



# Puget Sound Clean Air Agency

Notice of  
Construction No. 12307

## HEREBY ISSUES AN ORDER OF APPROVAL TO CONSTRUCT, INSTALL, OR ESTABLISH

Registration No. 18695  
Date

To install one Natural Gas fueled Facultatieve Technologies Model (FT) FT III Human Crematory rated for 200 lbs/hr.

### OWNER

**Mark Lorentzen**  
**Solie Funeral Home**  
**3301 Colby Ave**  
**Everett, WA 98201**

### INSTALLATION ADDRESS

**Solie Funeral Home**  
**3301 Colby Ave**  
**Everett, WA 98201**

### THIS ORDER IS ISSUED SUBJECT TO THE FOLLOWING RESTRICTIONS AND CONDITIONS

1. Approval is hereby granted as provided in Article 6 of Regulation I of the Puget Sound Clean Air Agency to the applicant to install or establish the equipment, device or process described hereon at the INSTALLATION ADDRESS in accordance with the plans and specifications on file in the Engineering Division of the Puget Sound Clean Air Agency.
2. This approval does not relieve the applicant or owner of any requirement of any other governmental agency.

### Throughput Limit:

3. The hours of operation of the primary burner for the Facultatieve Technologies Model FT III SE Human Crematory unit over any 12-month rolling period must not exceed 1,525 hours, nor may operation exceed 12 hours per day.

### Emissions Limitations and Standards:

4. The exhaust concentration of total particulate matter (filterable and condensable particulate matter) from Facultatieve Technologies Model FT III SE Human Crematory unit shall not exceed 0.05 grains per dry standard cubic feet (gr/dscf) corrected to 7% oxygen (O<sub>2</sub>) as measured by EPA Method 5 as modified by Puget Sound Clean Air Agency Board Resolution 540 dated August 11, 1983.
5. The exhaust concentration of carbon monoxide (CO) from the Facultatieve Technologies Model FT III SE Human Crematory unit shall not exceed 50.0 ppm, on a dry, volumetric basis corrected to 7% O<sub>2</sub> as measured by EPA Methods 1, 3A and 10 from Appendix A of 40 CFR Part 60.
6. The exhaust concentration of nitrogen oxides (NO<sub>x</sub>) from the Facultatieve Technologies Model FT III SE Human Crematory unit shall not exceed 140 ppm, on a dry, volumetric basis corrected to 7% O<sub>2</sub> as measured by EPA reference methods 1, 3A and 7E from Appendix A of 40 CFR Part 60.
7. Visible emissions from the Facultatieve Technologies Model FT III SE Human Crematory unit may exceed 5 percent opacity for up to 3 minutes in any one hour. At all other times, visible emissions may not exceed 5 percent opacity. Compliance with this condition is determined using Ecology Method 9A.
8. Emissions of hexavalent chromium from the Facultatieve Technologies Model FT III SE Human Crematory unit shall not exceed 3.44E-06 pounds per hour as measured by the average of three runs using U.S. EPA Method 0061. The EPA Method 29 test method may be used as an alternative test

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method with the understanding that total chromium results shall be used as a surrogate for demonstrating compliance with the hexavalent chromium limit. Other alternative methods or modifications to a method must be approved by the Puget Sound Clean Air Agency.

## Operational Limits:

9. The exhaust stack of the Facultative Technologies Model FT III SE Human Crematory unit shall be vertical and unobstructed.
10. This cremation unit must only be utilized for human remains and their corresponding containers. No other material shall be incinerated in the primary chamber. Incinerated containers must not contain chlorinated plastics.
11. The secondary chamber of the Facultative Technologies Model FT III SE Human Crematory unit must be heated to a minimum temperature of 1,600 degrees Fahrenheit (°F) prior to igniting the primary chamber, and the operating temperature in the secondary chamber (afterburner) must be maintained at or above 1600 °F for the entirety of each cremation cycle and at least 0.5 hours before each cremation cycle. This pre-heat requirement is satisfied for subsequent cycles if the temperature is maintained at or above 1600°F continuously.
12. The Facultative Technologies Model FT III SE Human Crematory unit must operate with a monitoring system that measures the temperature in the primary and secondary chambers, in degrees Fahrenheit, for the entirety of each cremation cycle and at least 0.5 hours before each cremation cycle begins. Temperature data for the secondary chamber must be recorded continuously (or sampled at intervals no greater than 15 seconds and recorded as 1-minute averages) for the entirety of each cremation cycle and for at least 0.5 hours after each cremation cycle ends. The temperature monitoring system must be interlocked with an audible alarm such that if the temperature in the secondary chamber falls below 1,600 degrees Fahrenheit, the alarm will sound at which time immediate corrective action must be taken to correct the problem.
13. The Facultative Technologies Model FT III SE Human Crematory unit must operate with a monitoring system that measures opacity in the exhaust stack, as a percentage. The opacity monitoring system must be interlocked with an audible alarm such that if the opacity in the exhaust stack exceeds 5 percent, the alarm will sound at which time immediate corrective action must be taken to correct the problem or cease operation of the crematory until the problem is corrected.
14. All temperature and opacity monitoring system components must be maintained, repaired, and replaced in accordance with the manufacturer's recommendations, instructions, and operating manuals.
15. The owner or operator shall annually test or replace the temperature monitoring system thermocouples or pyrometers. If performed, the test shall consist of either a physical or electronically simulated comparison and shall follow manufacturer specifications. The results of the test readings must be within +/- 16 degrees F. If the results of the test readings exceed +/- 16 degrees of the reference value, the thermocouple must be replaced or adjusted to read within +/- 16 degrees of the reference value.

