ENVIROGENICS CO.

TEST PROCEDURE

FOR

AVAC SYSTEM

THEME PARK

WALT DISNEY WORLD

ORLANDO, FLORIDA

A DIVISION OF AEROJET-GENERAL CORP.

TEST PROCEDURE

FOR

AVAC SYSTEM

THEME PARK

WALT DISNEY WORLD

ORLANDO, FLORIDA

A. GENERAL

1. All tests will be conducted by Envirogenics Company in the presence of and approved by WED Enterprises, Inc. and the Owner's representative. Envirogenics Co. will provide all instruments, equipment, labor, and material (except trash) to complete the tests.

2. If inspection or tests show defects, such defective work or material will be replaced and inspection and tests repeated.

B. PNEUMATIC TRANSPORT PIPING

1. Piping will be tested and approved in the manner stated in Paragraph A. Piping located underground will be tested before backfilling. Piping is construed to mean piping from the flange below the discharge valve to the collection hopper, from the hopper to the filter, etc., but does not include the hopper, filter, exhauster or exhaust air duct.

a. The complete piping of the transport system will be tested with air with all openings capped. A pressure of approximately 2-1/2 pounds per square inch will be applied with a force pump and maintained at least 4 hours without leakage discernable on a mercury-column gage. This may be accomplished incrementally as the work progresses.

b. Test of the protective coating for underground piping will be accomplished in accordance with applicable portions of AWWA Standard C203, Section 3.13.

Piping Tests verified on _____ 1971:

_____
Envirogenics

_____
WED Enterprises, Inc.

_____
Owner Representative

C. PRE-OPERATIONAL TEST CHECKOUT

1. Prior to the actual operational test and demonstration of the AVAC system, each individual component will be checked by Envirogenics Co. to insure that the entire system performs as intended and so that the actual test will be conducted over a minimum time period. The pre-test checkout, incidentally, will check the system control cables which were furnished and installed by others.

For the pre-test checkout and the test itself there must be 120 volts control power available at the Central Control Panel location in Fantasyland basement, the AVAC equipment building, and each discharge and inlet valve location. Additionally, 90 psig control air must be available at all the valve locations and the AVAC equipment building. (Telephone communications between Fantasyland basement and the AVAC equipment building while not absolutely essential, would expedite the testing greatly.) This power and air requirement is to be supplied by the owner.

D. MAJOR COMPONENTS TEST

By means of a special programmer tape all major components of the system will be operated. These are listed below.

1. All air inlet valves (11 total)
2. All discharge valves (16 total)
3. All exhausters (3 total) and their block valves which operate after their respective exhausters are up to speed.
4. The dust collector.
5. The exhauster sequence changer which runs two exhausters at a time and changes the idle exhauster each cycle.
6. The collection hopper slide gate.
7. The air blast (lance) which cleans the hopper screen.

Major Components Test
completed _____ 1971:

_____
Envirogenics

_____
WED Enterprises, Inc.

_____
Owner Representative

E. SYSTEM STARTING TEST

The three (3) methods of starting a trash collection cycle will be demonstrated as follows:

1. Manual push button.

2. Time clock control.

3. Full charging station control. This situation will be simulated by placing an object in the charging station and holding it in the position it would take if the station were full. Two stations to be selected by a representative of the Owner will be demonstrated.

Stations selected: _____ and _____.

System Starting Test completed _____ 1971:

_____
Envirogenics

_____
WED Enterprises, Inc.

_____
Owner's Representative

F. SAFETY FEATURES TEST

Safety features will be demonstrated as listed below.

1. When Hl4, Fantasyland Castle, discharge valve is operating (open), the chute charging doors are locked and pilot lights at doors indicate this.

2. When one charging door on Fantasyland Castle (charging) chute is open, the other door is locked and its pilot light (at the locked door) indicates chute in use. Both doors will be checked.

3. When a discharge valve is operating (open), the lid of its charging station is locked and a nearby pilot light indicates this. Two stations as selected by the Owner's representative will be demonstrated. Stations selected: _____ and _____.

4. When the lid of a charging station is open, its discharge valve cannot operate. This test will be made at the locations selected for subparagraph 3 above.

