

AP 1001

Three Mile Island Nuclear Station

SIDE 1

Form 1001-8

Special Operating Procedure

SOP No. Z-98

(From SOP Log Index)

NRC

Unit No. 2

Date 4/11/79

NOTE: Instructions and guidelines in AP 1001 must be followed when completing this form.

1. Title AUX BLDG EXHAUST FILTERS CHANGE OUT

2. Purpose (include purpose of SOP) THIS PROCEDURE IS TO PROVIDE THE STEPS NEEDED TO CHANGE THE EXHAUST FILTERS IN THE AUX BLDG.

3. Attach procedure to this form written according to the following format.

A. Limitations and Precautions

- 1. Nuclear Safety — N/A
- 2. Environmental Safety — See steps 2
- 3. Personnel Safety — See step (2) 1 of 16 of PERC.
- 4. Equipment Protection — See step (2) 6.1.1.

B. Prerequisites Attached

C. Procedure

Generated by C.E. Gatto Date 4/11/79

Duration of SOP - Shall be no longer than 90 days from the effective date of the SOP or (a) or (b) below - whichever occurs first.

(a) SOP will be cancelled by incorporation into existing or new permanent procedure submitted by N/A

(b) SOP is not valid after N/A
(fill in circumstances which will result in SOP being cancelled)

6. (a) Is the procedure Nuclear Safety Related?

If "yes", complete Nuclear Safety Evaluation. (Side 2 of this form) Yes No

(b) Does the procedure affect Environmental Protection?

If "yes", complete Environmental Evaluation. (Side 2 of this form) Yes No

(c) Does the procedure affect radiation exposure to personnel? Yes No

NOTE: If all answers are "no", the change may be approved by the Shift Supervisor. If any questions are answered "yes", the change must be approved by the Unit Superintendent.

7. Review and Approval

NRC Approved - Shift Supervisor [Signature] 4/12/79 Date

Benedict Reviewed - List members of PDRG contacted [Signature] 4/12/79 Date

ALARA [Signature] 4/12/79 Date

[Signature] 4/12/79 Date

[Signature] 4/12/79 Date

Approved - Unit Superintendent [Signature] 4/12/79 Date

8. SOP is Cancelled

Shift Supervisor/Shift Foreman _____ Date 133 070

1. Title _____

2. Nuclear Safety Evaluation

Does this SOP:

- * (a) increase the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety? yes no
- * (b) create the possibility for an accident or malfunction of a different type than any evaluated previously in the safety analysis report? yes no
- * (c) reduce the margin of safety as defined in the basis for any technical specification? yes no

Details of Evaluation (Explain why answers to above questions are "no". Attach additional pages if required.)

Evaluation By _____ Date _____

3. Environmental Impact Evaluation

Does this SOP:

- (a) possibly involve a significant environmental impact? yes no
- * (b) have a significant adverse effect on the environment? yes no
- * (c) involve a significant environmental matter or question not previously reviewed and evaluated by the N.R.C. yes no

Details of Evaluation

Evaluation By _____ Date _____

* NOTE: If these questions are "yes", the change must receive N.R.C. approval.

4. Review (PORC review of evaluation is required only when requested by the Station Superintendent/Unit Superintendent. If this review is made, the PORC must consist of two off-site members.)

1. _____

2. _____

Off-Site Members

PORC Chairman Signature

Date

5. Approval

Station Superintendent/Unit Superintendent

Date

PREREQUISITES FOR FILTER CHANGEOUT

Completed (Date/Time/Initial)

