



State of Utah

DEPARTMENT OF ENVIRONMENTAL QUALITY DIVISION OF AIR QUALITY

FILE COPY

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DAQE-824-94

September 29, 1994

James R. Van Orman
Hill Air Force Base
Headquarters Ogden Air Logistics Center
Dept. of the Air Force
Hill Air Force Base, Utah 84056

Re: Approval Order For Used Oil Burner/Boiler Permit Modification
Davis County CDS B NA

Dear Mr. Van Orman:

The attached document is an Approval Order for the above referenced project.

Future correspondence on this Approval Order should include the engineer's name as well as the DAQE number as shown on the upper right-hand corner of this letter. Please direct any technical questions you may have on this project to Mr. Arjun Ram. He may be reached at (801) 536-4066.

Sincerely,

Russell A. Roberts, Executive Secretary
Utah Air Quality Board

RAR:AR:dn

cc: Davis County Health Department
Mike Owens, EPA Region VIII
Cheryl Prawl, Solid & Hazardous Waste

4.2.4-434



STATE OF UTAH

Department of Environmental Quality

Division of Air Quality

APPROVAL ORDER FOR USED OIL BURNER/BOILER PERMIT MODIFICATION

Prepared By: Arjun Ram, Engineering Technician

Reviewed By: Dale Chapman, Engineer

APPROVAL ORDER NUMBER

DAQE-824-94

Date: September 29, 1994

Source

HILL AIR FORCE BASE

Russell A. Roberts
Executive Secretary
Utah Air Quality Board

Abstract

Your request dated July 18, 1994, to change Approval Order (AO) DAQE-501-92, has been reviewed. The increase for NO_x emissions from the approved used oil boiler while burning used oil is approved. The emissions were changed from 110 ppmv as stated in the original NOI to 240 ppmv. The AO has been modified to reflect the requested change (Reference conditions #5 for the changes).

This project has been evaluated and found to be consistent with the requirements of the Utah Air Conservation Rules (UACR) and the Utah Air Conservation Act. A 30-day public comment period was held and all comments received were evaluated. The conditions of this AO reflect any changes to the proposed conditions which resulted from the evaluation of the comments received. This air quality AO authorizes the project with the following conditions, and failure to comply with any of the conditions may constitute a violation of this order.

1. Hill Air Force Base shall install and operate the used oil fired boiler rated at 20.9 million BTU/hr in Building 1703 according to the information submitted in the Notice of Intent dated March 27, 1990, with additional information submitted dated October 31, 1990, and requests for modifications dated May 13, 1992, and July 18, 1994. This AO shall replace the AO DAQE-501-92, dated May 26, 1992. The boiler shall be a dual-fuel boiler with the capability of burning used oil.

A copy of this AO shall be posted on site and shall be available to the employees who operate the air emission producing equipment. All employees who operate the air emission producing equipment shall receive instruction as to their responsibilities in operating the equipment in compliance with the appropriate and relevant conditions.

2. The approved installation shall consist of the following equipment:
 - A. 500 hp Scotch Marine 3 Pass Boiler or equivalent, complete with dual (natural gas and used oil) burner - Equivalency shall be determined by the Executive Secretary.
 - B. Oil filtration system
 - C. Associated piping, control, and alarms, chemical feed pump, chemical mixing tank, and appropriate tie-ins to existing feed water and natural gas line systems
3. Visible emissions from the boiler shall not exceed 20% opacity. Opacity observation of emissions from stationary sources shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9.
4. The following fuel consumption limits for the boiler shall not be exceeded without prior approval in accordance with R307-1-3.1, UAC:
 - A. Used oil consumption - 100,000 gallons per 12-month period
 - B. Natural gas consumption - 166.89×10^6 scf per 12-month period

Compliance with the annual limitations shall be determined on a rolling 12-month total. Based on the first day of each month, a new 12-month total shall be calculated using the previous 12 months. Records of consumption shall be kept for all periods when the plant is in operation. Records of consumption shall be made available to the Executive Secretary or his representative upon request, and shall include a period of two years ending with the date of the request. Natural gas fuel consumption shall be determined by examination of records from a fuel meter. Used oil consumption for the boiler shall be determined by examination of records from the used oil transfer log. The records shall be kept on a daily basis.

5. Emissions to the atmosphere from the used oil boiler **operating with used oil** shall not exceed the following rates and concentrations:

A. SO₂

- 1) 10.3 lbs/hr
- 2) 270 ppm_{dv} (7% oxygen, dry)

B. NO_x

- 1) 6.62 lbs/hr
- 2) 240 ppm_{dv} (7% oxygen, dry)

6. Stack testing to show compliance with the emission limitations in condition #5 **operating with used oil** shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, and as directed by the Executive Secretary:

<u>Pollutant</u>	<u>Method</u>	<u>First test</u>	<u>Retest</u>
SO ₂	6	No later than 180 days after start-up	Every 5 years
NO _x	7	No later than 180 days after start-up	Every 5 years

Notification

The applicant shall provide a notification of the test date at least 45 days prior to the test. A pretest conference shall be held if directed by the Executive Secretary. It shall be held at least 30 days prior to the test between the owner/operator, the tester, and the Executive Secretary. The emission point shall be designed to conform to the requirements of 40 CFR 60, Appendix A, Method 1, and Occupational Safety and Health Administration (OSHA) or Mine Safety and Health Administration (MSHA) approved access shall be provided to the test location.

