

ATTACHMENT D

Engineering Evaluation for Authority to Construct

From: MICHELLE JOE
Sent: Wednesday, March 26, 2008 12:59 PM
To: 'Dennis Curry'
Cc: steven.mcgrath@ucdmc.ucdavis.edu; tjavanaugh@ucdavis.edu; Yin, Wynn
Subject: RE: Revised CO Emission Limit for A/Cs 20216, 20217, 20218, & 20219

Hi Dennis,

Thank you for your prompt reply. I will be moving forward by issuing the invoice for the expedited processing that was requested for the evaluation of this project. Once this fee has been paid, the Permit to Operate should be ready for issuance. Please let me know if you should have any questions or if I may be of any further assistance. Again, thank you very much for your prompt follow-up to this issue.

Thank you,

Michelle Joe
Associate Air Quality Engineer
Sacramento Metropolitan AQMD
777 12th Street, 3rd Floor
Sacramento, CA 95814
mjoe@airquality.org

(916) 874-4853 Office
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-----Original Message-----

From: Dennis Curry [mailto:dennis.curry@ucdmc.ucdavis.edu]
Sent: Wednesday, March 26, 2008 12:48 PM
To: MICHELLE JOE
Cc: steven.mcgrath@ucdmc.ucdavis.edu; tjavanaugh@ucdavis.edu; Yin, Wynn
Subject: Re: Revised CO Emission Limit for A/Cs 20216, 20217, 20218, & 20219

Hi Michelle,

It was nice meeting you last week and it was a pleasure to come to an agreement on the issues that we discussed. I also thank you for an excellent summary of the items discussed and the exact terms and levels of our agreement. It is my understanding that through this email I am formally accepting the terms and limits outlined in your email. I also understand that this will allow you to issue our Permit to Operate the boilers with the new burners. In addition, it is my understanding that we further agreed to submit a minor modification to our Title V operating permit to reflect the terms and conditions/limits outlined in your email of 3/26/08. Winn Yin from Brown and Caldwell will be preparing the documents for this modification and they will be submitted shortly.

Thank you and Jorge for your assistance in this matter.

Dennis

"MICHELLE JOE"
<MJOE@airquality.org>
To
<dennis.curry@ucdmc.ucdavis.edu>
03/26/2008 09:22 AM
cc
<tjavanaugh@ucdavis.edu>,
<steven.mcgrath@ucdmc.ucdavis.edu>,
"Yin, Wynn" <WYin@BrwnCald.com>
Subject

Hi Dennis,

As per our meeting with you, Tom Kavanaugh, Steve McGrath, and Wynn Yin on 3/19/08, you agreed to a reduced CO emission limit that would not result in a net emission increase from the previous 30 mmBTU/hr boiler's CO emission levels. The previous 30 mmBTU/hr boiler was originally permitted at 100 ppm CO (75 lb/mmcf CO) and resulted in a maximum daily emission of 54 lb/day of CO. With the increase in rating from the new 31.5 mmBTU/hr burner, it was determined that a CO emission limit of 96.6 ppm CO (71.4 lb/mmcf CO) will result in the same daily emissions of 54 lb/day of CO.

Therefore, instead of retaining the same CO emission limit of 100 ppm CO (75 lb/mmcf CO), your new CO emission limit will be 96.6 ppm CO (71.4 lb/mmcf CO). Verification of this emission limit shall be through the annual compliance source test.

In addition to accepting this reduced CO emission limit in order to avoid triggering CO offsets, you also agreed to continue to accept the diesel fuel operational limit currently required in your Title V permit. In accordance with Condition No. 6 (page 27) of your Title V permit and Section 304.1 of District Rule 411, each boiler shall not operate on diesel fuel for more than 168 hours per year for emergency purposes and 48 hours per year for equipment maintenance and emission testing purposes. Although the Title V permit required this limit to avoid source testing requirements on diesel fuel, the local permits did not include this limit. Therefore, continued acceptance of this limit on the local permits will not cause an increase in net emissions. This in turn will not trigger CO offsets, Best Available Control Technology (BACT) for diesel, or reassessment of the original health risk assessment.

Please confirm your agreement to the following limits by responding to this e-mail:

- limit CO emission limit to 96.6 ppm CO (71.4 lb/mmcf CO)
- limit diesel hours of operation to 168 hours per year for emergency purposes and 48 hours per year for equipment maintenance and emission testing purposes

Please let me know if you should have any questions about this e-mail.

Thank you,

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AIR QUALITY

MANAGEMENT DISTRICT

ADDENDUM TO AUTHORITY TO CONSTRUCT EVALUATION

APPLICATION NOS.:	20216, 20217, 20218, & 20219
DATE:	March 24, 2008
EVALUATED BY:	Michelle Joe

FACILITY NAME: UCD MEDICAL CENTER (UCDMC)

LOCATION: 4800 SECOND AVENUE, SACRAMENTO, CA 95817

PROPOSAL: This is an addendum to the evaluation for A/C 20216, 20217, 20218, & 20219.

INTRODUCTION:

Upon initial inspection of Boilers No. 1 and 4 (A/C 20216 & 20219) and Boilers No. 2 and 3 (A/C 20217 & 20218), it was discovered that the rated heat input listed on the burner nameplate was higher than the rating of the boiler. These ratings match the ratings initially proposed in the application, but were inadvertently overlooked during the original evaluation of this project. Furthermore, it was discovered that the previous evaluation for the original boilers (P/Os 10911, 10913, 10915, & 10917) was evaluated based on the proposed 30 mmBTU/hr rating rather than the actual 31.4 mmBTU/hr rating. Although the permits were revised according to the actual rating (reference PAR #2169), the evaluation was not revised to recalculate facility-wide emission totals nor to reassess the health risk. This addendum will recalculate the potential to emit for all four boilers based on the actual 31.5 mmBTU/hr rating of the burner, and reference these emissions back to the historic emissions based on the 30 mmBTU/hr original rating. Based on imposed limits agreed to by UCDMC, there shall be no net increase in emissions from the increase in rating of the burners.