- _____ 1. Assemble and checkout breathing air supply system (see Figure 3) by verifying that fittings are tight and that regulators are set to 25 to 35 psig and operate satisfactorily. Pressure test low press. hoses & fittings to 38.5 to 40 psig for soundness.
- _____ 2. Certify quality of breathing air.
- _____ 3. Assemble ten (10) 150 ft. sections of supplied-air respirator supply lines. (2 to be used as spares on 328 foot level)
- _____ 4. Install and seal plastic sleeving on all hose joints including ends to be connected to supplied-air respirators. (See Figure 4). Also provide air supply at final suit-up area to allow man to have air while suiting up.
- _____ 5. Mockup, train, and qualify personnel in use of supplied-air respirators, HP representative to witness training. HP to keep training records and retain at control point.
- _____ 6. Brief personnel on radiological precautions, stay times, and emergency exit procedures.
- _____ 7. Stage a supply of anti-c clothing at HP control point located at the shielded door in the corridor between Units 1 and 2 on the 305 level (east side).
- _____ 8. Stage the breathing air supply at the HP control point.
- _____ 9. Stage the supplied-air respirators & Scott air packs at the HP control point.
- _____ 10. Assemble and test radio communications system.
- _____ 11. Train two (2) standby emergency people who will be dressed and ready at control point. These people will be ready to don scott air packs and immediately enter if there are any injuries or difficulties of any kind. These people should be completely familiar with the operation and should be trained with those who are to perform the operation.
- _____ 12. Stage the personnel ladder at the control point for use between the 305 and 328 levels at the covered hatch located just inside the shielded door.
- _____ 13. Stage the floor grating that covers the void when the shielded door is open.
- _____ 14. Stage extra sheed plastic, bags & tape at the control point.
- _____ 15. Erect a radiological control area tent at the shielded door located in the corridor between Units 1 and 2 on 305 level east side. (See Figure 4)

- _____ 16. Marked up route map for 305 level and 328 level or route painted on floor.
- _____ 17. Prior to starting filter change must assure that filters are at the exhaust filter unit.

SPECIAL EQUIPMENT

1. Breathing air system - See figure 3.
2. Supplied air respirators Type C continuous flow class Defense Apparel HSQ-10; MESA/NIOSH approval No. TC 19C-120.
3. Scott air packs.
4. 1 150 ft. line (for initial checkout).
5. 5/16" Wrench
6. Vacuum cleaner
7. Cheater bar for undogging door on filter unit.
8. Crescent wrenches or assorted sizes.
9. Pipe wrench.

