PERMIT TO CONSTRUCT AND OPERATE EVALUATION (NICKELPOWDER APPLICATION SYSTEM)

Applicant's Name	**HONEYWELL INTERNATIONAL**
Company I.D.	**800003**
Mailing Address	**2525 W. 190TH STREET, TORRANCE, CA 90504**
Equipment Address	**SAME AS ABOVE**

EQUIPMENT DESCRIPTION

Application No. 515813 (Modification, Previous A/N 475878, P/N G78265)(P/C)

MODIFICATION OF THE NICKEL/TITANIUM POWDER APPLICATION EQUIPMENT UNDER P/O G7826 (A/N 475878) BY DELETING DEVICES D223, D224, D227, C225) FOR TITANIUM POWDER APPLICATION; BY INSTALLING A HEPA FILTER UNIT (D232); AND BY INCREASING THE ANNUAL HOURS OF OPERATION USAGE LIMIT FOR NICKEL POWDER APPLICATION SYSTEM FROM 130 HOURS TO 2400 HOURS, WITH THE FOLLOWING EQUIPMENT DESCRIPTION:

CONVEYORIZED NICKEL POWDER APPLICATION SYSTEM, CONSISTING OF:

1. ROLLER COATER, UNION TOOL CORP., MODEL C, SERIES # 45, WITH 2' – 2" LONG ROLLS TO APPLY AQUEOUS BASED BINDER (GLUE). (D219)

2. NICKEL POWDER HOPPER. (D220)

3. NICKEL POWDER DEPOSITOR, CHRISTY MACHINE CO., COAT-O-MATIC, MODEL 24-DE-S, WITH A 0.25 H.P. MOTOR. (D221)

4. DUST COLLECTOR FOR NICKEL POWDER, TORRIT, MODEL NO. TD162, WITH THREE CARTRIDGE FILTERS, EACH 0' - 8" DIA. X 1' – 4" L., 162 SQ. FT. FILTER AREA, AND AUTOMATIC AIR-PULSE JET CLEANING SYSTEM. (C222)

5. HEPA FILTRATION SYSTEM FOR NICKEL POWDER, TORRIT, MODEL NO. 1 X 1, 2' – 4" H. X 2' – 2" W. X 1' – 11" D., WITH ONE 2' - 0" X 2' – 0" ULTRA-LOK HEPA FILTER (C232)

6. CONVEYOR. (D228)

7. VACUUM BLOWER. (D226)

8. OVEN, CASSO-SOLAR, MODEL NO. FB QUART, WITH INFRARED HEATERS, TOTAL 72 KW. (D229)

Application No. 515812

RECLAIM/TITLE V REVISION

HISTORY

The above application was filed with the District for the modification of the previously permitted nickel and titanium powder application system to remove the titanium powder application devices, to install a HEPA filtration unit in the nickel powder application system, and to increase the hours of operation for nickel powder application from 130 hours per year to 2400 hours per year.

This system is conveyorized and will be consisting of a rollercoater, powder depositor, dust collector, heap filter and an electric oven. The application process involves glue application on metal plates, powder deposition by sprinkling, excess powder collection in dust a collector, and heating in the oven. Under this project the applicant is proposing to install a HEPA filtration system with 99.97% control efficiency for the particulate emission control. The applicant expects to reduce the nickel emissions with the installation of a HEPA filter. This will comply with the current BACT and Rule 1401 requirements.

Honeywell International fabricates aerospace components (stainless steel, aluminum and titanium). It has a number of active permits from the District to operate plasma arc cutters, spray booths, coating dip-tanks, surface preparation lines, jet engine test cells, dust collectors, I.C. Engines, scrubbers, ovens, rollercoaster, heaters, boilers, afterburners, etc. under a RECLAIM/Title V permit (I.D. # 800003).

The District database shows that the applicant has received one complaint from the public for contaminated soil removal in the last two years. The complaint was referred to the Refinery unit for further action as it was not associated with this facility. The applicant did not receive any notice of violation or notice to comply from the district compliance staff in the last two years.

This facility is located in an industrial area and no schools are located within 1000 feet from the property-line. Also, there will be reduction in the emissions under this project. Thus, Rule 212 public notice is not required for this project.

A Title V renewal permit for this facility was issued on March 25, 2010. The proposed project is considered as a "minor permit revision" to the renewed Title V permit, as described in the Regulation XXX evaluation. This is the second revision since the TV permit renewal was issued.

PROCESS DESCRIPTION

Honeywell is a leading producer of aerospace components for commercial and military aircraft. In one of their product, they use a roller coating system to apply brazing powder (nickel) to sheet metal parts.

First the roller coater machine applies a thin layer of water-based polymer binder (Celvol 540) to metal sheets as they roll through the system. Binder is mixed on site, by mixing Celvol 540 powder in water. There are no VOCs or toxics in this product.