Sample Location

40 CFR 60, Appendix A, Method 1, if required by test method used

Volumetric Flow Rate

40 CFR 60, Appendix A, Method 2, if required by test method used

Calculations

To determine mass emission rates (lbs/hr, etc.), the pollutant concentration as determined by the appropriate methods above shall be multiplied by the volumetric flow rate and any necessary conversion factors determined by the Executive Secretary to give the results in the specified units of the emission limitation.

Source Operation

For a new source/emission point, the production rate during all compliance testing shall be no less than 90% of the production rate at which the facility will be operated.

7. The ash content of any used oil burned shall not exceed 0.65 percent by weight without prior approval in accordance with R307-1-3.1, UAC. The ash content shall be tested using the appropriate ASTM method if directed by the Executive Secretary.
8. Used oil may be used for fuel, except that oil which contains more than 1000 ppm by weight of total halogen shall be considered hazardous and shall be treated as a hazardous waste and shall not be burned in the boiler. The halogen content shall be tested by ASTM Method D-808-81 before used oil is transferred to the boiler tank and burned.
9. Used oil which does not exceed the following listed contaminants content is considered to be specification used oil per Used Oil Regulation 40 CFR 266 Subpart E § 266.40:
 - A. Total halogens 1000 ppm by weight
 - B. Cadmium 2 ppm by weight
 - C. Chromium 10 ppm by weight
 - D. Lead 100 ppm by weight
 - E. Arsenic 5 ppm by weight

In addition, the nitrogen content of the used oil shall not exceed 0.3% (by weight) and the sulfur content of the used oil shall not exceed 0.5% (by weight). The flash point of the used oil shall not be less than 100 degrees Fahrenheit.

The owner/operator shall provide test certification for each load of used fuel oil from 55 gallon drums or bulk carrier. Certification shall be either by his own testing or test

reports from a testing contractor. Records of used fuel oil consumption and the test reports shall be kept for all periods when the plant is in operation. The records shall be made available to the Executive Secretary or his representative upon request, and shall include a period of two years ending with the date of the request.

Used oil which does exceed the above listed contaminants content is considered to be off-specification used oil per Used Oil Regulation 40 CFR 266 Subpart E § 266.40 and may be used except for halogens, but they are subject to the record keeping provisions of § 266.43.

10. In addition to the requirements of this AO, all provisions of 40 CFR 60, new source performance standards (NSPS) Subparts A and Dc apply to this installation. Consult 40 CFR 60 for additional details on this regulation.

For sources which are subject to NSPS (provided there is an opacity standard in the applicable NSPS), visible emission observations which are performed during the initial compliance inspection shall consist of 30 observations of six minutes each in accordance with 40 CFR 60.11(b) and 40 CFR 60, Appendix A, Method 9. It is the responsibility of the owner/operator of the source to supply these observations to the Executive Secretary. A certified observer must be used for these observations. Emission points which are subject to the initial observations are the boiler stacks.

11. All installations and facilities authorized by this AO shall be adequately and properly maintained. The owner/operator shall comply with R307-1-3.5 and 4.7, UAC. R307-1-3.5, UAC addresses emission inventory reporting requirements. R307-1-4.7, UAC addresses unavoidable breakdown reporting requirements. The owner/operator shall calculate/estimate the excess emissions whenever a breakdown occurs. The sum total of excess emissions shall be reported to the Executive Secretary for each calendar year no later than January 31 of the following year.
12. The Executive Secretary shall be notified in writing upon start-up of the installation as an initial compliance inspection is required. Eighteen months from the date of this AO the Executive Secretary shall be notified in writing of the status of construction/installation if construction/installation is not completed. At that time, the Executive Secretary shall require documentation of the continuous construction/installation of the operation and may revoke the AO in accordance with R307-1-3.1.5, UAC.

Any future modifications to the equipment approved by this order must also be approved in accordance with R307-1-3.1.1, UAC.

This AO in no way releases the owner or operator from any liability for compliance with all other applicable federal, state, and local regulations including the UACR.

Annual emissions for this boiler are calculated at:

2.85 tons/yr for Particulates
2.85 tons/yr for PM₁₀
3.75 tons/yr for SO₂
10.86 tons/yr for NO_x
3.17 tons/yr for CO
0.33 tons/yr for VOC
0.0008 ton/yr for Barium
0.0013 for Cadmium
0.0011 ton/yr for Chromium
0.0358 ton/yr for Lead

These calculated emission rates are for the purposes of determining the applicability of prevention of significant deterioration (PSD) and nonattainment area major source requirements of the UACR. They are not to be used for purposes of determining compliance.

Approved By:



Russell A. Roberts, Executive Secretary
Utah Air Quality Board