FLOW DIAGRAM: None

EQUIPMENT DESCRIPTION: (changes indicated in **bold**)

A/C 20216 – Boiler No. 1 (modifying P/O 18529):

Manufacturer:	Johnston Boiler Company
Model:	PFTA750-4LG-150S
Serial No.	9357-04
Type:	Steam
Rated Burner Heat Input:	31.5 MMBTU/hour
Primary Fuel:	Natural gas
Emergency Use Fuel:	Diesel No. 2 with sulfur < 200 ppmw

A/C 20217 – Boiler No. 2 (modifying P/O 18530):

Manufacturer:	Johnston Boiler Company
Model:	PFTA750-4LG-150S
Serial No.	9357-03
Type:	Steam
Rated Burner Heat Input:	31.5 MMBTU/hour
Primary Fuel:	Natural gas

Emergency Use Fuel: Diesel No. 2 with sulfur < 200 ppmw

A/C 20218 – Boiler No. 3 (modifying P/O 18531):

Manufacturer: Johnston Boiler Company
Model: PFTA750-4LG-150S
Serial No. 9357-02
Type: Steam
Rated Burner Heat Input: 31.5 MMBTU/hour
Primary Fuel: Natural gas
Emergency Use Fuel: Diesel No. 2 with sulfur < 200 ppmw

A/C 20219 – Boiler No. 4 (modifying P/O 18532):

Manufacturer: Johnston Boiler Company
Model: PFTA750-4LG-150S
Serial No. 9357-01
Type: Steam
Rated Burner Heat Input: 31.5 MMBTU/hour
Primary Fuel: Natural gas
Emergency Use Fuel: Diesel No. 2 with sulfur < 200 ppmw

PROCESS RATE/FUEL USAGE:

The boilers are designed to combust approximately 31,500 cf/hour of natural gas or diesel fuel.

OPERATING SCHEDULE:

The boilers will be permitted to operate continuously, 24 hours/day, 7 days/week on natural gas. Diesel fuel usage is limited to emergency use only, during natural gas curtailment from the commercial gas supply and during periodic testing of fuel oil delivery and replaced delivery components. The maximum permitted diesel fuel usage will be limited to 168 hours for emergency operation + 48 hours for maintenance/testing = 216 hours/year (for each boiler) to qualify as an emergency standby fuel as defined in Rule 411, Section 304.1.

CONTROL EQUIPMENT EVALUATION:

The boilers will each be retrofitted with an Industrial Combustion NT ultra low-NOx burner with flue gas recirculation to meet the NOx standard of 9 ppmv and the CO standard of 400 ppmvd @ 3% O₂ when fired on natural gas, in accordance with Rule 411, Section 301. The burners shall also meet the NOx standard of 40 ppmvd and the CO standard of 400 ppmvd at 3% O₂ when fired on diesel no. 2 fuel, in accordance with Rule 411, Section 302. The manufacturer guaranteed the following concentrations:

Less than or equal to 9 ppmvd NOx (at 3% O₂), firing natural gas.
Less than or equal to 100 ppmvd CO (at 3% O₂), firing natural gas.

EMISSIONS CALCULATIONS:

1. HISTORIC POTENTIAL TO EMIT:

A. NATURAL GAS FIRING:

Historic Potential to Emit for **each** boiler (based on original evaluation of P/Os 10911, 10913, 10915, & 10917):

Pollutant	Emission Factor (A) lb/MMcf	Maximum Allowable Emissions (B) Each of the (4) Boilers When Combusting Natural Gas lb/day	
ROC	12		8.6
NOx	35		25.2
SOx	0.6		0.4
PM10	10		7.2
CO	75		54.0

(A) EMISSION FACTORS FOR NOx, SOx, ROC, PM10 AND CO ARE BASED ON MANUFACTURER GUARANTEES.

(B) DAILY EMISSIONS ARE BASED ON OPERATING AT MAXIMUM CAPACITY (0.030 MMCF/HR) AND 24 HOURS/DAY.

B. DIESEL FUEL FIRING:

Historic Potential to Emit for **each** boiler (based on original evaluation of P/Os 10911, 10913, 10915, & 10917):

Pollutant	Emission Factor (A) lb/MMBTU	Emission Factor (B) lb/Mgallons	Maximum Allowable Emissions (C) Each of the (4) Boilers When Combusting Diesel Fuel lb/quarter			
			Quarter 1	Quarter 2	Quarter 3	Quarter 4
ROC	0.025	3.4	1,656	1,656	1,656	1,656
NOx	0.05	6.9	3,312	3,312	3,312	3,312
SOx	0.021	2.9	1,391	1,391	1,391	1,391
PM10	0.015	2.1	994	994	994	994
CO	0.078	10.7	5,167	5,167	5,167	5,167

(A) ROC, PM10 AND CO EMISSION FACTORS ARE FROM THE BOILER MANUFACTURER. NOx EMISSION FACTOR EQUIVALENT TO 40 PPMVD AT 3% O2. SOx EMISSION FACTOR BASED ON 0.02% S BY WEIGHT IN THE DIESEL FUEL.

(B) EMISSION FACTORS CONVERTED TO LB/MGALLONS BASED ON 137,700 BTU/GALLON OF DIESEL FUEL.