Next a powder metal depositor dispenses powdered nickel (Nicrobraz 130) to coat the sheets, adhering to the binder layer. The depositor is designed to apply an even and controllable amount of nickel powder. The transfer efficiency is about 31%. The company performed a test to determine the particle size of the powders. Less than 10% particle size was in PM10 range.

A tray under the depositor area collects excess powder that falls off the sheets. This system has vacuum to collect all the not deposited metal powder with no particulate emissions. This powder material containing air is conveyed pneumatically to a Torrit dust collector. The applicant is proposing to vent the exhaust of the dust collector to a HEPA filter to control any PM10 emissions. The reclaimed nickel powder go back to metal depositor (hopper) for reuse. The dust capture efficiency of the cartridge and HEPA filter will be is at least 99.97%.

The coated sheet metal plates are then transferred via conveyor to an electric infrared oven to set the binder and the metal powder prior to brazing in a vacuum furnace. The vacuum furnace is not part of this process and has been permitted separately.

OPERATING HOURS

Average : 1 hour/day, 5 day/week, 50 weeks/year
Maximum: 8 hour/day, 6 days/week, 50 weeks/year

EMISSION CALCULATIONS

The sheet metal parts are put on the conveyor manually. The metal depositor is programmed to release the powder only when the metal goes under the depositor. Thus, the metal powder depositor is anticipated to operate only 30% of the stated time. This is a batch process and is not performed continuously. An hour meter tracks the operating time for the depositor, when it releases the powder on the components.

This powder metal application system reclaims excess powder. The dust collector separates powder from the air stream and returns it for re-use. Particulate matter (PM10) is the primary emission from this system. On average 0.3 kg/min and maximum 0.38 kg/min powder is applied. The Nicrobraz 130 powder contains 93% nickel and the rest is silicon and boron.

The following factors were used in the PM10 emissions from this system.

Transfer Efficiency	31% **
Deposition Time in a month	200 hrs
Deposition Time in a year	2400 hrs.
Capture Efficiency	100% ***
Control Efficiency of Dust Collector	99.97% ****
PM10 Percentage	10% *

* The brazing powder is manufactured in 88 micron size. The test results indicated 10% to be PM10.
** 6.82" plate width / 21.75" depositor width X 100 = 31.3% transfer efficiency.
*** The system is enclosed and powder is collected at the bottom by a strong vacuum.
**** The dust collector control efficiency of the HEPA filter.

The maximum metal powder application rate is about 50 lbs/hour.
With 31% transfer efficiency, PM (R1) = 50 X (1 – 0.31) = 34.5 lbs/hr
With 10% of the powder is PM10 that is 34.5 X 0.1 = 3.45 lbs/hr (PM10, R1)
With 99.97% dust collection efficiency, PM10 (R2) = 0.001 lbs/hr
PM10 emissions in a month = 200 X 0.001 = 0.2 lbs/mo.
PM10 emissions in a day = 0.2 / 30 = 0.006 lbs/day.

The current maximum annual PM10 emissions from this powder application system without HEPA filter is 0.035 lbs/hr and 0.029 lbs/year (data obtained from the previous application, A/N 475878 evaluation). Thus, there will be significant reduction in the PM10 emissions under this project.

Toxic Emissions

The applicant has requested to limit the annual powder application hours for nickel powder to be 2400 hours.

Nickel emissions from nickel powder application.

The maximum metal powder application rate is about 50 lbs/hour.
With 30% of the actual application time in an hour, that is equivalent to 15 lbs/hr.
With 93% nickel in the powder, that is 13.95 lbs/hr nickel applied.
With 31% transfer efficiency, Ni (R1) = 13.95 X 0.69 = 9.63 lbs/hr
With 99.97% dust capture efficiency, Ni (R2) = 0.003 lbs/hr

The company will operate this equipment for a maximum of 2400 hours per year.
The total annual nickel emissions are 7.2 lbs/year.

The current maximum annual nickel emission from this powder application system without HEPA filter is 0.096 lbs/hr and 17.48 lbs/year (data obtained from the previous application, A/N 475878 evaluation). Thus, there will be reduction in the carcinogenic emissions under this project and will comply with the Rule 1401 requirements.

RULES/REGULATION EVALULATIONS

¤*RULE 212, PUBLIC NOTIFICATION*
v*SECTION 212(c)(1):*
This section requires a public notice for all new or modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school. The permit unit is not located within 1,000 feet from the outer boundary of a school. Therefore, public notice will not be required by this section.

v *SECTION 212(c)(2):*
This section requires a public notice for all new or modified facilities which have on-site emission increases exceeding any of the daily maximums as specified in subdivision (g). Only PM10 emissions are expected from this equipment. As described above in the evaluation report there will be reduction in PM10 emissions under this project. Therefore, this application will not be subject to this section.

v *SECTION 212(c)(3):*
As described above in the evaluation report, there will be reduction in carcinogenic emissions under this project. Therefore, public notice will not be required by this section.

v ***SECTION 212(g):***
This section requires a public notice for all new or modified sources which undergo construction or modifications resulting in an emissions increase exceeding any of the daily maximum specified in subdivision (g). Only PM10 emissions are expected from this equipment. As described above in the evaluation report there will be reduction in PM10 emissions under this project. Therefore, this application will not be subject to this section.