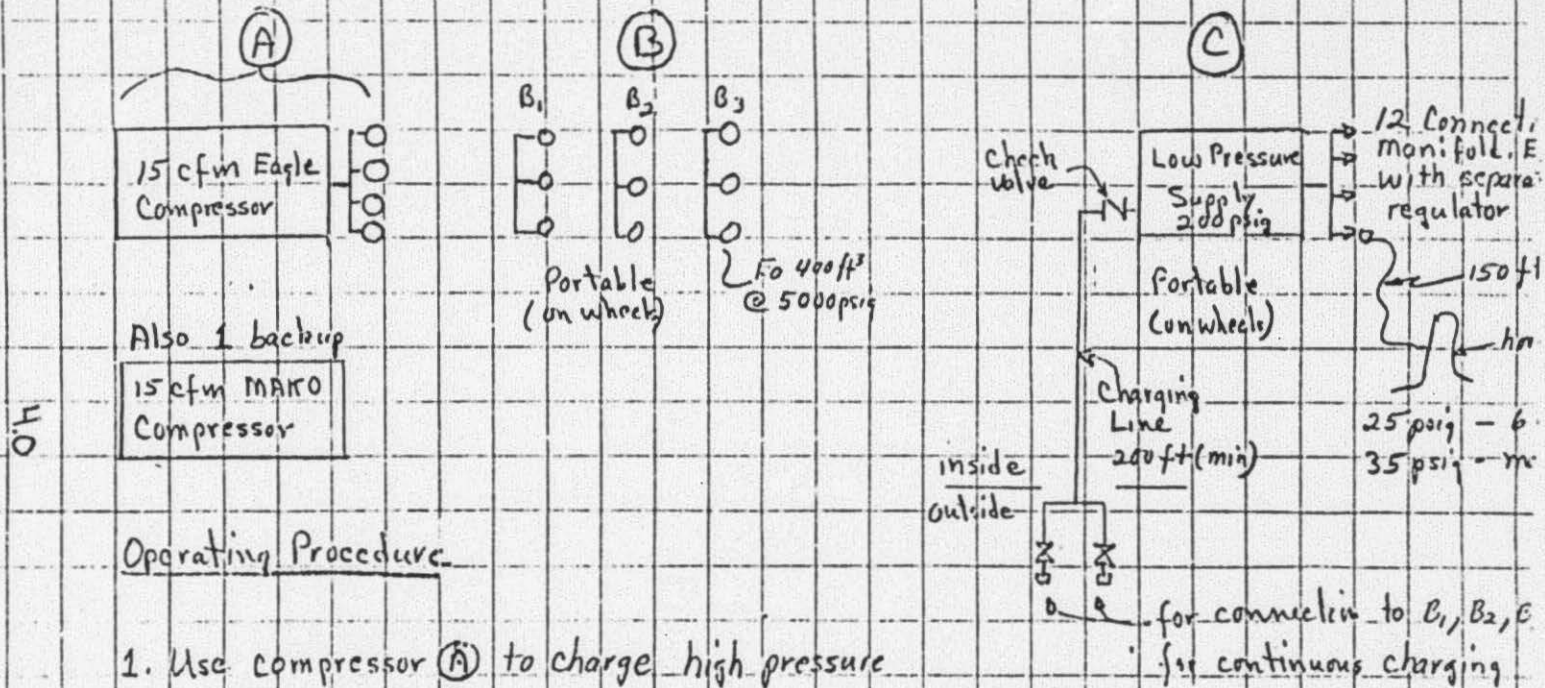
PROCEDURE FOR USING BREATHING AIR

- _____ 1. Health Physics establish a radiological controlled area in the tent at the shielded door.
- _____ 2. Dress out personnel (2) for entry using scott air packs.
- _____ 3. Open shielded door.
- _____ 4. Open roll up door. Exercise caution until determined that air flow inward will not collapse the tent.
- _____ 5. Personnel shall enter to accomplish the following:
 - _____ a. Mark off routes for personnel who will change out filters.
 - _____ b. Verify the elevator is operational. (one cycle to 328 level, back to 305)
 - _____ c. Verify planned access and egress routes are useable.
 - _____ d. Verify storage space is available on 328 level.
 - _____ e. Place ladder between 305 and 328 levels at covered hatch.
 - _____ f. Verify 150 ft. will reach Unit A & Control point from location of supply.

- _____ 6. Roll the breathing air supply to the entry point. Make sure the air lines are connected and the ends contained.
- _____ 7. Roll breathing air supply inside the shielded door. Personnel in scott air packs then roll the supply to the elevator. Move the supply to the 328 level using the elevator. Personnel shall use the stairs next to the elevator.
- _____ 8. Roll supply to designated location on 328 level.
- _____ 9. Take the individual supply lines (150 ft each) and the charging line and route lines over to the ladder at the covered hatch and lower lines the the 305 level.
- _____ 10. At the 305 level, bring the ends of the lines to the shielded door and pass them into the tent.
- _____ 11. Connect the charging line to the outside supply.
- _____ 12. Personnel shall use the following sequence in using the supplied - air respirators:
 - a. Dress out and don hood.
 - b. Secure belt loop so pull of hose will not be on hood.
 - c. Connect to one of the supply hoses. Exercise caution in unsealing end so open end of hose will not become contaminated. Reseal plastic sleeving over connection.
 - d. Enter 305 level, ascend to 328 level via the ladder. Walk slowly and do not let hose become tangled.
 - e. Reverse route to leave the 328 level.
 - f. Health Physics personnel will direct the undressing procedure. the air supply shall not be disconnected until personnel are inside the tent area.
 - g. The ends of the supply hoses shall be kept covered whenever disconnected.
 - h. If the charging capability is lost, the tender shall immediately tell everyone to stop work, secure, and leave area. The gages will be marked to indicate pressure control limits.
 - i. A tender shall be stationed at the low pressure supply manifold at all times except during entry & exit of personnel. The tender shall also be in communication with the control point.

Breathing System

Figure 3 (Z-98)