(C) BASED ON 24 HOURS/DAY AND 92 DAYS/QUARTER FOR EACH OF THE 4 BOILERS. BASED ON 30,000,000 BTU/HR HEAT INPUT FOR EACH BOILER, 137,700 BTU/GALLON FOR THE AMBER 363 DIESEL FUEL AND EACH BOILER CAN COMBUST 218 GALLONS/HOUR OF DIESEL FUEL.

C. COMBINED EMISSION LIMITS:

Permit No.	Equipment	Maximum Allowable Combined Emissions (A) lb/day		
		NOx	ROC	PM10
12979	Boilers (8), 3.2 MMBTU/hr total	150	150	80
17549	Gas turbine, 260 MMBTU/hr			
18529	Boiler No. 1, 31.4 MMBTU/hr			
18530	Boiler No. 2, 31.4 MMBTU/hr			
18531	Boiler No. 3, 31.4 MMBTU/hr			
18532	Boiler No. 4, 31.4 MMBTU/hr			
18685	Gasoline dispensing			

(A) COMPLIANCE WITH THESE EMISSION LIMITATIONS SHALL BE DETERMINED BY USING THE CALCULATION METHODS SPECIFIED IN ATTACHMENT A TO THE GAS TURBINE P/O 17549.

2. PROPOSED POTENTIAL TO EMIT:

A. NATURAL GAS FIRING:

Proposed emissions from **each** boiler:

Pollutant	Emission Factor (A) lb/MMcf	Proposed Potential to Emit (B) Each of the (4) Boilers When Combusting Natural Gas lb/day
ROC	4	3.0
NOx	10.9	8.2
SOx	0.6	0.5
PM10	10	7.6
CO	71.4	54.0

(A) EMISSION FACTORS FOR ROC, NOx, SOx, PM10, AND CO ARE BASED ON MANUFACTURER GUARANTEES (WITH NOx AND CO CORRESPONDING TO RULE 411 LIMIT OF 9 PPM NOx AND APPLICANT REQUEST OF 96.6 PPM CO @ 3% O₂).

(B) DAILY EMISSIONS ARE BASED ON OPERATING AT MAXIMUM CAPACITY (0.0315 MMCF/HR) AND 24 HOURS/DAY.

B. DIESEL FUEL FIRING:

Proposed emissions from **each** boiler:

Pollutant	Emission Factor (A) lb/MMBTU	Emission Factor (B) lb/Mgallons	Maximum Allowable Emissions (C) Each of the (4) Boilers When Combusting Diesel Fuel lb/quarter			
			Quarter 1	Quarter 2	Quarter 3	Quarter 4
ROC	0.025	3.4	170	170	170	170
NOx	0.05	6.9	340	340	340	340
SOx	0.021	2.9	143	143	143	143
PM10	0.015	2.1	102	102	102	102
CO	0.078	10.7	531	531	531	531

- (A) ROC, PM10 AND CO EMISSION FACTORS ARE BASED ON PREVIOUS PERMITTED EMISSION FACTORS (PREVIOUSLY BASED ON MANUFACTURER GUARANTEES). NOx EMISSION FACTOR EQUIVALENT TO 40 PPMVD AT 3% O2. SOx EMISSION FACTOR BASED ON 0.02% S BY WEIGHT IN THE DIESEL FUEL.
- (B) EMISSION FACTORS CONVERTED TO LB/MGALLONS BASED ON 137,700 BTU/GALLON OF DIESEL FUEL.
- (C) BASED ON MAXIMUM PERMITTED LIMIT OF 216 HOURS/QUARTER FOR EACH OF THE 4 BOILERS. BASED ON 31,500,000 BTU/HR HEAT INPUT FOR EACH BOILER, 137,700 BTU/GALLON FOR THE AMBER 363 DIESEL FUEL AND EACH BOILER CAN COMBUST 229 GALLONS/HOUR OF DIESEL FUEL.

C. COMBINED EMISSION LIMITS: Combined emission limits will remain unchanged from the Historic Potential to Emit since no changes to the process or modes of operation are proposed.

Permit No.	Equipment	Proposed Combined Potential to Emit (A) lb/day		
		NOx	ROC	PM10
12979	Boilers (8), 3.2 MMBTU/hr total	150	150	80
17549	Gas turbine, 260 MMBTU/hr			
18685	Gasoline dispensing			
20216	Boiler No. 1, 31.5 MMBTU/hr			
20217	Boiler No. 2, 31.5 MMBTU/hr			
20218	Boiler No. 3, 31.5 MMBTU/hr			
20219	Boiler No. 4, 31.5 MMBTU/hr			

- (A) COMPLIANCE WITH THESE EMISSION LIMITATIONS SHALL BE DETERMINED BY USING THE CALCULATION METHODS SPECIFIED IN ATTACHMENT A TO THE GAS TURBINE P/O 17549.

