217/782-2113

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT – REVISED

PERMITTEE

Hamilton Sundstrand
Attn: Larry Carlson
4747 Harrison Avenue
P.O. Box 7002
Rockford, Illinois 61125-7002

Application No.: 73100101
Applicant's Designation: CELL50PLT1
Subject: Aerospace Equipment Manufacturing
Date Issued: May 29, 2003
Location: 2421-11th Street, Rockford

I.D. No.: 201030AEU
Date Received: May 16, 2003

Expiration Date: December 31, 2006

This permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of several natural gas fired Combustion units (Plant 1 boilers, and emergency generator); three engines with 3-way catalytic converters, a diesel fired emergency generator and an emergency fire pump; Plant 1 surface coating operations and cleaning operations (cold cleaning, four open top vapor degreasers, 6 paint spray booths, etc.); and miscellaneous operations (test cells, storage tanks, welding, wave soldering, packaging foam and cooling towers) pursuant to the above-referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1a. This federally enforceable state operating permit is issued to limit the emissions of air pollutants from the source to less than major source thresholds (i.e., 100 tons/year each for nitrogen oxides, carbon monoxide and volatile organic materials). As a result the source is excluded from the requirements to obtain a Clean Air Act Permit Program (CAAPP) permit. The maximum emissions of this source, as limited by the conditions of this permit, are described in Attachment A.

b. Prior to issuance, a draft of this permit has undergone a public notice and comment period.

c. This permit supersedes all operating permits issued for this location.

2a. Emissions and operation of the external combustion units shall not exceed the following limits:

i.

Item of Equipment	Natural Gas Usage (mmscf/Mo)	Natural Gas Usage (mmscf/Yr)	Pollutant	Emission Factor (Lb/mmscf)	Emissions (T/Mo)	Emissions (T/Yr)
Combustion Units (Total)(Boilers, Heaters, etc.)	15.0	57.0	NO_x	100	0.75	2.9
			CO	84	0.63	2.4

ii.

Item of Equipment	Horsepower Rating (HP)	Hours of Operation (Hr/Yr)	E M I S S I O N S NO_x (Gr/HP-Hr)	NO_x (T/Yr)	CO (Gr/HP-Hr)	CO (T/Yr)
Emergency Generator	355	100	14.0	0.55	3.03	0.12
Emergency Fire Pump	185	100	14.0	0.3	3.03	0.1
Emergency Generator	248	75	20.0	0.41	35.0	0.72

iii. A. Natural gas consumption and emissions of nitrogen oxides (NO_x), carbon monoxide (CO) and volatile organic materials (VOM) from the 14.9 mmBtu/hr engines shall not exceed the following limits:

Item of Equipment	Horsepower Rating (HP)	Hours of Operation (Hr/Mo)	(Hr/Yr)
Engine (Each)	1,752	-----	------
Engines (Total)	-----	1,134	11,340

Material	Total Consumption (mmscf/Hr)	(mmscf/Yr)	Pollutant	Emission Factor		Emissions (T/Mo)	(T/Yr)
Natural Gas	15.6	156	NO_x	0.0287	lb/hp-hr	4.3	42.8
			CO	0.022	lb/hp-hr	4.4	43.7
			PM	10	lb/mmscf	0.1	0.8
			VOM	0.0011	lb/hp-hr	0.6	5.5

B. Only natural gas shall be burned in the engines.

C. Compliance with annual limits shall be determined from a running total of the current month and the previous 11 months of data.

D. Emissions of nitrogen oxides (NO_x), carbon monoxide (CO) and volatile organic material (VOM) from the engines shall be controlled by 3-way catalytic converters, which shall be operated to provide 85%, 80%, and 50% control efficiency for NO_x, CO and VOM respectively.

iv. Emissions of NO_x and CO from miscellaneous activities (test cells, etc.) shall not exceed: 1.0 tons/year of NO_x, 2.0 tons/year of CO.

b. Compliance with annual limits shall be determined from a running total of the current month and the previous 11 months of data.