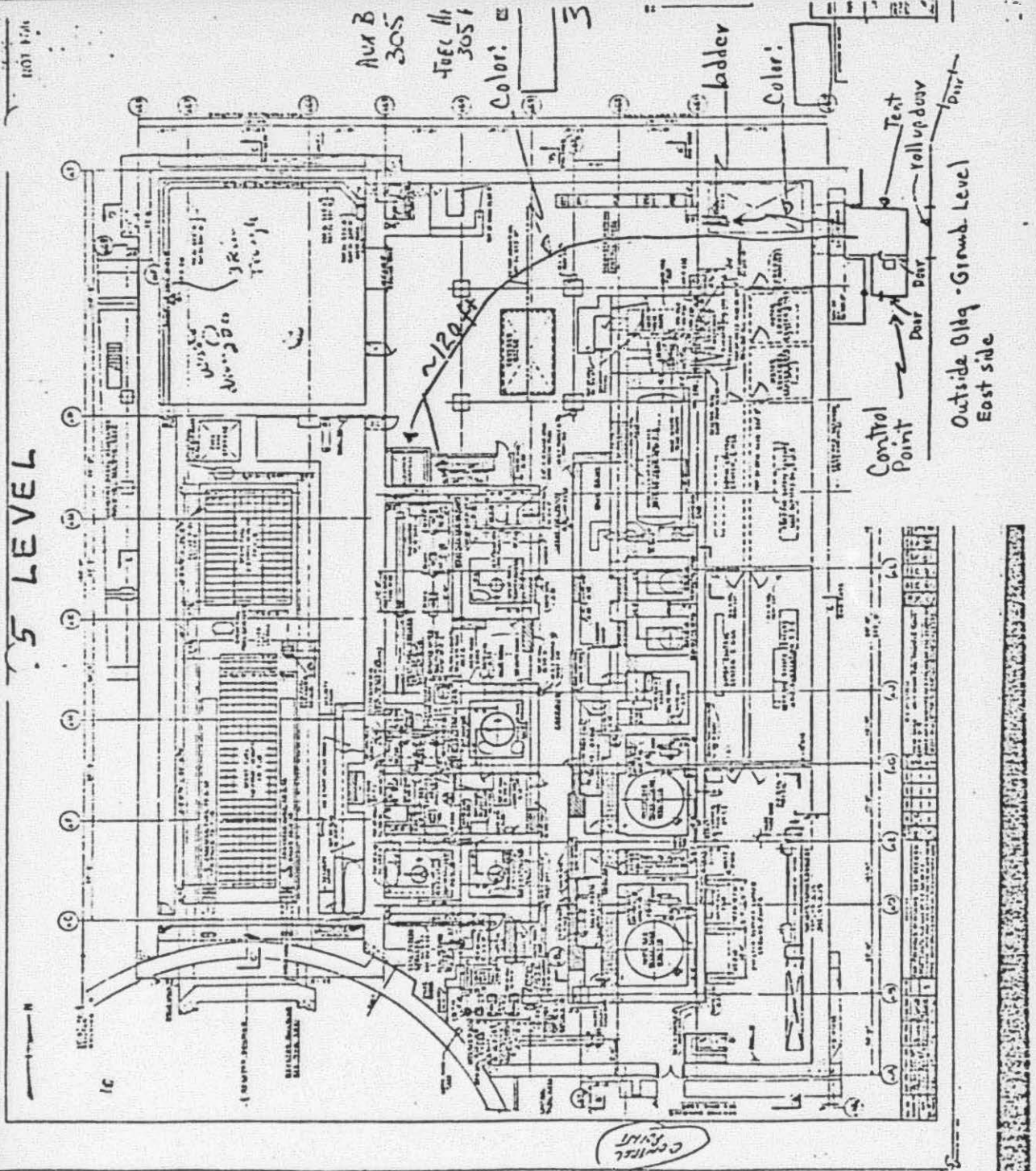


Operating Procedure

1. Use compressor (A) to charge high pressure portable bottles (B).
 2. Connect 2 (B) units to the two (2) valve charging line manifold connected to (C).
 3. Charge low pressure supply (C) from (B).
 4. When (B) unit reaches 500 psig, switch to second (B) unit and immediately charge out expended (B) unit with a fully charged (B) unit.
- Set individual manifold regulators at 25 psig. (25 psig min; 35 psig max)

H.O.