3. CALCULATION OF BACT TRIGGER:

NEI (BACT) = Net Emissions Increase (92 days/quarter used)
= Proposed Potential to Emit - Historic Potential to Emit
MPE = Maximum Potential Emissions on a 24-Hour Day Operation

Calculation of BACT trigger for each boiler fired on natural gas:

Pollutant	NEI (BACT) lb/quarter	Is NEI (BACT) >0?	MPE lb/day	BACT Trigger Level lb/day	Is BACT Required?
ROC	-517	No	3.0	≥10	No
NOx	-1,560	No	8.2	≥10	No
SOx	2	Yes	0.5	≥10	No
PM10	33	Yes	7.6	≥10	No
CO	-2	No	54.0	≥550	No

Calculation of BACT trigger for each boiler fired on diesel fuel:

Pollutant	NEI (BACT) lb/quarter	Is NEI (BACT) >0?	MPE lb/day	BACT Trigger Level lb/day	Is BACT Required?
ROC	-1,486	No	18.9	≥10	No
NOx	-2,972	No	37.8	≥10	No
SOx	-1,248	No	15.9	≥10	No
PM10	-892	No	11.3	≥10	No
CO	-4,636	No	59.0	≥550	No

4. CALCULATION OF OFFSET TRIGGER FOR ROC AND NOx:

Permit No.	Emissions Unit	Stationary Source Potential to Emit (lb/quarter)	
		ROC	NOx
P/O 9467	IC Engine, Standby	164	2,063
P/O 10707	IC Engine, Standby	69	963
P/O 10909	APC NOx Turbine (SCR)	0	0
P/O 10910	APC CO Turbine (NSCR)	0	0
P/O 11494	IC Engine, Standby	360	4,501
P/O 13421	IC Engine, Standby	17	277
P/O 14475	IC Engine, Standby	167	6,930
P/O 18529	Boiler (Central Plant) (A)	Modified by A/C 20216	
P/O 18530	Boiler (Central Plant) (A)	Modified by A/C 20217	
P/O 18531	Boiler (Central Plant) (A)	Modified by A/C 20218	
P/O 18532	Boiler (Central Plant) (A)	Modified by A/C 20219	
P/O 12979	Boilers (California Specials) (A)	13,800	13,800
P/O 17549	Gas Turbine Cogen. (A)		
P/O 18685	GDF (A)		
A/C 20216	Boiler Mod. (Central Plant) (A)		
A/C 20217	Boiler Mod. (Central Plant) (A)		
A/C 20218	Boiler Mod. (Central Plant) (A)		
A/C 20219	Boiler Mod. (Central Plant) (A)		
P/O 18533	IC Engine, Standby (B)	823	31,185
P/O 18534	IC Engine, Standby (B)	823	31,185
P/O 18535	IC Engine, Standby (B)	823	31,185
P/O 18536	IC Engine, Standby (B)	823	31,185
A/C 19775	IC Engine, Standby	79	314
Total		17,948	153,588
Offset Trigger Level		≥5,000	≥5,000

- (A) These emission units (P/Os 12979, 17549 and 18685, and A/Cs 20216, 20217, 20218, and 20219) are limited to 150 lb/day for NOx combined and 150 lb/day for ROC combined. Quarterly emissions are based on operating for 92 days/quarter at the maximum daily combined emission limit.
- (B) The worst case NOx emissions will occur when the standby engines (P/Os 18533, 18534, 18535 and 18536) are operated 750 hours/quarter each.

5. CALCULATION OF OFFSET TRIGGER FOR SO_x, PM₁₀ AND CO:

Permit No.	Emissions Unit	Cumulative Emission Increase for this Stationary Source since January 1, 1977 (lb/quarter)		
		SO _x	PM ₁₀	CO
P/O 9467	IC Engine, Standby	136	148	448
P/O 10707	IC Engine, Standby	11	69	208
P/O 10909	APC NO _x Turbine (SCR)	0	0	0
P/O 10910	APC CO Turbine (NSCR)	0	0	0
P/O 11494	IC Engine, Standby	298	322	979
P/O 13421	IC Engine, Standby	5	7	198
P/O 14475	IC Engine, Standby	203	132	450
P/O 18529	Boiler Mod. (Central Plant)	Modified by A/C 20216		
P/O 18530	Boiler Mod. (Central Plant)	Modified by A/C 20217		
P/O 18531	Boiler Mod. (Central Plant)	Modified by A/C 20218		
P/O 18532	Boiler Mod. (Central Plant)	Modified by A/C 20219		
P/O 12979	Boilers (California Specials)	4	7,360 (B)	2,091
P/O 17549	Gas Turbine Cogen.	315 (A)		18,426 (C)
P/O 18685	GDF	0		0
A/C 20216	Boiler Mod. (Central Plant)	185 (A)		5,013 (C)
A/C 20217	Boiler Mod. (Central Plant)	185 (A)		5,013 (C)
A/C 20218	Boiler Mod. (Central Plant)	185 (A)		5,013 (C)
A/C 20219	Boiler Mod. (Central Plant)	185 (A)		5,013 (C)
P/O 18533	IC Engine, Standby (D)	306		690
P/O 18534	IC Engine, Standby (D)	306	690	3,039
P/O 18535	IC Engine, Standby (D)	306	690	3,039
P/O 18536	IC Engine, Standby (D)	306	690	3,039
A/C 19775	IC Engine, Standby	11	10	256
Total		2,947	10,808	55,264
Offset Trigger Level		≥13,650	≥7,500	≥49,500

(A) The worst case SO_x emissions will occur when:

- (1) The gas turbine (P/O 17549) is operating at full load on natural gas for 1,992 hours/quarter (315 lb/quarter SO_x).
- (2) The auxiliary boilers (A/Cs 20216, 20217, 20218, and 20219) are operating at full load on natural gas for 1,992 hours/quarter (42 lb/quarter SO_x).
- (3) The auxiliary boilers (A/Cs 20216, 20217, 20218, and 20219) are operating on fuel oil with the gas turbine off for the remaining 216 hours/quarter (143 lb/quarter SO_x).

(B) These emission units (P/Os 12979, 17549 and 18685, and A/Cs 20216, 20217, 20218, and 20219) are limited to 80 lb/day for PM₁₀ combined. Quarterly emissions are based

on operating for 92 days/quarter at the maximum daily combined emission limit.

