PERMIT TO CONSTRUCT EVALUATION

Applicant's Name — **HONEYWELL INTERNATIONAL INC**

Company I.D. — **800003**

Mailing Address — **2525 W. 190TH ST.**
TORRANCE, CA 90504-6061

Equipment Address — **2525 W. 190TH ST.**
TORRANCE, CA 90504-6061

EQUIPMENT DESCRIPTION

APPLICATION NO. 475870

Title V deminimis significant permit revision

APPLICATION NO. 475882 (P/C-modif & C/C, prev. A/N 256641, P/O D90281, Device D125 and C133)

TEST CELL NO. 4, HIGH-SPEED TURBINE, NON-COMBUSTION TYPE, AMMONIUM NITRATE, AMMONIUM PERCHLORATE, HYDRAZINE, NATURAL GAS, JET FUEL JP-4,JET FUEL JP-5, AND JET FUEL JP-8 FIRED, WITH AN AFTERBURNER, 1,000,000 BTU/HR, NATURAL GAS FIRED ONLY.

APPLICATION NO. 475895 (P/C-modif & C/C, prev. A/N 341834, P/O F20547, Device D126 and C134)

TEST CELL NO. 5, ALLIED-SIGNAL, HIGH SPEED, TURBINE, NON-COMBUSTION TYPE, AMMONIUM NITRATE, AMMONIUM PERCHLORATE, HYDRAZINE, NATURAL GAS, AND HYDROGEN PEROXIDE FIRED, WITH AN AFTERBURNER, 1,000,000 BTU/HR, NATURAL GAS FIRED.

APPLICATION NO. 475896 (P/C-modif & C/C, prev. A/N 256643, P/O D90283, Device D127 and C135)

TEST CELL NO. 6, ALLIED SIGNAL, HIGH-SPEED TURBINE, NON-COMBUSTION TYPE, AMMONIUM NITRATE, AMMONIUM PERCHLORATE, HYDRAZINE, NATURAL GAS, JET FUEL JP-4, JET FUEL JP-5, AND JET FUEL JP-8 FIRED, WITH AN AFTERBURNER, 1,000,000 BTU/HR, NATURAL GAS FIRED ONLY.

APPLICATION NO. 475898 (P/C-modif & C/C, prev. A/N 362268, P/O F24914, Device D128 and C136)

TEST CELL NO. 7, ALLIED-SIGNAL, HIGH SPEED TURBINE, NON-COMBUSTION TYPE, AMMONIUM NITRATE, AMMONIUM PERCHLORATE, HYDRAZINE, NATURAL GAS, JET FUEL JP-4, JET FUEL JP-5, JET FUEL JP-8, AND DIMETHYL-2-AZIDOETHYLAMINE FIRED, WITH AN AFTERBURNER, 1,000,000 BTU/HR, NATURAL GAS FIRED.

APPLICATION NO. 476237 (P/C-modif & C/C, prev. A/N 256640, P/O D90280, Device D124 and C132)

TEST CELL NO. 3, ALLIED SIGNAL, HIGH-SPEED TURBINE, NON-COMBUSTION TYPE, AMMONIUM NITRATE, AMMONIUM PERCHLORATE, HYDRAZINE, NATURAL GAS, JET FUEL JP-4,JET FUEL JP-5, AND JET FUEL JP-8 FIRED, WITH AN AFTERBURNER, 1,000,000 BTU/HR, NATURAL GAS FIRED ONLY.