3. Emissions and operation of the coating and cleaning operations shall not exceed the following limits:

Process	Material	Usage Rate (Gal/Mo)	(Gal/Yr)	Maximum VOM Content* (Lb/Gal)	VOM Emissions (Lb/Mo)	(T/Yr)
Surface Coating	Coating & Thinner	40	250	7.00	280	0.9
Coating Additive	Xylene	10	165	7.30	73	0.6
Cleanup	MEK & Methanol	80	800	7.00	560	2.8
Cold Cleaning**	Stoddard Solvents	5,000	50,000	6.67	3,335	16.7
Cold Cleaning Degreasing	Isopropanol	198	1,980	6.60	1,307	6.5
Vapor Degreasers	1-bromopropane	400	4,800	11.25	4,500	27.0
				Total:	10,055	54.5

* Minus water and exempt compounds.

** Emissions assumed to be 10% of solvent used (based on in-house data)

4. The emissions of Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Clean Air Act shall not equal or exceed 10 tons per year of any single HAP or 25 tons per year of any combination of such HAPs, or such lesser quantity as USEPA may establish in rule which would require the Permittee to obtain a CAAPP permit from the Illinois EPA. As a result of this condition,

this permit is issued based on the emissions of any HAP from this source not triggering the requirement to obtain a CAAPP permit from the Illinois EPA.

5a. This permit is issued based on negligible emissions of particulate matter from the coating operations. For this purpose emissions shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.

b. Emissions of VOM from miscellaneous activities (i.e., the gasoline, waste oil, fuel oil and JP-4), storage tanks, welding, wave soldering, and packaging foam shall not exceed: 2.44 tons/year.

c. This permit is also issued based on negligible emissions of VOM from gearbox test cell 50. For this reason, emissions shall not exceed 8 lb/hr pursuant to 35 Ill. Adm. Code 215.301 and 0.44 ton/yr.

6. This permit is issued based on the plant meeting the exemption requirements of 35 Ill. Adm. Code Section 215.206(a)(2). The total usage of the coating plant as addressed in this permit does not exceed 9,463 l/yr (2,500 gal/yr).

   a. If the total coating usage exceeds 9,463 l/yr (2,500 gal/yr), the coating operations are subject to the emission limitations of Part 215, Subpart F, e.g., the VOM content of extreme performance coatings applied to miscellaneous metal parts and products shall not exceed 3.5 lb/gallon.

   b. By March 1, following a calendar year in which the total coating usage exceeds 9.463 lb/yr (2,500 gal/yr), the Permittee shall submit a report addressing compliance with Part 215, Subpart F, including a listing of coatings at the plant subject to Subpart F, the typical usage of each coating and the VOM content as applied.

7. In the event that the operation of this source results in an odor nuisance the Permittee shall take appropriate and necessary actions to minimize odors, including but not limited to, changes in raw material or installation of controls, in order to eliminate the odor nuisance.

8. At all times the Permittee shall to the extent practicable maintain and operate the equipment, including associated air pollution control equipment, in a manner consistent with good pollution control practices for minimizing emissions.

9. The Permittee shall comply with the following operating requirements for open top vapor degreasers, pursuant to 35 Ill. Adm. Code 215.183:

   a. The cover of the degreaser must be closed when workloads are not being processed through the degreaser.

   b. Solvent carryout emissions must be minimized by:

      i. Racking parts to allow complete drainage;

      ii. Moving parts in and out of the degreaser at less than 3.3 m/min (11 ft/min);

      iii. Holding the parts in the vapor zone until condensation ceases;

iv. Tipping out any pools of solvent on the cleaned parts before removal from the vapor zone; and

v. Allowing parts to dry within the degreaser until visually dry.

c. Porous or absorbent materials, such as cloth, leather, wood or rope must not be degreased.