- (C) The worst case CO emissions will occur when:
- (1) The gas turbine (P/O 17549) is operating at full load on natural gas for 1,992 hours/quarter (18,426 lb/quarter CO).
 - (2) The auxiliary boilers (A/Cs 20216, 20217, 20218, and 20219) are operating at full load on natural gas for 1,992 hours/quarter (4,482 lb/quarter CO).
 - (3) The auxiliary boilers (A/Cs 20216, 20217, 20218, and 20219) are operating on fuel oil with the gas turbine off for the remaining 216 hours/quarter (531 lb/quarter CO).
- (D) The worst case SOx, PM10 and CO emissions will occur when the standby engines (P/Os 18533, 18534, 18535 and 18536) are operated 750 hours/quarter each.

6. CALCULATION OF EMISSION OFFSETS FOR ROC AND NOx:

Offsets thresholds are exceeded for ROC and NOx. However, there is no increase in the quarterly emissions potential to emit due to the modification of these permits since the applicant will continue to accept the previous combined ROC and NOx emission limits in accordance with Rule 202, Section 302.3. Therefore, ROC and NOx offsets are not applicable for this modification.

7. CALCULATION OF EMISSION OFFSETS FOR SOx, PM10 AND CO:

Offsets thresholds are exceeded for PM10 and CO. However, there is no increase in the quarterly emissions potential to emit for PM10 and CO due to the modification of these permits. UCDMC will continue to accept the previous combined PM10 emission limit in accordance with Rule 202, Section 302.3. UCDMC will also accept a lowered CO emission limit when firing on natural gas, as well as continue to accept the emergency hours of operation limitation required in the most recent Title V permit, so as to not result in a net increase of CO emissions. Therefore, PM10 and CO offsets are not applicable for this modification.

Offsets thresholds are not exceeded for SOx. Therefore, no offsets are required for this pollutant.

COMPLIANCE WITH RULES AND REGULATIONS:

1. H&S Code § 42301.6 (AB 3205) COMPLIANCE:

The proposed equipment is located within 1000 feet of a K-12 school, but there is no increase in hazardous air emissions (i.e., Diesel PM10 emissions did not increase) associated with this permitting action modifying the current Permits to Operate. Therefore the notice requirements of California Health and Safety Code Section 42301.6 do not apply (as exempted by Health and Safety Code Section 42301.6g).

2. NSR COMPLIANCE:

Rule 202 – New Source Review

Section 112 – Exemption: Notification Requirements The increase in potential to emit from this modification will not exceed the levels specified in this section. Therefore, the applications are exempt from the public notice and inspection requirements of Sections 405, 406, 407, and 409.2.

Section 301 – Best Available Control Technology BACT is not triggered for any pollutant, since there are no increases in the hourly, daily, and quarterly operating conditions. The only changes made will affect the requirement to meet the newest NOx emission standards (9 ppmv @ 3% O₂ for natural gas combustion) specified in Rule 411, as well as limiting the CO emission limit and the diesel emergency operating hours so as to not result in a net increase in emissions.

Section 302 – Offset The proposed emissions of ROG, NOx, PM10, and CO from the project exceed the offset trigger levels specified in this section. However, there is no proposed increase in ROG, NOx or PM10 since UCDMC will continue to accept the previous daily emission limits. In addition, UCDMC will accept a lowered CO emission limit so as to not result in a net increase in CO emissions. Therefore, this application is not subject to offsets requirement.

Section 307 – Denial, Failure to Meet CEQA The SMAQMD utilizes *Guide to Air Quality Assessment in Sacramento County, SMAQMD, July 2004* as guide during the initial study phase of a proposed project to determine the level of review necessary under CEQA (referenced in the IC Engine Policy manual last updated December of 2006).

- a. ROG and NOx – The average daily emissions are 151.2 lb/day of NOx and 75.6 lb/day of ROG when fired on diesel fuel. However, there is no permitted increase in daily, quarterly or annual emissions since the applicant will continue to accept the previous combined NOx and ROG emission limits. Therefore, the trigger levels of 65 lb/day are not triggered.
- b. Other pollutants – The project does not result in operational emissions that could lead to violations of any applicable state Ambient Air Quality Standards.
- c. Toxic Air Contaminants – The project does not trigger T-BACT requirements.
- d. Cumulative TACs – The project is located at a source identified in the AB2588 program. However, this source had a health risk assessment conducted in 1994 which resulted in a cumulative risk of less than 10 in one million. Furthermore, there is no increase in hazardous air emissions (i.e., Diesel PM10 emissions did not increase) associated with this project, and so no additional risk is expected from this modification. Therefore, it is anticipated that the project will not create an adverse environmental impact.

As the project meets the above statutory exemptions, the project does not require further CEQA review.

3. **PSD COMPLIANCE:** Not applicable.

4. **PROHIBITORY RULES COMPLIANCE:**

Rule 401 – Ringelmann Chart

Visible emissions are expected to comply with the Ringelmann No. 1 or 20% opacity requirement of this rule.

Rule 402 – Nuisance

A screening health risk assessment was performed for the initial permitting of this project in 1994 (see evaluation for P/O 10908). The excess cancer risk associated with the project was estimated to be less than 10 in 1 million. Acceptable values are excess cancer risks of less than 10 in 1 million. Since there is no emission change resulting in an increase of hazardous air emissions (i.e., diesel PM10 emissions did not increase) associated with this permitting action, the previously calculated health risk remains the same.

Rule 406 – Specific Contaminants

The boilers are expected to comply with the emissions limit of 0.2% by volume sulfur compound as SO₂ and 0.1 gr/dscf of other combustion gases calculated to 12% CO₂.