BACKGROUND/HISTORY

Appl. No.	Previous		Equipment	Reason for Application
	A/N	P/O		
475870	n/a	n/a	Title V Revision-Deminimis Significant	Title V Revision
475882	256641	D90281	Test Cell No. 4, DEVICE D125 & C133	P/C – Modif & C/C to remove 3 gal/hr JP fuel usage limitation, add natural gas/methane/ethane as fuel + fuel meter
475895	341834	F20547	Test Cell No. 5 DEVICE D126 & C134	P/C – Modif & C/C to remove 3 gal/hr JP fuel usage limitation, add natural gas/methane/ethane as fuel + fuel meter
475896	256643	D90283	Test Cell No. 6 DEVICE D127 & C135	P/C – Modif & C/C to remove 3 gal/hr JP fuel usage limitation, add natural gas/methane/ethane as fuel + fuel meter
475898	362268	F24914	Test Cell No. 7 DEVICE D128 & C136	P/C – Modif & C/C to remove 3 gal/hr JP fuel usage limitation, add natural gas/methane/ethane as fuel + fuel meter
476237	256640	D90280	Test Cell No. 3 DEVICE D124 & C132	P/C – Modif & C/C to remove 3 gal/hr JP fuel usage limitation, add natural gas/methane/ethane as fuel + fuel meter

Honeywell International Inc. submitted the above permit applications with AQMD on November 20, 2007 for change of permit condition to remove the hourly use limitation of 3 gal of JP-4, JP-5 and JP-8 fuels in these test cells, and also to be able to burn natural gas, ethane and methane in these test cells. At present the test cells are already permitted to use ammonium nitrate, ammonium perchlorate, hydrazine, and jet fuels JP-4, JP-5, & JP-8 for all test cells. In addition to the above fuels, test cell no. 5 (D126) is allowed to use hydrogen peroxide and test cell no. 7 is allowed to use diemethyl-2-aziodoethylamine as fuels. This facility operates a number of equipment at this site under the Reclaim/Title V permit.

The applicant requested to remove permit condition no. C1.14 which limits the use of JP-4, JP-5 and JP-8 fuels to 3 gallons per hour for the above mentioned test cells. All these test cells also have a daily usage limit of 21 gallons of JP-4, JP-5 and JP-8 fuels condition no. C1.15 which will remain on each test cell. The removal of the hourly limit of 3 gallons for JP fuels for each test cell will not result in any emission increase in NOx and other criteria pollutants. Each test cell is vented to a one million btu/hr afterburner. The afterburner is not changed, hence the emissions from the afterburner will remain the same. The applicant has also requested to use methane, ethane and natural gas in addition to the fuels listed above. The emissions from these new gaseous fuels at the proposed fuel

usage limit (2000 cubic feet per day) will be less than the emissions from the JP fuels at the permitted usage limit. A permit condition will be added requiring that natural gas/methane/ethane cannot be burned on the same day that any of the JP fuels are burned to ensure no emission increase due to the addition of these fuels.

The company indicated that there will be no operational changes which will affect the emissions from this previously permitted equipment. The applicant also requested that all the other fuel usage limits imposed by the current permit remain the same.

Each test cell is vented to its own afterburner. The facility had requested to change the description of afterburners to flares. However, upon review of the old permits and the drawings the facility provided for the configuration of the afterburner, it was concluded that this description as an afterburner is correct. The applicant was notified of this determination.

Honeywell is a RECLAIM Cycle II and Title V Group A facility. The initial Title V permit was issued on September 22, 1999 and the Title V renewal permit was issued on September 22, 2004. This is the second revision since the Title V renewal permit was issued. A/N 475870 was submitted for deminimis significant permit revision. There are several projects under separate evaluation which are part of this revision. Please refer to the separate Reg XXX evaluation for details.

The District's compliance database, for the last two years, for the facility (ID # 800003), shows one NOV no. P79460 which has since been closed according to the supervising inspector Victor Yip (his e-mail is on file). There are no N/Cs issued in the last two years. No records of nuisance complaints were found in the compliance database. During the last inspection on 5-02-08, the facility was found in compliance with all District rules and regulations.

PROCESS DESCRIPTION

During the JP fuel test, JP fuel (JP-4, JP-5 or JP-8) and air were injected into the combustion chamber. This mixture was ignited by means of a turbine igniter. The warm gases resulting from the combustion provide the energy to drive a turbine, which provides the mechanical work at the output gear of the power unit. The gearbox converts this mechanical energy into hydraulic energy via a pump mounted to the output of the gearbox. Air is supplied to the combustor by a compressed air system. The process is similar when natural gas, ethane or methane are used as the fuel for testing.