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015



5 LEVEL

FIGURE 1

5.0

133 076

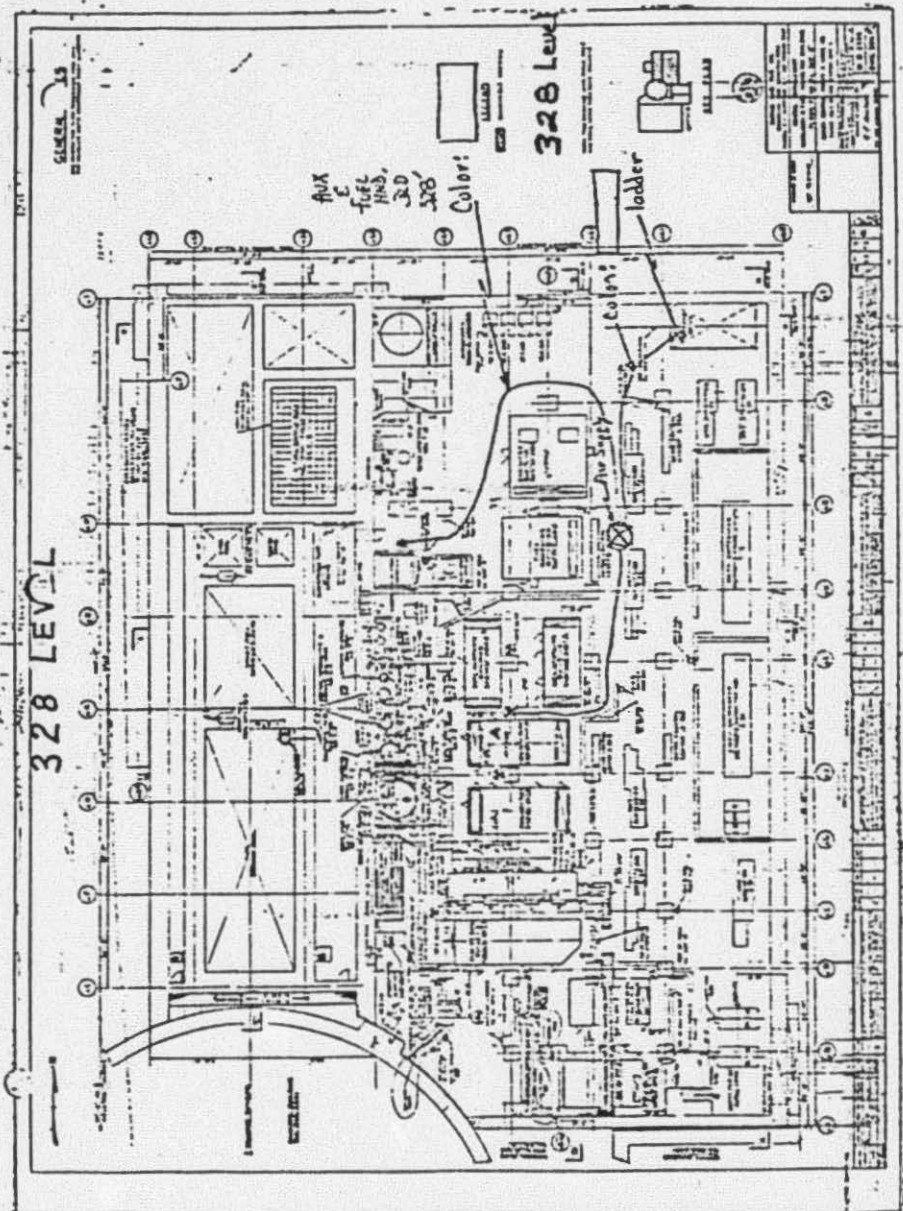


