

Covered Source Permit (CSP) No. 0442-02-C Review
Application for Significant Modification No. 0442-06

Applicant: United Laundry Services, Inc.

Equipment Description:

Modification to add:
250 HP (9.8 MMBtu/hr input) synthetic natural gas (SNG) / fuel oil no. 2 fired Miura
steam-generating boiler (model no. EX-250-SGO, serial no. tbd)

Equipment Location/Mailing Address: 2291 Alahao Place
Honolulu, Hawaii 96819 (Oahu)

Point of Contact: Howard Najita
Plant Manager
Cel: 295-2232

Responsible Official: Vicky T. Cayetano
President and C.E.O.
Ph: 842-5994 Fax: 841-3246
E-mail: ulsvcs@gte.net

Consultant: Jim Morrow
Environmental Management Consultant
1481 South King Street, Suite 548
Honolulu, HI 96814
Ph: 942-9096

Proposed Project:

This application proposes to add a smaller 250 HP boiler to the existing two (2) 500 HP boilers at the facility. The applicant proposed to operate only two (2) boilers at a time and keep the remaining permit conditions. Therefore, there will be no change in operations nor increase in emissions. A new ambient air quality assessment was conducted since the 250 HP boiler's stack parameters will be different from the existing boilers. The Standard Industrial Classification Code (SICC) is 7218 - Industrial Launderers.

This review for a significant modification to a non-toxic, non-major CSP is based on the application dated 6/12/07. The application fee of \$500 will be processed with the issuance of this permit. Also, CSP No. 0442-02-C dated February 15, 2005 will be partially amended upon issuance of this permit.

Applicable Requirements:

Hawaii Administrative Rules (HAR) Title 11 Chapter 59
Hawaii Administrative Rules (HAR) Title 11 Chapter 60.1:
Subchapter 1 - General Requirements
Subchapter 2 - General Prohibitions

11-60.1-32 Visible Emissions
11-60.1-38 Sulfur Oxides From Fuel Combustion
Subchapter 5 - Covered Sources
Subchapter 6 - Fees for Covered Sources, Sections 111-115
Subchapter 8 - New Source Performance Standards

Non-Applicable Requirements:

NSPS 40 CFR Part 60

Subpart D is not applicable because the 250 HP boiler is smaller than 250 MMBtu/hr.

Subpart Da is not applicable because the 250 HP boiler is not an electric steam generating unit.

Subpart Db is not applicable because the 250 HP boiler is smaller than 100 MMBtu/hr.

Subpart Dc is not applicable because the 250 HP boiler is smaller than 10 MMBtu/hr.

40 CFR Part 61 and 63 - National Emission Standard for Hazardous Air Pollutants (NESHAPS) and Maximum Achievable Control Technology (MACT) is not applicable since there is no standard for this source category.

Prevention of Significant Deterioration (PSD) review is not applicable since this is not a major stationary source.

Compliance Assurance Monitoring (CAM) is to provide a reasonable assurance that compliance is being achieved with large emissions units that rely on air pollution control device equipment to meet an emissions limit or standard. Pursuant to 40 CFR, Part 64, for CAM to be applicable, the emissions unit must: (1) be located at a major source; (2) be subject to an emissions limit or standard; (3) use a control device to achieve compliance; (4) have potential precontrol emissions that are greater than the major source level [>100 tpy]; and (5) not otherwise be exempt from CAM. CAM is not applicable to the facility since items 1,3, 4, and 5 do not apply.

Consolidated Emissions Reporting Rule (CERR) is still not applicable since the potential individual criteria pollutant emissions from the facility are less than 100 tpy each when restricted to the operational limits. However, internal annual emissions reporting is required since potential SO₂ emissions is greater than 25 tpy. There is no change in potential emissions.

A Best Available Control Technology (BACT) analysis is required for new sources or modifications to existing sources that would result in a net significant emissions increase as defined in HAR, Section 11-60.1-1. This is an existing source with no change in emissions. Therefore, a BACT analysis was not performed.

Synthetic Minor is not applicable since potential individual air pollutant emissions are less than 100 tpy (major source) if this source was to operate 8,760 hr/yr.

Insignificant Activities/Exemptions:

No change from the previous application no. 0442-05 review.

Alternative Operating Scenarios:

The applicant proposed to operate the two (2) existing 500HP boilers simultaneously as needed when the new 250 HP boiler goes down. However, this is not an alternative operating scenario since it will be considered a normal operating scenario. A new permit condition will state that only two (2) boilers may operate simultaneously.

Project Emissions:

There is no potential increase in emissions since the 250 HP boiler is much smaller than the existing 500 HP boilers. Although the manufacturer's data show that the hourly CO emissions from the 250 HP boiler is unusually high (when using fuel oil no. 2), the hourly CO emissions from the 500 HP boiler is still greater (when using synthetic natural gas). Since there is no change in potential emissions, please refer to the previous application no. 0442-05 review for potential emissions and details.

Ambient Air Quality Assessment (AAQA):

There is no potential increase in emissions, however a new AAQA was performed by the applicant since the stack parameters of the new, smaller boiler is different. An AERMOD (version 07026) modeling program was used to determine source compliance with National and State ambient air quality standards (NAAQS and SAAQS). The model, methodology, and assumptions employed in the AAQA have been determined to be consistent with State and Federal guidelines.