Rule 411 – Boiler NOx

Boilers No. 1, 2, 3, and 4 (A/Cs 20216, 20217, 20218, & 20219) will be retrofitted with ultra low-NOx burners to meet the emission standards of 9 ppm NOx and 400 ppm CO at 3% O₂ when fueled by natural gas, as required by Rule 411, Section 301. In addition, the boilers must continue to meet the emission limits of 40 ppm NOx and 400 ppm CO at 3% O₂ when fueled by diesel no. 2, as required by Rule 411, Section 302. The boilers are subject to the annual source testing requirements to verify the NOx and CO emission rates when fired on natural gas as specified in Rule 411, Section 403. In lieu of complying with the Rule 411, Section 302 NOx and CO emission concentration when combusting diesel fuel, UCDMC has chosen to comply with the Rule 411, Section 304 limitation on annual hours that diesel fuel can be combusted. As a result, UCDMC is not required to comply with the source testing requirement of Rule 411, Section 403 when combusting diesel fuel.

Rule 420 – Sulfur Content of Fuels

Pipeline quality natural gas will comply with the 0.5% sulfur content requirement of this rule.

The State of California regulated sulfur content of California Ultra Low Sulfur Diesel no. 2 fuel (<0.0015%) should meet the 0.5% sulfur content requirement of this rule and the 0.02% sulfur content limit originally requested by UCDMC in 1994 (see Evaluation for P/O 10908).

5. NSPS COMPLIANCE:

NSPS (40 CFR Part 60 Subpart Dc) affects steam generating units with a heat capacity of 10 - 100 mmBTU/hour and are modified after June 9, 1989. The NSPS limits the sulfur content of the distillate fuel oil to a maximum of 0.5% by weight, limits the opacity of the stack emission to a maximum of 20%, and requires recordkeeping and reporting on the fuel oil.

UCDMC had previously demonstrated compliance with the distillate fuel oil sulfur content by fuel oil supplier certification (40 CFR 60.44c(h)). The fuel oil supplier certification must contain the following (40 CFR 60.48c(f)):

1. Name of the oil supplier
2. Statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in 40 CFR 60.41c.
[Distillate oil means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-78, "Standard Specifications for Fuel Oils".]

In addition, UCDMC must keep records of the fuel oil supplier certification and submit a report every six months that includes the following (40 CFR 60.48c(e)):

1. Calendar dates covered in the reporting period.
2. Records of fuel oil supplier certification.
3. Certified statement signed by the owner or operator of the affected facility that the records of fuel oil supplier certification submitted represent all of the fuel combusted during the reporting period.

By continuing to meet these requirements, NSPS is satisfied for boilers No. 1, 2, 3, and 4.

6. **NESHAP COMPLIANCE:** Not applicable.

RECOMMENDATION:

The equipment should comply with all applicable District rules and regulations. A Permit to Operate should be issued indicating the conditions outlined in this Authority to Construct Evaluation.

PREPARED BY: Michelle Joe **DATE:** March 24, 2008

REVIEWED BY: _____ **DATE:** _____

AIR QUALITY

MANAGEMENT DISTRICT

AUTHORITY TO CONSTRUCT EVALUATION

APPLICATION NOs.:	<u>20216, 20217, 20218, & 20219</u>
DATE:	<u>May 17, 2007</u>
EVALUATED BY:	<u>Michelle Joe</u>

FACILITY NAME: UCD MEDICAL CENTER (UCDMC)

LOCATION: 4800 SECOND AVENUE, SACRAMENTO, CA 95817

PROPOSAL: RETROFIT PERMITS TO OPERATE P/Os 18529, 18530, 18531, & 18532 WITH AN ULTRA LOW-NO_x BURNER TO COMPLY WITH RULE 411 EMISSION REQUIREMENTS

INTRODUCTION:

UCD Medical Center is proposing to retrofit each boiler of P/Os 18529, 18530, 18531, & 18532 with an ultra low-NO_x burner to meet the emission requirements of Rule 411 – Boiler NO_x, Section 301. The boilers provide backup steam for space heating when the gas turbine (P/O 17549) capacity is exceeded or when it is out of service. The boilers use natural gas as a primary fuel and diesel no. 2 as a standby fuel. The estimated date of construction is August 27, 2007.

FLOW DIAGRAM: None

EQUIPMENT DESCRIPTION:

A/C 20216 – Boiler No. 1 (modifying P/O 18529):

Manufacturer:	Johnston Boiler Company
Model:	PFTA750-4LG-150S
Serial No.	9357-04
Type:	Steam
Heat Input:	31.4 MMBTU/hour
Primary Fuel:	Natural gas
Emergency Use Fuel:	Diesel No. 2 with sulfur < 200 ppmw

A/C 20217 – Boiler No. 2 (modifying P/O 18530):

Manufacturer:	Johnston Boiler Company
Model:	PFTA750-4LG-150S
Serial No.	9357-03
Type:	Steam
Heat Input:	31.4 MMBTU/hour
Primary Fuel:	Natural gas
Emergency Use Fuel:	Diesel No. 2 with sulfur < 200 ppmw

A/C 20218 – Boiler No. 3 (modifying P/O 18531):

Manufacturer:	Johnston Boiler Company
Model:	PFTA750-4LG-150S
Serial No.	9357-02
Type:	Steam
Heat Input:	31.4 MMBTU/hour
Primary Fuel:	Natural gas
Emergency Use Fuel:	Diesel No. 2 with sulfur < 200 ppmw

A/C 20219 – Boiler No. 4 (modifying P/O 18532):

Manufacturer:	Johnston Boiler Company
Model:	PFTA750-4LG-150S
Serial No.	9357-01
Type:	Steam
Heat Input:	31.4 MMBTU/hour
Primary Fuel:	Natural gas
Emergency Use Fuel:	Diesel No. 2 with sulfur < 200 ppmw

PROCESS RATE/FUEL USAGE:

The boilers are designed to combust approximately 31,400 cf/hour of natural gas or diesel fuel.