d. Less than half of the degreaser's open top area must be occupied with a workload.

e. The degreaser must not be loaded to the point where the vapor level would drop more than 10 cm (4 in) when the workload is removed from the vapor zone.

f. Spraying must be done below the vapor level only.

g. Solvent leaks must be repaired immediately.

h. Waste solvent must be stored in covered containers only and not disposed of in such a manner that more than 20% of the waste solvent (by weight) is allowed to evaporate into the atmosphere.

i. Water must not be visually detectable in solvent exiting from the water separator.

j. Exhaust ventilation exceeding 20 cubic meters per minute per square meter (65 cubic feet per minute per square foot) of degreaser open area must not be used, unless necessary to meet the requirements of the Occupational Safety and Health Act (29 U.S.C. Section 651 et seq.)

10. The Permittee shall comply with the following equipment requirements for open top vapor degreasers, pursuant to 35 Ill. Adm. Code 215.183:

a. The degreaser must be equipped with a cover designed to open and close easily without disturbing the vapor zone.

b. The degreaser must be equipped with the following switches:

i. A device which shuts off the sump heat source if the amount of condenser coolant is not sufficient to maintain the designed vapor level;

ii. A device which shuts off the spray pump if the vapor level drops more than 10 cm (4 in) below the bottom condenser coil; and

iii. A device which shuts off the sump heat source when the vapor level exceeds the design level.

c. A permanent conspicuous label summarizing the operating procedure must be affixed to the degreaser.

d. The degreaser must be equipped with one of the following devices:

i. A freeboard height of 3/4 of the inside width of the degreaser tank or 91 cm (36 in), whichever is less; and if the degreaser

opening is greater than 1 square meter (10.8 square feet), a powered or mechanically assisted cover; or

ii. Any other equipment or system of equivalent emission control as approved by the Illinois EPA. Such equipment or system may include a refrigerated chiller, an enclosed design or a carbon adsorption system.

11. The Permittee shall comply with the following operating requirements for cold cleaning degreasers, pursuant to 35 Ill. Adm. Code 215.182:

a. Waste solvent shall be stored in covered containers only and not disposed of in such a manner that more than 20% of the waste solvent (by weight) is allowed to evaporate into the atmosphere.

b. The cover of the degreaser shall be closed when parts are not being handled and parts are drained until dripping ceases.

c. The degreaser must be equipped with a cover which is closed whenever parts are not being handled in the cleaner.

12. The Permittee shall comply with the following equipment requirements for cold cleaning degreasers, pursuant to 35 Ill. Adm. Code 215.182:

a. The degreaser must be equipped with a cover which is closed whenever parts are not being handled in the cleaner. The cover shall be designed to be easily operated with one hand or with the mechanical assistance of springs, counterweights, or a powered system if:

i. The solvent vapor pressure is greater than 2 kPa (15 mmHg or 0.3 psi) measured at 38°C (100°F);

ii. The solvent is agitated; or

iii. The solvent is heated above ambient room temperature.

b. The degreaser must be equipped with a facility for draining cleaned parts. The drainage facility shall be constructed so that parts are enclosed under the cover while draining unless:

i. The solvent vapor pressure is less than 4.3 kPa (32 mmHg or 0.6 psi) measured at 38°C (100°F); or

ii. An internal drainage facility cannot be fitted into the cleaning system, in which case the drainage facility may be external.

c. The degreaser must be equipped with one of the following control devices if the vapor pressure of the solvent is greater than 4.3 kPa (32 mmHg or 0.6 psi) measured at 38°C (100 1/4°F) or if the solvent is heated above 50°C (120°F) or its boiling point:

i. A freeboard height of 7/10 of the inside width of the tank or 91 cm (36 in), whichever is less; or

ii. Any other equipment or system of equivalent emission control as approved by the Illinois EPA. Such a system may include a water cover, refrigerated chiller or carbon adsorber.

d. A permanent conspicuous label summarizing the operating procedure must be affixed to the degreaser.

e. If a solvent spray is used, the degreaser must be equipped with a solid fluid stream spray, rather than a fine, atomized or shower spray.