FIGURE 2

G.O

133 077

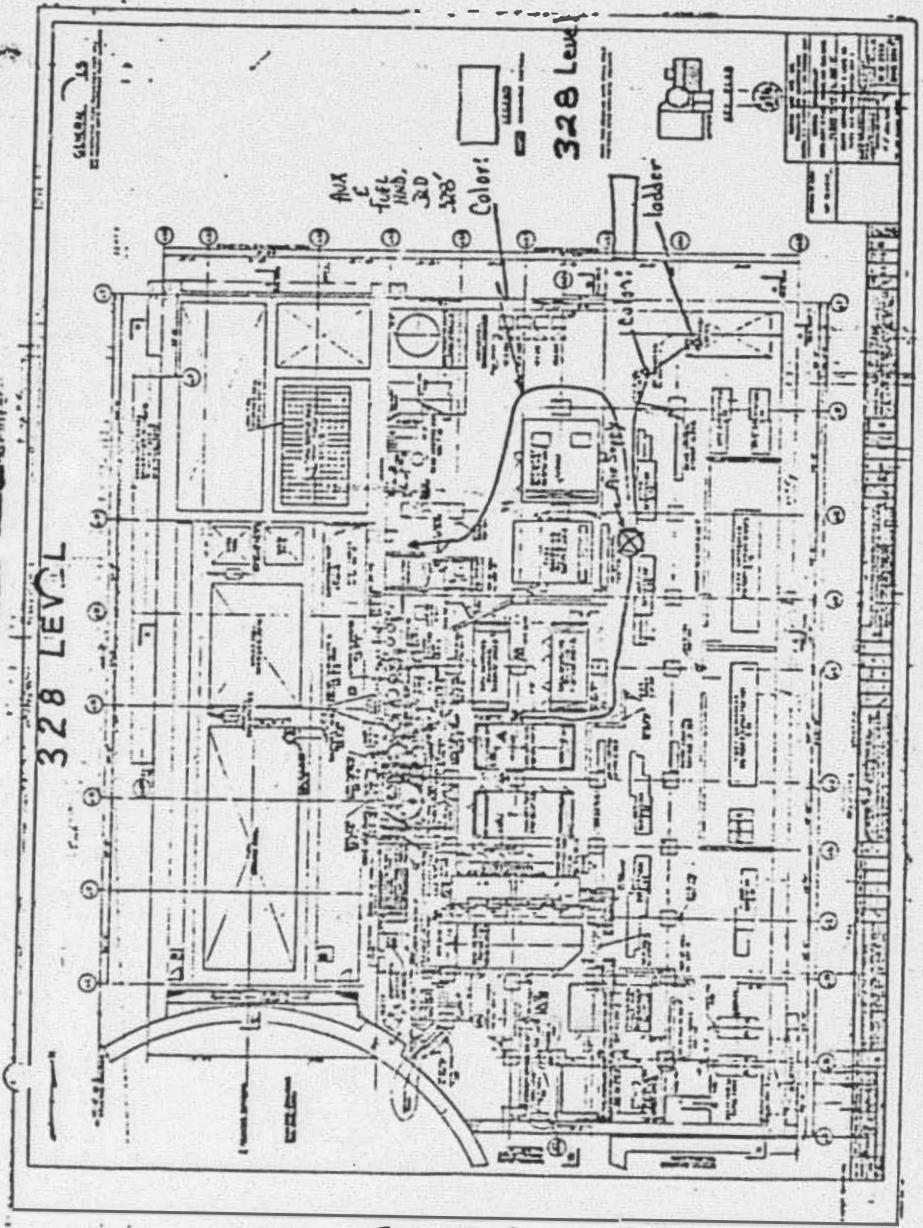
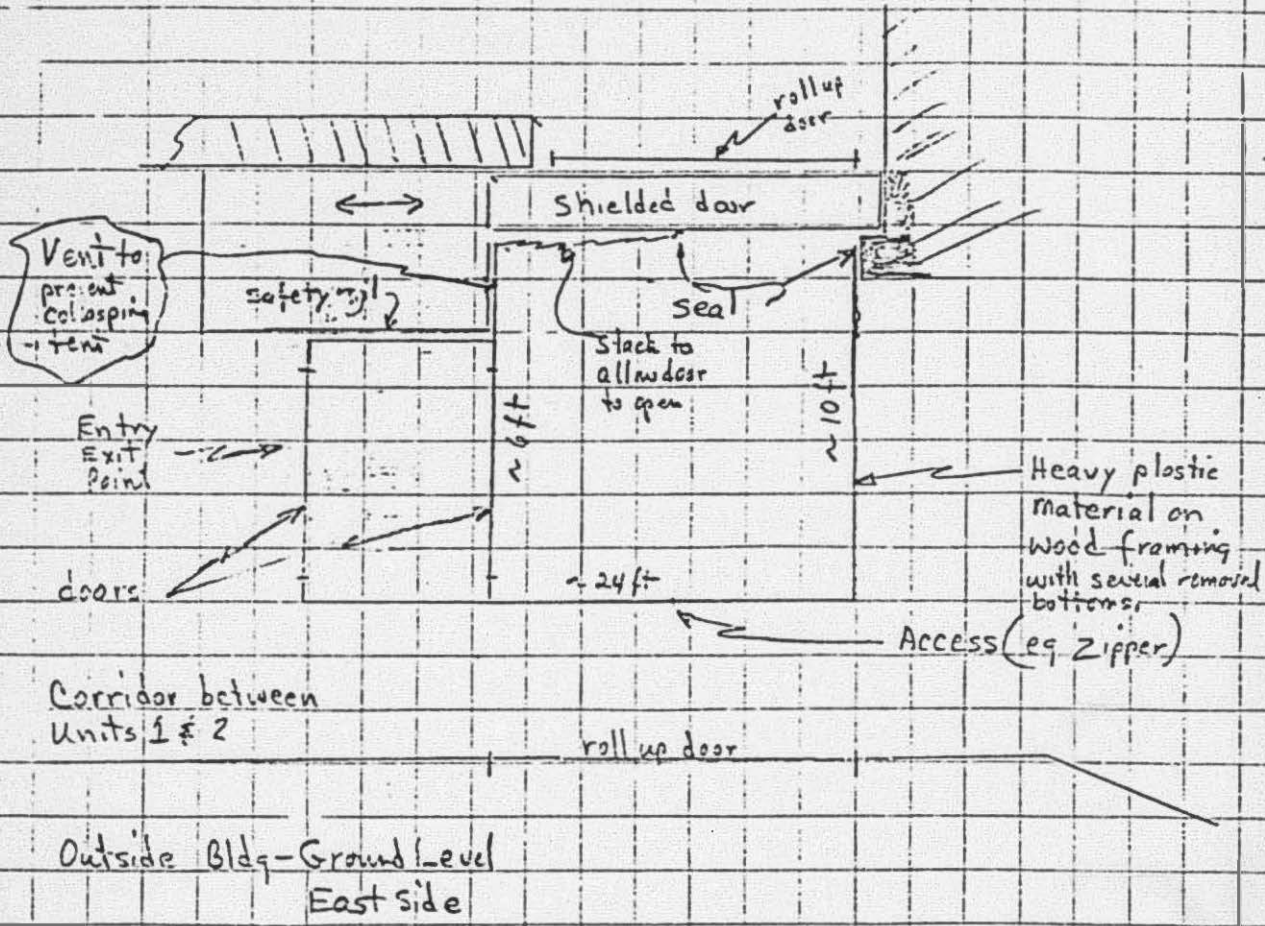