EMISSIONS

There is no increase in any criteria pollutant emission as a result of this modification/change of condition. The emissions from burning natural gas/methane/ethane will be less than the emissions from burning the JP fuels. Only the hourly usage limitation will be lifted for JP-4, JP-5 and JP-8 fuels.

The emission factors for JP fuel is the diesel fuel in a turbine factors from the annual emission reporting (AER) guidelines. The natural gas emission factors are also from AER.

E.F. Fuel	VOC	NOx	SOx	CO	PM
JP fuel lb/mmgal	5.57	67.8	31.2	15.4	5
Nat. Gas lb/mmcu. ft	42	413	0.6	115	14

Currently the facility is allowed a maximum of 21 gal/day of JP fuel. The emissions from the combustion of JP fuel compared to natural gas combustion shows that there is no increase in emissions. A permit condition will be added limiting the maximum natural gas usage to 2000 scf/day for each test cell, and no burning of natural gas and JP fuels in the same day to ensure no emission increase. Therefore offsets are not required and BACT is not applicable.

The following table summarizes emissions from 21 gal/day of JP fuels and compares it to 2000 scf of natural gas per day. The data shows that there is no increase in any criteria pollutant emission from the natural gas usage on each test cell with the new permit condition that "the facility shall not use JP fuel and natural gas on the same day in this test cell". The facility will also be required to install non-resettable natural gas meters for each test cell. The 1401 spread sheets indicate MICR, HIA and HIC from natural gas @ 2000 scf/day is lower than that from JP fuel @ 21 gallons/day, therefore this project is exempt from rule 1401 requirements also

Fuel	Emissions (lb/day)				
	VOC	NOx	SOx	CO	PM
JP fuel	0.117	1.424	0.002	0.323	0.105
Natural Gas	0.084	0.825	0.0016	0.096	0.077

RULES/REGULATION EVALUATION

RULE 212, PUBLIC NOTIFICATION

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. This facility is not located within 1000 feet from a school, therefore, these applications will not be subject to the public notice requirements under this section.

SECTION 212(c)(2):

This section requires a public notice for all new or modified equipment and facilities, which have emission increases exceeding any of the daily maximums as specified in subdivision (g). There are no emission increases from this facility due to this project, therefore public notice will not be required.

SECTION 212(c)(3):

This section requires a public notice for all new or modified sources, which have on-site emission increases resulting in a cancer risk of more than 1 in a million. Please see Rule 1401 section. There is no increase in MICR, HIA and HIC, therefore public notice is not required.

SECTION 212(g):

This section requires a public notice for all new or modified sources which undergo construction or modification resulting in an emission increase exceeding any of the daily maximum specified in the table below. There are no emission increases of criteria pollutants from these sources due to the modification/change of condition requested. Public notice will not be required by this section.

RULES 401 & 402, VISIBLE EMISSIONS & NUISANCE

Visible emissions and odors from this equipment are not expected with proper maintenance and operation. There are no complaints or notices for visible emissions, odors or nuisance issued in the last two years for this facility. Compliance is expected.

REGULATION XIII

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

BACT is not triggered as there is no emission increase in daily emissions of criteria pollutants from the equipment.

¤ ***RULE 1303(b) (1), MODELING***

There is no increase in daily emissions of criteria pollutants from this project. Modeling is not required

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

There is no increase in any criteria pollutant emissions from this facility due to this project, therefore no offsets are required.

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

As discussed in the report above, there is no increase in toxic emission due to this modification/change of condition. This project is exempt from Rule 1401.

REGULATION XXX:

PLEASE REFER TO SEPARATE REG XXX EVALUATION

This is the second revision to the title V renewal permit issued on 9/22/04. This revision consists of several projects which were evaluated separately.

RECOMMENDATION:

The proposed project is expected to comply with all the applicable District Rules and Regulations. Since the proposed project is considered as a "de minimis significant 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 the EPA does not have any objections within the review period, a revised Title V permit will be issued to this facility with the above equipment in section H (as permits to construct).