AERMET (v.06341) was used to determine representative meteorological data for the source. One year of surface data (1995) from the nearby Honolulu International Airport and upper air data (1995) from the Lihue Airport were processed.

AERMAP (v.06341) was used to determine the receptor x,y,z coordinates. A grid of 1,125 receptors with 30 meter spacing was created from USGS DEM files in the source's area.

BPIP (Prime) was used to generate nearby building dimensions that may create downwash.

The output files from AERMET, AERMAP, and BPIP were used in AERMOD to determine potential concentrations. The worst case emission rates were used for an existing boiler as well as the new 250 HP boiler (the proposed permit condition will be to operate two boilers simultaneously at the most, see **Table 1**). Annual concentrations included using the 1,000,000 gal/yr of fuel oil no. 2 permit limit. The predicted ambient air quality impacts include representative background concentrations (see **Table 2**).

Table 1
Source Emission Rates and Stack Parameters for Air Modeling

| Source | | Emission Rates ¹ | | | | | Stack Parameters | | | |
|---------------|-----------|-----------------------------|--------------------------|-------------|---------------------------|-------------|----------------------------|---------------------------|--------------------------------|-----------------|
| Equipment | Stack No. | SO ₂ (g/s) | NO _x (g/s) | CO (g/s) | PM ₁₀ (g/s) | Pb (g/s) | Height ⁴ (m) | Temp. ⁵ (K) | Velocity ⁵ (m/s) | Diameter (m) |
| 500 HP Boiler | 1 | 1.337 | 0.187 | 0.184 | 0.032 | -- | 15.24 | 505 | 11.6 | 0.609 |
| 500 HP Boiler | 2 | 1.337 | 0.187 | 0.184 | 0.032 | -- | 15.24 | 505 | 11.6 | 0.609 |
| 250 HP Boiler | 3 | 0.615 | 0.108 | 0.043 | 0.009 | -- | 15.24 | 405 | 7.7 | 0.51 |
| | | | | | | | | | | |
| | | | | | | | | | | |

Note:

1. The emission rates are for fuel oil no. 2 for comparison purposes. The worst case scenario would include using SNG for CO emission rates.
2. The stack height reflect actual conditions.
3. The stack temperature and velocity are for the combustion of fuel oil no. 2 only.

Table 2
Predicted Ambient Air Quality Impacts

| Air Pollutant | Averaging Time | Impact ¹ ($\mu\text{g}/\text{m}^3$) | Background ² ($\mu\text{g}/\text{m}^3$) | Total Impact ($\mu\text{g}/\text{m}^3$) | Air Standard ($\mu\text{g}/\text{m}^3$) | Percent Standard | Impact Location (x,y,z) ³ |
|-------------------------------|---------------------|---|---|--|--|---------------------|---|
| SO ₂ | 3-Hour | 603 | 75 | 678 | 1300 | 52% | |
| | 24-Hour | 334 | 23 | 357 | 365 | 98% | |
| | Annual ⁴ | 57.6 | 1 | 58.6 | 80 | 73% | |
| NO ₂ ⁵ | Annual ⁴ | 17.4 | 9 | 26.4 | 70 | 38% | |
| CO | 1-Hour | 96.6 | 3876 | 3972.6 | 10000 | 40% | |
| | 8-Hour | 52.1 | 1610 | 1662.1 | 5000 | 33% | |
| PM ₁₀ | 24-Hour | 7.0 | 32 | 39 | 150 | 26% | |
| | Annual ⁴ | 1.2 | 16 | 17.2 | 50 | 34% | |
| Pb ⁶ | Calendar Quarter | -- | -- | -- | 1.5 | 0% | -- |
| H ₂ S ⁶ | 1-Hour | -- | -- | -- | 35 | 0% | -- |

Note:

1. The impact concentrations are the maximum emissions for one 500 HP boiler and one 250 HP boiler operating simultaneously.
2. The background concentrations are values for CY 2005 at Kapolei for NO₂, Liliha for PM₁₀, and Honolulu for all others.
3. (x,y,z) = (meters, meters, meters) the UTM coordinates and elevations of the receptor locations.
4. The Annual concentrations are based on operating at maximum capacity for 1,000,000 gal/yr of fuel oil no. 2.
5. Assumed all NO_x concentrations = NO₂.
6. Pb and H₂S emissions are assumed to be negligible at this facility.

Other Issues:

None.

Significant Existing Permit Conditions:

1. The total fuel oil no. 2 consumption by the two (2) boilers shall not exceed 1,000,000 gallons in any rolling twelve (12) month period.
2. Standard boiler conditions.

Significant New Permit Conditions:

1. No more than two (2) boilers may operate simultaneously.

Conclusion and Recommendation:

In conclusion, it is the Department of Health's preliminary determination that the facility will comply with all State and Federal laws, rules, regulations, and standards with regards to air pollution. Therefore, a significant modification for CSP No. 0442-02-C for United Laundry Services, Inc. is recommended based on the information provided in the air permit application and subject to the following:

1. Above special permit conditions;
2. 30-day public review period; and
3. 45-day EPA review period.