13. The Permittee shall maintain monthly records of the following items:

a. Usage rates of natural gas for Plant 1 Combustion Units (mmscf/mo and mmscf/yr;

b. Fuel consumption of all engines combined (mmscf/mo and mmscf/yr;

c. Operation of each 3-way catalytic converter;

d. Hours of operation for the emergency pump, generators, gearbox test cell 51 and three engines (hrs/mo and hrs/yr);

e. Usage rates, VOM and HAP content of all paints, thinners, coating additives, cleaning solvents and degreasing solvents (gal/mo and gal/yr and lb VOM/gal);

f. Oil loss for gearbox test cell 50 (gal/mo and gal/yr); and

g. Detailed calculations of plantwide VOM, NO_x, and CO emissions.

14. All records and logs required by this permit shall be retained at a readily accessible location at the source for at least three years from the date of entry and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request. Any records retained in an electronic format (e.g., computer) shall be capable of being retrieved and printed on paper during normal source office hours so as to be able to respond to an Illinois EPA or USEPA request for records during the course of a source inspection.

15. If there is an exceedance of the requirements of this permit as determined by the records required by this permit, the Permittee shall submit a report to the Illinois EPA's Compliance Section in Springfield, Illinois within 30 days after the exceedance. The report shall include the emissions released in accordance with the recordkeeping requirements, a copy of the relevant records, and a description of the exceedance or violation and efforts to reduce emissions and future occurrences.

16. Two (2) copies of required reports and notifications concerning equipment operation or repairs, performance testing or a continuous monitoring system shall be sent to:

Illinois Environmental Protection Agency
Division of Air Pollution Control
Compliance Section (#40)
P.O. Box 19276
Springfield, Illinois 62794-9276

and one (1) copy shall be sent to the Illinois EPA's regional office at the following address unless otherwise indicated:

Illinois Environmental Protection Agency
Division of Air Pollution Control
5415 North University
Peoria, Illinois 61614

17. The Permittee shall submit the following additional information with the Annual Emission Report, due May 1st of each year: type of fuel and fuel usage rates and paint/thinner/solvent usage for the prior calendar year. If there have been no exceedances during the prior calendar year, the Annual Emission Report shall include a statement to that effect.

18. This permit is being issued based on the "patch test" process meeting the exemption requirements specified in 35 Ill. Adm. Code 215.181(b). As a result, the emissions from the "patch test" process shall not exceed 800 pounds in any calendar month.

It should be noted that this permit has been revised to incorporate Construction Permit #02030049 to include a replacement vapor degreaser without any net increase in VOM emissions from the current limits.

Please also note that the gearbox test cell from Construction Permit 03050054 has been incorporated into this permit.

If you have any questions on this, please call Randy Solomon at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

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cc: Region 2

Attachment A

This attachment provides a summary of the maximum emissions from this facility operating in compliance with the requirements of this federally enforceable permit. In preparing this summary, the Illinois EPA used the annual operating scenario which results in maximum emissions from such a plant. The resulting maximum emissions are well below the levels, e.g., 100 tons/year of NO_x, CO, and VOM at which this source would be considered a major source for purposes of the Clean Air Act Permit Program. Actual emissions from this source will be less than predicted in this summary to the extent and control measures are more effective than required in this permit.

1a. Emissions from the external combustion units:

i.

Item of Equipment	Natural Gas Usage (mmscf/Mo)	Natural Gas Usage (mmscf/Yr)	Pollutant	Emission Factor (Lb/mmscf)	Emissions (T/Mo)	Emissions (T/Yr)
Combustion Units (Total) (Boilers, Heaters, etc.)	15.0	57.0	NO_x	100	0.75	2.9
			CO	84	0.63	2.4

ii.