OPERATING SCHEDULE:

The boilers will be permitted to operate continuously, 24 hours/day, 7 days/week on natural gas. Diesel fuel usage is limited to emergency use only, during natural gas curtailment from the commercial gas supply and during periodic testing of fuel oil delivery and replaced delivery components.

CONTROL EQUIPMENT EVALUATION:

The boilers will each be retrofitted with an Industrial Combustion NT ultra low-NOx burner with flue gas recirculation to meet the NOx standard of 9 ppmv and the CO standard of 400 ppmvd @ 3% O₂ when fired on natural gas, in accordance with Rule 411, Section 301. The burners shall also meet the NOx standard of 40 ppmvd and the CO standard of 400 ppmvd at 3% O₂ when fired on diesel no. 2 fuel, in accordance with Rule 411, Section 302. The manufacturer guaranteed the following concentrations:

Less than or equal to 9 ppmvd NOx (at 3% O₂), firing natural gas.
Less than or equal to 100 ppmvd CO (at 3% O₂), firing natural gas.

EMISSIONS CALCULATIONS:

1. HISTORIC POTENTIAL TO EMIT:

A. NATURAL GAS FIRING:

Historic Potential to Emit for **each** boiler:

Pollutant	Emission Factor (A) lb/MMcf	Maximum Allowable Emissions (B) Each of the (4) Boilers When Combusting Natural Gas lb/day
ROC	12	9.0
NOx	35	26.4
SOx	0.6	0.5
PM10	10	7.5
CO	75	56.5

(A) EMISSION FACTORS FOR NOx, SOx, ROC, PM10 AND CO ARE BASED ON MANUFACTURER GUARANTEES.

(B) DAILY EMISSIONS ARE BASED ON OPERATING AT MAXIMUM CAPACITY (0.0314 MMCF/HR) AND 24 HOURS/DAY.

B. DIESEL FUEL FIRING:

Historic Potential to Emit for **each** boiler:

Pollutant	Emission Factor (A) lb/MMBTU	Emission Factor (B) lb/Mgallons	Maximum Allowable Emissions (C) Each of the (4) Boilers When Combusting Diesel Fuel lb/quarter			
			Quarter 1	Quarter 2	Quarter 3	Quarter 4
ROC	0.025	3.4	1712	1712	1712	1712
NOx	0.05	6.9	3474	3474	3474	3474
SOx	0.021	2.9	1460	1460	1460	1460
PM10	0.015	2.1	1057	1057	1057	1057
CO	0.078	10.7	5387	5387	5387	5387

(A) ROC, PM10 AND CO EMISSION FACTORS ARE FROM THE BOILER MANUFACTURER. NOx EMISSION FACTOR EQUIVALENT TO 40 PPMVD AT 3% O2. SOx EMISSION FACTOR BASED ON 0.02% S BY WEIGHT IN THE DIESEL FUEL.

(B) EMISSION FACTORS CONVERTED TO LB/MGALLONS BASED ON 137,700 BTU/GALLON OF DIESEL FUEL.

(C) BASED ON 24 HOURS/DAY AND 92 DAYS/QUARTER FOR EACH OF THE 4 BOILERS. BASED ON 31,400,000 BTU/HR HEAT INPUT FOR EACH BOILER, 137,700 BTU/GALLON FOR THE AMBER 363 DIESEL FUEL AND EACH BOILER CAN COMBUST 228 GALLONS/HOUR OF DIESEL FUEL.

C. COMBINED EMISSION LIMITS:

Permit No.	Equipment	Maximum Allowable Combined Emissions (A) lb/day		
		NOx	ROC	PM10
12979	Boilers (8), 3.2 MMBTU/hr total	150	150	80
17549	Gas turbine, 260 MMBTU/hr			
18529	Boiler No. 1, 31.4 MMBTU/hr			
18530	Boiler No. 2, 31.4 MMBTU/hr			
18531	Boiler No. 3, 31.4 MMBTU/hr			
18532	Boiler No. 4, 31.4 MMBTU/hr			
18685	Gasoline dispensing			

(A) COMPLIANCE WITH THESE EMISSION LIMITATIONS SHALL BE DETERMINED BY USING THE CALCULATION METHODS SPECIFIED IN ATTACHMENT A TO THE GAS TURBINE P/O 17549.

2. PROPOSED POTENTIAL TO EMIT:

A. NATURAL GAS FIRING:

Proposed emissions from **each** boiler:

Pollutant	Emission Factor (A) lb/MMcf	Proposed Potential to Emit (B) Each of the (4) Boilers When Combusting Natural Gas lb/day
ROC	4	3.0
NOx	10.9	8.2
SOx	0.6	0.5
PM10	10	7.5
CO	75	56.5

(A) EMISSION FACTORS FOR ROC, NOx AND CO ARE BASED ON MANUFACTURER GUARANTEES (WITH NOx AND CO CORRESPONDING TO RULE 411 LIMIT OF 9 PPM NOx AND APPLICANT REQUEST OF 100 PPM CO @ 3% O₂). EMISSION FACTOR FOR SOx AND PM10 ARE BASED ON PREVIOUS PERMITTED EMISSION FACTORS (PREVIOUSLY BASED ON MANUFACTURER'S GUARANTEES).

(B) DAILY EMISSIONS ARE BASED ON OPERATING AT MAXIMUM CAPACITY (0.0314 MMCF/HR) AND 24 HOURS/DAY.