FIGURE 2

6.0

133 078



Radiological Control Area Tent

Figure 4 (Z-98)

7.0

6.0 Procedure

.1 All prerequisites completed and signed off and steps 2 thru 11 of procedure for using breathing air are completed and signed off.

6.1.1 De-energize and tag out ventilation fans for Auxiliary Building Exhaust Unit A in accordance with AP 1002.

6.1.1.1 Insure both supply fans remain in pull-to-lock throughout this procedure. AH-E-7A& 7B.

6.1.1.2 Maintain at least one exhaust fan running throughout this procedure. AH-E-8A, 8B, 8C.

6.1.1.3 Maintain filter string AH-F-8B, 9B, 10B and 30B in service throughout this procedure.

6.1.1.4 Isolate filter string AH-F-8A, 9A, 10A and 30A with the manual inlet and exhaust dampers while the filter change out is in progress.

.2 Health Physics to establish a radiological control area by access door on the 305' level.

6.3 Full Anti-C clothing and respirators are required for personnel as directed by Health Physics. Enter area per paragraph 12 of procedure for using breathing air.

NOTE: Prior to opening door in 6.4 inform environmental survey teams.

6.4 When directed by Health Physics, open access door to the charcoal filter bank. Remove nuts with 5/16" wrench and retainer bars from filters placing the nuts in a bucket and the retainer bars outside the filter handling unit.

NOTE: Prior to entering unit HP should perform a radiation survey inside housing and reaccess stay times (radiation and airborne). HP to provide extremity monitoring if required by survey (if the extremity dose rate is 5 times the whole body or the individual is likely to receive 4 R extremity in a quarter then extremity monitoring is necessary.)

- 6.5 Remove charcoal filters from racks to a height that does not require scaffolding. Two men will remove filters inside the cubicle passing the filters to men directly outside who will tape sharp edges, place the filter in a sealed plastic bag and then in a cardboard box and store temporarily on the 328' level until a final storage location is determined at a later date.
- 6.6 Install new filters (in the same manner old filters were installed) into the vacant racks lower section inspecting each rack to insure media is intact. In handling, care must be taken not to damage the filter media. Install air filters in the direction of air flow as directed by arrow on filter housing (if indicated).
- 6.7 After air filters are installed, check for proper seating of filter unit, verify that no air gaps are present.
- 6.8 Install scaffolding for removal of upper filter units utilizing two men inside the cubicle passing the filters to men directly outside who will package the filters as in step 6.5 and store temporarily on the 328' level until final storage location is determined at a later date.
- 6.9 Install new filters in the upper section as per step 6.6. Close and secure door after filter installation and after vacuuming up spilled charcoal.

NOTE: Health Physics are to be present during removal of radioactive filters and will provide instructions for the proper disposal of used filter elements. HP should not, however, remain in the area continuously.