Item of Equipment	Horsepower Rating (HP)	Hours of Operation (Hr/Yr)	E M I S S I O N S NO_x (Gr/HP-Hr)	NO_x (T/Yr)	CO (Gr/HP-Hr)	CO (T/Yr)
Emergency Generator	355	100	14.0	0.55	3.03	0.12
Emergency Fire Pump	185	100	14.0	0.3	3.03	0.1
Emergency Generator	248	75	20.0	0.41	35.0	0.72

iii. Natural gas consumption and emissions of nitrogen oxides (NO_x), carbon monoxide (CO) and volatile organic materials (VOM) from the 14.9 mmBtu/hr engines shall not exceed the following limits:

Item of Equipment	Horsepower Rating (HP)	Hours of Operation (Hr/Mo)	Hours of Operation (Hr/Yr)
Engine (Each)	1,752	-----	-----
Engines (Total)	-----	1,134	11,340

Material	Total Consumption (mmscf/Hr)	Total Consumption (mmscf/Yr)	Pollutant	Emission Factor	Emissions (T/Mo)	Emissions (T/Yr)

Natural Gas	15.6	156	NO_x	0.0287	lb/hp-hr	4.3	42.8
			CO	0.022	lb/hp-hr	4.4	43.7
			PM	10	lb/mmscf	0.1	0.8
			VOM	0.0011	lb/hp-hr	0.6	5.5

iv. Emissions of NO_x and CO from miscellaneous activities (test cells, etc.) shall not exceed: 1.0 tons/year of NO_x, 2.0 tons/year of CO.

b. Emissions from the coating and cleaning operations:

Process	Material	Usage Rate (Gal/Mo)	Usage Rate (Gal/Yr)	Maximum VOM Content* (Lb/Gal)	VOM Emissions (Lb/Mo)	VOM Emissions (T/Yr)
Surface Coating	Coating & Thinner	40	250	7.00	280	0.9
Coating Additive	Xylene	10	165	7.30	73	0.6
Cleanup	MEK & Methanol	80	800	7.00	560	2.8
Cold Cleaning**	Stoddard Solvents	5,000	50,000	6.67	3,335	16.7
Cold Cleaning Degreasing	Isopropanol	198	1,980	6.60	1,307	6.5
Vapor Degreasers	1-bromopropane	400	4,800	11.25	4,500	27.0
				Total:	10,055	54.5

* Minus water and exempt compounds.

** Emissions assumed to be 10% of solvent used (based on in-house data)

c. Emissions of VOM from miscellaneous activities (i.e., the gasoline, waste oil, fuel oil and JP-4), storage tanks, welding, wave soldering, and packaging foam shall not exceed: 2.44 tons/year.

d. The emissions of Hazardous Air Pollutants (HAPs) as listed in Section 112(b) of the Clean Air Act shall not equal or exceed 10 tons per year of any single HAP or 25 tons per year of any combination of such HAPs, or such lesser quantity as USEPA may establish in rule which would require the Permittee to obtain a CAAPP permit from the Illinois EPA. As a result of this condition, this permit is issued based on the emissions of any HAP from this source not triggering the requirement to obtain a CAAPP permit from the Illinois EPA.

2a. This permit is issued based on negligible emissions of particulate matter from the coating operations. For this purpose emissions shall not exceed nominal emission rates of 0.1 lb/hour and 0.44 ton/year.

b. Emissions of VOM from miscellaneous activities (i.e., the gasoline, waste oil, fuel oil and JP-4), storage tanks, welding, wave soldering, and packaging foam shall not exceed: 2.44 tons/year.

c. This permit is also issued based on negligible emissions of VOM from gearbox test cell 50. For this reason, emissions shall not exceed 8 lb/hr pursuant to 35 Ill. Adm. Code 215.301 and 0.44 ton/yr.

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