8.2	1-B Contmnt. Recirc. Fan Unit Switch: _____	"As Required" _____
4.8.3	1-C Contmnt. Recirc. Fan Unit Switch: _____	"As Required" _____
4.8.4	1-D Contmnt. Recirc. Fan Unit Switch: _____	"As Required" _____

4.9 Notify HP Dept. that system will be shutdown to facilitate entry into unit for inspection and test preparation. _____

4.10 SWP has been issued. _____

4.11 If a discrepancy requiring maintenance is found, submit a WR/TR to correct the problem. _____

4.12 The "A" and "C" Containment Recirculation Fans are available for operation and their air flow paths may be aligned to their respective post accident charcoal filter bank as desired. _____

4.13 If only one unit is to be tested mark other one N/A. _____

4.14 Only the fan unit being tested may be in operation with ALL OTHER UNITS in "PULL STOP" condition. _____

4.15 Notify QC Dept. prior to start of test. _____

4.16 Notify Chemical Control to ensure "Ginna Station Consumable Material Labels" are available to be posted on all chemical containers used for this test.

_____

4.16.1 A Restricted Used Permit has been issued for the listed products:

	PRODUCT:	PERMIT #:
4.16.1.1	GERETRON (HALIDE R-11):	90:188P

_____

5.0 **PRECAUTIONS:**

5.1 Radiation protection practices will be observed at all times.

5.2 Normal company work safety practices will be observed.

5.3 Notify HP Section that Halide will be used to test the charcoal units and a strong organic odor may be noticed in the areas affected by this system.

5.4 Proper sequential implementation of each process in this procedure, as approved, is necessary to ensure adherence to A-805, Control of Consumable Materials at Ginna Station.

6.0 **INSTRUCTIONS:**

P.A. UNIT: "A" "B"

6.1 Ensure associated fan is shutdown ("PULL-STOP" position) and test tag(s) are hung on fan switch(es), before entering plenum unit (MCB).

"A" CV Recirc. Fan "PULL-STOP" _____ N/A

"C" CV Recirc. Fan "PULL-STOP" N/A _____

6.2 REMOVAL OF CHARCOAL ADSORBER CELL OR TEST CANISTER FOR IODINE REMOVAL EFFICIENCY TESTING:

P.A. UNIT: "A" "B"

6.2.1 Remove "CHARCOAL" adsorber cell or "TEST CANISTER(S)" from filter bank to obtain charcoal sample for laboratory testing and replace with approved same. Label newly installed charcoal cell/test canister faceplate, to reflect replacement date.

_____ _____

6.2.2 Adsorber cell location. (N/A if non-applicable).

1-A P.A. Unit: _____

1-B P.A. Unit: _____

_____ _____

6.2.3 Test canister(s) location. (N/A if non-applicable).

1-A P.A. Unit: _____

1-B P.A. Unit: _____

_____ _____

6.2.4 Ensure adsorber cell or test canister(s) replaced is/are restored to operating condition.

_____ _____

6.3 CHARCOAL ADSORBER BANK TESTING - HALIDE:

NOTE: If step 4.1 was performed, mark step 6.3.1 N/A.

6.3.1 Vendor documentation required by the applicable purchase order has been submitted to QC Dept. and found acceptable prior to start of work.

QC _____

6.3.2 Start associated containment recirc. fan unit for charcoal bank undergoing test.

"A" Fan for "A" P.A. Bank _____

"C" Fan for "B" P.A. Bank _____

6.3.3 To properly align dampers of fan unit being tested in the "POST ACCIDENT" mode, perform the following:

_____ _____

P.A. UNIT: "A" "B"

6.3.3.1 "A" P.A. unit ("A" CV Recirc. Fan) - Press in armature relay "CF1A-L", rack RA2, Relay Room. _____

6.3.3.2 "B" P.A. Unit ("C" CV Recirc. Fan) - Press in armature relay "CF1C-L", rack RA3, Relay Room. _____