## Compliance Demonstration:

16. Initial compliance with Condition 4 must be demonstrated by testing the Facultative Technologies Model FT III SE Human Crematory unit's stack within 180 days of starting up the cremation unit in accordance with Section 3.07 of Puget Sound Clean Air Agency's Regulation I. Compliance testing must be conducted using EPA Method 5 as modified by Puget Sound Clean Air Agency's Board Resolution 540 dated August 11, 1983. Compliance testing must consist of at least three separate test runs. Each run

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must be a minimum duration of 1 hour and include an integral number of cases. One Ecology Method 9A observation of at least one hour duration shall be conducted concurrently with each of the particulate sampling runs to demonstrate initial compliance with Condition 7.

17. Initial compliance with Condition 5 must be demonstrated by testing the Facultative Technologies Model FT III SE Human Crematory unit's stack within 180 days of starting-up the cremation unit in accordance with Section 3.07 of Puget Sound Clean Air Agency's Regulation I. Compliance testing must be conducted using EPA Methods 1, 3A, and 10. Compliance testing must consist of at least three separate test runs. Each run must be a minimum duration of 1 hour and include an integral number of cases.
18. Initial compliance with Condition 6 must be demonstrated by testing the Facultative Technologies Model FT III SE Human Crematory unit's stack within 180 days of starting-up the cremation unit in accordance with Section 3.07 of Puget Sound Clean Air Agency's Regulation I. Compliance testing must be conducted using EPA Methods 1, 3A, and 7E. Compliance testing must consist of at least three separate test runs. Each run must be a minimum duration of 1 hour and include an integral number of cases.
19. Initial compliance with Condition 8 must be demonstrated by testing the Facultative Technologies Model FT III SE Human Crematory unit's stack within 180 days of starting-up the cremation unit in accordance with Section 3.07 of Puget Sound Clean Air Agency's Regulation I. Compliance testing must be conducted using EPA Methods 1, 2, 3A, 4 and U.S. EPA Method 0061. Compliance testing must consist of at least three separate test runs. Each run must be a minimum duration of 1 hour and include an integral number of cases. The EPA Method 29 test method may be used as an alternative test method with the understanding that total chromium results shall be used as a surrogate for demonstrating compliance with the hexavalent chromium limit. Other alternative methods or modifications to a method must be approved by the Puget Sound Clean Air Agency.
20. If requested by the Agency, ongoing compliance with Conditions 4, 5, 6 and 8 must be demonstrated by testing the Facultative Technologies Model FT III SE Human Crematory unit in the timeframe requested by the Agency and in accordance with Section 3.07 of Puget Sound Clean Air Agency's Regulation I.

## **Recordkeeping Requirements:**

21. All records required by this Order of Approval must be maintained for at least two years.
22. The following records shall be kept onsite, updated within 30 days at the end of each month for at least two years from the date of generation, and be made readily available to Agency personnel upon request:
  - a. Compliance test reports.
  - b. Thermocouple or pyrometer calibration test reports, including the date and results of each test, the test method used, and a record of who performed the test. If any gauge is replaced, the owner or operator shall keep a record of the date it was replaced and who replaced it.
  - c. All temperature monitoring data.
  - d. Total cremated mass in pounds and total hours of cremation operation, for each month and the resulting 12-month rolling totals. The 12-month rolling total is defined as the sum of the current month and the previous eleven (11) months.
  - e. Total number of cremations conducted each calendar day.

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- f. Operating time and weight per case.
- g. A log showing corrective actions taken to maintain the secondary chamber temperature at or above 1,600°F.
- h. A log showing corrective actions taken to maintain the opacity in the exhaust stack at or below 5 percent.

## Reporting Requirements:

- 23. For every compliance test required by this Order of Approval, a test notification must be submitted to the Puget Sound Clean Air Agency as required by Regulation I, Section 3.07. Each notification must clearly state whether modifications or alternatives to a required test method are planned.
- 24. A test plan must be submitted to the Puget Sound Clean Air Agency at least 30 days before conducting a test to demonstrate compliance with Conditions 4, 5, 6 and 8. The test plan must include the following:
  - a. Description of all test methods.
  - b. Description of modifications or alternatives to a required test method.
  - c. Quality assurance and control procedures.
  - d. Procedures and intent to monitor temperature and opacity during each test run.
  - e. Procedures and intent to calculate total mass cremated during the entire test.

## APPEAL RIGHTS

Pursuant to Puget Sound Clean Air Agency's Regulation I, Section 3.17 and RCW 43.21B.310, this Order may be appealed to the Pollution Control Hearings Board (PCHB). To appeal to the PCHB, a written notice of appeal must be filed with the PCHB and a copy served upon Puget Sound Clean Air Agency within 30 days of the date the applicant receives this Order.

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Carl Slimp  
Reviewing Engineer

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John Dawson  
Engineering Manager