5. Hopper gate open when system is not running: System cannot start.

6. Hopper access door (2 total) opened when system is running: System holds. Simulate with limit switch electrical connection.

7. Hopper access door (2 total) opened when system is not running: System cannot start. Simulate with limit switch electrical connection.

8. Dust collector access door opened when system is running: System holds. Simulate with limit switch electrical connection.

9. Dust collector access door opened when system is not running: System cannot start. Simulate with limit switch electrical connection.

10. Dust container door opened when system is running: System holds.

11. Dust container door opened when system is not running: System can not start.

12. Central Control Panel power switch placed in the "OFF" position when system is running: System shuts down.

13. Central Control Panel power switch in the "OFF" position when system is not running: System can not start.

14. When excess vacuum is developed by the system: System shuts down. System cannot start until "RESET" button is pressed. Simulate with vacuum switch jumper connection.

15. When low air flow in the transport tube occurs: System holds. Simulate with flow switch electrical connections.

16. When high temperature in the system is sensed: System shuts down after approximately two minutes. Simulate with high temp. switch jumper connection.

17. When a discharge valve fails to close when system is running: System holds. Jumper valve electrical circuit to keep it open.

18. When a discharge valve fails to close when system is not running: System cannot start. Jumper valve electrical circuit to keep it open.

19. When an air inlet valve fails to open when system is running: System holds due to low air flow. Remove circuit wire from valve solenoid to prevent its opening.

20. When an air inlet valve fails to close when the system is running: System holds: Jumper valve electrical circuit to keep it open.

21. When an air inlet valve fails to close when the system is not running: System cannot start. Jumper valve electrical circuit to keep it open.

22. When the collection hopper is full when the system is running: System holds. Jumper sonic switch contact to simulate action. Note: "Full Hopper" is monitored only after the calculated time of arrival of material after each discharge valve opening so that swirling material will not give a false indication. The "program hold" time occurs after each of these times.

23. When the collection hopper is full when the system is not running: System cannot start. Jumper sonic switch contact to simulate action.

24. If the compactor does not operate, the system will hold. Turn off the compactor controls to produce the fault.

25. If the compactor starts but does not complete its action or does not stop in the ram returned position, the system will hold. Turn off compactor controls in mid-cycle to produce the fault.

26. In the above case the hopper gate will remain open and the system cannot be started until it is closed. See item 5, this paragraph.

27. If the trash container is not in place when the collection hopper is scheduled to be opened, the annunciator indicates this and the alarm sounds. Simulate this action with the container limit switch and set up this situation on the programmer with a test tape. The programmer will automatically advance the tape to the end of the cycle.

28. If high differential pressure occurs across the dust collector (filter), the annunciator indicates this and the alarm sounds. Simulate action by connecting the high differential pressure switch terminals.

Safety Features Test completed _____ 1971.

Envirogenics

WED Enterprises, Inc.

Owner Representative

G. COLLECTION CAPABILITY TEST

1. In order to demonstrate the system collection capability from each station, a numbered bag of trash will be placed in each station. One station (to be selected by the representative of the owner) will be filled to capacity to start the system. At the end of the cycle the compactor container will be examined to determine that all numbered bags arrived there.

2. Capacity of the system is indicated as follows:

a. Cycle time is fixed by the punched tape furnished and if all timers were set perfectly they would run to an elapsed time of 844 seconds. To allow for timing inaccuracies, assume 900 seconds or 15 minutes/cycle or 4 cycles/hour. This figure is conservative and experience with the system will undoubtedly allow a shorter cycle to be punched on tape.

b. Each collection station has approximately one (1) cubic yard capacity. Assume 15 cubic yards in the total collection from all.

c. The collected trash is assumed to weigh 200 lb/cubic yard.

d. 15 cubic yards/cycle X 200 lb/cubic yard X 4 cycles/hour equals 12,000 lb/hour which exceeds the contract requirement of 11,000 lb/hour.

Station selected to be filled to capacity _____.

Collection Capability Test
Completed _____ 1971:

_____
Envirogenics

_____
WED Enterprises, Inc.

_____
Owner Representative