6.3.4 Verify the following for the associated fan:

6.3.4.1 Normal Loop Entry Damper Closed (LED). _____ _____

6.3.4.2 Charcoal Bank Inlet Damper Open (CID). _____ _____

6.3.4.3 Charcoal Bank Outlet Damper Open (COD). _____ _____

6.3.5 Ensure the following equipment items are available:

6.3.5.1 Halide Tracer Gas, R-11. _____ _____

6.3.5.2 Halide Detector. _____ _____

6.3.5.3 Halide Generator. _____ _____

6.3.6 Connect Halide Detector to power supply and allow approximately 15 minutes warm up time. _____ _____

6.3.7 Connect sample lines to upstream and downstream sample ports. _____ _____

6.3.8 Establish flow through system. _____ _____

6.3.9 Record pressure drops across filters and transfer to applicable vendor's "Halide Test" data sheets.

6.3.9.1 (Max. Allowable $\leq$ 3" H_2O) _____ "H_2O _____"H_2O

NOTE: If pressure drops are beyond allowable limits, investigate and correct problem prior to testing.

6.3.10 Establish upstream and downstream sample flows and set upstream dilution air ratios if necessary, to produce an upstream concentration which is within the linear response range of the detector. _____ _____

P.A. UNIT: "A" "B"

6.3.11 Take upstream and downstream background sample readings. _____ _____

NOTE: If these readings show no background contaminants that might interfere with test results, continue with the test. If interference is indicated, purge system with air flow until interference is reduced to an acceptable level.

6.3.12 Start injection. _____ _____

6.3.13 Monitor and record upstream and downstream tracer gas concentrations for five minutes using applicable vendor's data sheet. _____ _____

6.3.14 Calculate percent efficiency and transfer data to appropriate vendor's data sheet.

EFFICIENCY: _____% _____%

NOTE: Halide concentrations are determined by averaging (4) stabilized readings previously recorded on data sheet.

6.3.15 If a discrepancy requiring maintenance is found, due to the percent efficiency obtained being less than the allowable limits, submit a WR/TR to correct the problem as soon as practical and retest, otherwise mark N/A.

RETEST EFFICIENCY: _____% _____%

6.3.16 Remove all sample lines from ports._____ _____

6.3.17 Replace all pipe caps or fittings on unit. _____ _____

6.3.18 To re-align dampers of fan unit being tested, perform the following:

6.3.18.1 "A" CV Recirc. Fan - Press "RESET" button for "CF1A-L", Rack RA2, Relay Room. _____

6.3.18.2 "C" CV Recirc. Fan - Press "RESET" button for "CF1C-L", RACK RA3, Relay Room. _____

P.A. UNIT: "A" "B"

6.4 FILTER BANK REMOVAL AND REPLACEMENT:

6.4.1 Ensure instruction 6.1 has been performed prior to entering plenum unit. _____ _____

6.4.2 Type filter bank removed:

6.4.2.1 CHARCOAL _____ _____

6.4.3 Number of filter cells removed: #_____ #_____

6.4.4 Replace filter cells removed with approved type, label newly installed charcoal filter faceplate to reflect replacement date and ensure the bank is restored to operating condition. _____ _____

6.4.5 Test system utilizing appropriate test section to retain system efficiency within allowable limits. _____ _____

6.5 A copy of the vendor's test data shall be attached to this procedure. _____

6.6 Vendor to submit, at a future date, a complete report of test results. _____

6.7 Ensure all test tags have been removed and test tag log reflects so. _____

6.8 Notify Head Control Operator that system testing is completed and system may be restored to normal operating conditions. _____

COMMENTS "A" Unit:

COMMENTS "B" Unit:

COMPLETED BY (RG&E): _____

(VENDOR): _____

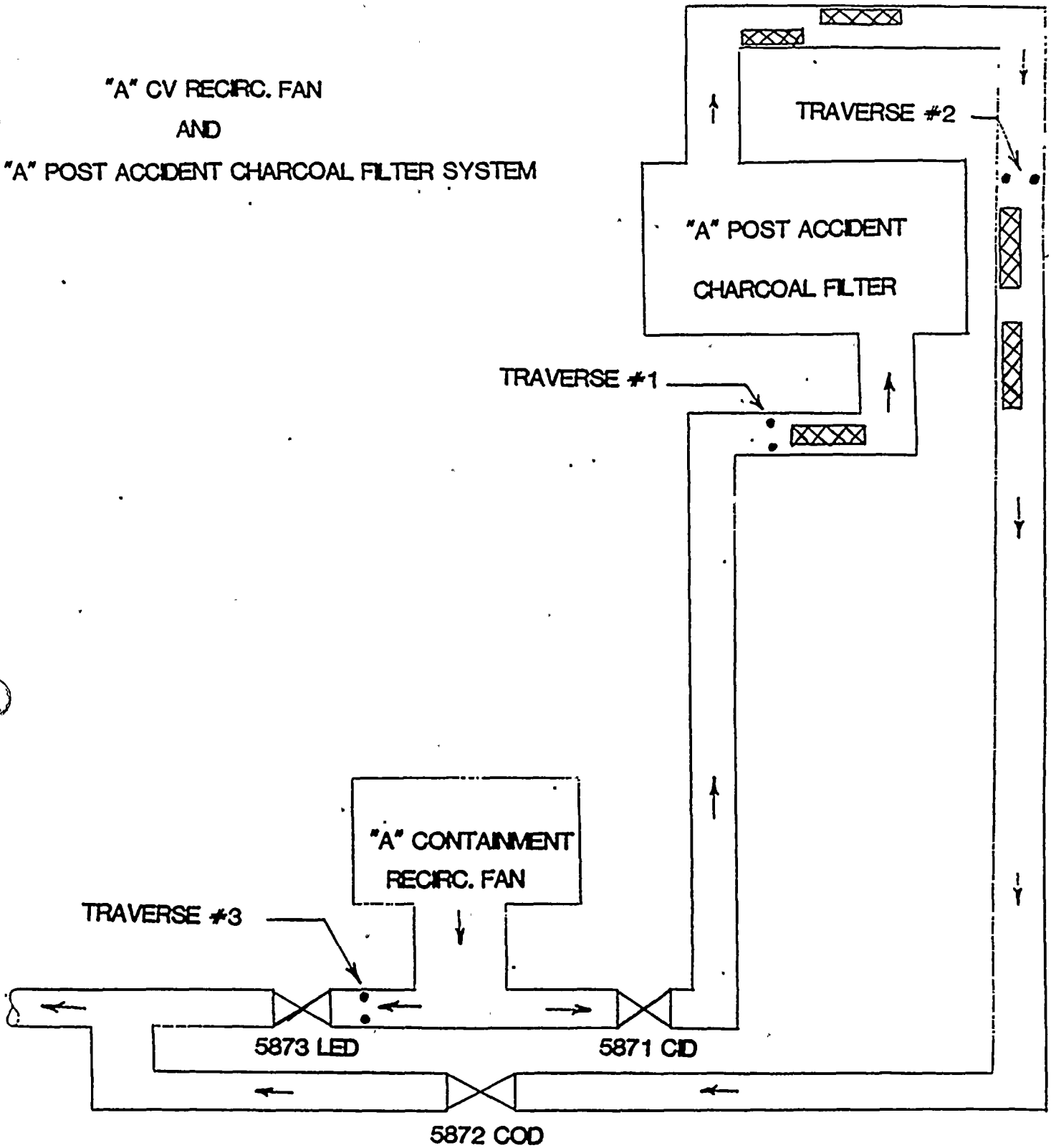
DATE COMPLETED: _____

HEAD CONTROL OPERATOR: _____

SHIFT SUPERVISOR: _____

RESULTS & TEST REVIEW: _____ DATE _____

"A" CV RECIRC. FAN
AND
"A" POST ACCIDENT CHARCOAL FILTER SYSTEM



TRAVERSE #1- SAMPLE POINT FOR MASS AIR FLOW MEASUREMENT(POST ACCIDENT), AND UPSTREAM "H2O ΔP MEASUREMENT.

TRAVERSE #2 – SAMPLE POINT FOR DOWNSTREAM "H2O ΔP MEASUREMENT.

TRAVERSE #3 – SAMPLE POINT FOR MASS AIR FLOW MEASUREMENT. (NORMAL)