¤***RULES 401 & 402, VISIBLE EMISSIONS & NUISANCE***
AQMD database has no records of any visible emissions complaint against this company.

¤***RULES 404 & 405, PARTICULATE MATTER CONCENTRATION& WEIGHT***
Compliance with these provisions is expected with proper operation of the equipment.

¤ ***RULE 1124 AEROSPACE ASSEMBLY AND COMPONENT MANUFACTURING OPERATIONS***
v ***SECTION (C)(1), VOC CONTENT OF COATINGS***
Compliance is expected with this rule since the coating does not contain any VOC.

v***SECTION (c)(4), TRANSFER EFFICIENCY***
The use of rollercoater complies with these requirements.

v***SECTION (c)(2), SOLVENT USE, STRIPPING AND SURFACE PREPARATION***
The company use water and acetone (no VOC) for this purpose. Compliance with these requirements is achieved.

¤ ***RULE 1155, PARTICULATE MATTER CONTROL DEVICES***
The company will be in compliance with the rule requirements by using pulse jet automatic cleaning system on the cartridge filters and using HEPA filters at the final exhaust.

¤ ***RULE 1171, SOLVENT CLEANING OPERATIONS***
The company uses water and acetone (no VOC) for this purpose. Compliance with these requirements is achieved.

REGULATION XIII
¤ ***RULE 1303(a), BEST AVAILABLE CONTROL TECHNOLOGY (BACT)***

PM10 EMISSIONS
The use of HEPA filters to control particulate emissions will provide compliance with the current BACT requirements.

¤ ***RULE 1303(b)(1), MODELING***
With PM10 emissions <0.41 lbs/hr, this project is exempt from the modeling requirements.

¤ ***RULE 1303 (b)(2), EMISSION OFFSETS***

Only PM10 emissions are expected from this equipment. There will be reduction in the PM10 emissions under this project. Thus, no emission offsets are required under this project.

¤ ***RULE 1401, NEW SOURCE REVIEW OF CARCINOGENIC AIR CONTAMINANTS***

As described in the evaluation report above, there will be reduction in the nickel (carcinogenic air toxic compound) emissions under this project. Thus this project is exempt from the rule requirements.

REGULATION XXX:

This facility is in the RECLAIM program. The proposed project is considered as a "minor permit revision" for RECLAIM pollutants, non-RECLAIM pollutants, and hazardous air pollutants (HAPs) to the RECLAIM/Title V permit for this facility. Rule 3000(b)(12) specifies that a "minor permit revision" includes, but is not limited to any Title V permit revision that:

- Rule 3000(b)(12)(A)(v) – does not result in an emission increase of any RECLAIM pollutant over the facility's starting Allocation plus the non-tradeable Allocation, or higher Allocation amount which has previously undergone a significant permit revision process.

- Rule 3000(b)(12)(A)(vi) – does not result in an increase in emissions of a pollutant subject to Regulation XIII – New Source Review (non-RECLAIM pollutants) or a hazardous air pollutant (HAP).

The proposed project is not expected to result in an emission increase of any RECLAIM pollutant or an increase in emissions of a pollutant subject to Regulation XIII – New Source Review (non-RECLAIM pollutants) or a hazardous air pollutant (HAP), and therefore is considered as a "minor permit revision" pursuant to Rule 3000(b)(12)(A)(vi).

Since NOx is a RECLAIM pollutant for this facility, a separate analysis shall be made to determine if the proposed permit revision is considered a "minor permit revision" for RECLAIM pollutants. Rule 3000(b)(12)(A)(v) defines a "minor permit revision" as any permit revision that does not result in an emission increase of any RECLAIM pollutant over the facility's starting Allocation plus the non-tradeable Allocation, or higher Allocation amount which has previously undergone a significant permit revision process. Since there are no NOx emissions associated with this project, the proposed project is considered as a "minor permit revision" for RECLAIM pollutants.

This proposed project is the 2nd permit revision to the Title V renewal permit issued to this facility on March 25, 2010. The following table summarizes the permit revisions since the Title V renewal permit was issued.

Revision	*HAP*	*VOC*	*NOx*	*PM_{10}*	*SOx*	*CO*
1st Revision: Add new laser cutter and dust collector, A/N 497492 and 512708.	0	0	0	0	0	0
2nd Revision: Modification of Nickel Powder Application System A/N 515813.	0	0	0	0	0	0
Total	0	0	0	0	0	0
Maximum Daily Limit	30	30	40	30	60	220

* RECLAIM pollutant, not subject to emission accumulation requirements

RECOMMENDATION

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a "minor permit revision", it is exempt from the public participation requirements under Rule 3006 (b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not have any objections within the review period, a revised Title V permit will be issued to this facility.