B. DIESEL FUEL FIRING:

Proposed emissions from **each** boiler:

Pollutant	Emission Factor (A) lb/MMBTU	Emission Factor (B) lb/Mgallons	Maximum Allowable Emissions (C) Each of the (4) Boilers When Combusting Diesel Fuel lb/quarter			
			Quarter 1	Quarter 2	Quarter 3	Quarter 4
ROC	0.025	3.4	1712	1712	1712	1712
NOx	0.05	6.9	3474	3474	3474	3474
SOx	0.021	2.9	1460	1460	1460	1460
PM10	0.015	2.1	1057	1057	1057	1057
CO	0.078	10.7	5387	5387	5387	5387

- (A) ROC, PM10 AND CO EMISSION FACTORS ARE BASED ON PREVIOUS PERMITTED EMISSION FACTORS (PREVIOUSLY BASED ON MANUFACTURER GUARANTEES). NOx EMISSION FACTOR EQUIVALENT TO 40 PPMVD AT 3% O2. SOx EMISSION FACTOR BASED ON 0.02% S BY WEIGHT IN THE DIESEL FUEL.
- (B) EMISSION FACTORS CONVERTED TO LB/MGALLONS BASED ON 137,700 BTU/GALLON OF DIESEL FUEL.
- (C) BASED ON 24 HOURS/DAY AND 92 DAYS/QUARTER FOR EACH OF THE 4 BOILERS. BASED ON 31,400,000 BTU/HR HEAT INPUT FOR EACH BOILER, 137,700 BTU/GALLON FOR THE AMBER 363 DIESEL FUEL AND EACH BOILER CAN COMBUST 228 GALLONS/HOUR OF DIESEL FUEL.

C. COMBINED EMISSION LIMITS: Combined emission limits will remain unchanged from the Historic Potential to Emit since no changes to the process or modes of operation are proposed.

Permit No.	Equipment	Proposed Combined Potential to Emit (A) lb/day		
		NOx	ROC	PM10
12979	Boilers (8), 3.2 MMBTU/hr total	150	150	80
17549	Gas turbine, 260 MMBTU/hr			
18685	Gasoline dispensing			
20216	Boiler No. 1, 31.4 MMBTU/hr			
20217	Boiler No. 2, 31.4 MMBTU/hr			
20218	Boiler No. 3, 31.4 MMBTU/hr			
20219	Boiler No. 4, 31.4 MMBTU/hr			

- (A) COMPLIANCE WITH THESE EMISSION LIMITATIONS SHALL BE DETERMINED BY USING THE CALCULATION METHODS SPECIFIED IN ATTACHMENT A TO THE GAS TURBINE P/O 17549.

3. CALCULATION OF BACT TRIGGER:

NEI (BACT) = Net Emissions Increase (92 days/quarter used)
= Proposed Potential to Emit - Historic Potential to Emit
MPE = Maximum Potential Emissions on a 24-Hour Day Operation

Calculation of BACT trigger for each boiler fired on natural gas:

Pollutant	NEI (BACT) lb/quarter	Is NEI (BACT) >0?	MPE lb/day	BACT Trigger Level lb/day	Is BACT Required?
ROC	-555	No	3.0	≥10	No
NOx	-1,671	No	8.2	≥10	No
SOx	0	No	0.5	≥10	No
PM10	0	No	7.5	≥10	No
CO	0	Yes	56.5	≥550	No

Calculation of BACT trigger for each boiler fired on diesel fuel:

Pollutant	NEI (BACT) lb/quarter	Is NEI (BACT) >0?	MPE lb/day	BACT Trigger Level lb/day	Is BACT Required?
ROC	0	No	18.6	≥10	No
NOx	0	No	37.8	≥10	No
SOx	0	No	15.9	≥10	No
PM10	0	No	11.5	≥10	No
CO	0	No	58.6	≥550	No

4. CALCULATION OF OFFSET TRIGGER FOR ROC AND NOx:

Permit No.	Emissions Unit	Stationary Source Potential to Emit lb/quarter	
		ROC	NOx
P/O 9467	IC Engine, Standby	273	9,094
P/O 10707	IC Engine, Standby	172	2,407
P/O 10909	APC NOx Turbine (SCR)	0	0
P/O 10910	APC CO Turbine (NSCR)	0	0
P/O 11494	IC Engine, Standby	324	10,791
P/O 13421	IC Engine, Standby	17	276
P/O 14475	IC Engine, Standby	166	6,930
P/O 18529	Boiler (Central Plant) (A) (B)	Modified by A/C 20216	
P/O 18530	Boiler (Central Plant) (A) (B)	Modified by A/C 20217	
P/O 18531	Boiler (Central Plant) (A) (B)	Modified by A/C 20218	
P/O 18532	Boiler (Central Plant) (A) (B)	Modified by A/C 20219	
P/O 12979	Boilers (California Specials) (B)	13,800	13,800
P/O 17549	Gas Turbine Cogen. (A) (B)		
P/O 18685	GDF (B)		
A/C 20216	Boiler Mod. (Central Plant) (A) (B)		
A/C 20217	Boiler Mod. (Central Plant) (A) (B)		
A/C 20218	Boiler Mod. (Central Plant) (A) (B)		
A/C 20219	Boiler Mod. (Central Plant) (A) (B)		
P/O 18533	IC Engine, Standby (C)	823	31,185
P/O 18534	IC Engine, Standby (C)	823	31,185
P/O 18535	IC Engine, Standby (C)	823	31,185
P/O 18536	IC Engine, Standby (C)	823	31,185
A/C 19775	IC Engine, Standby	79	314
Total		18,123	168,352
Offset Trigger Level		≥5,000	≥5,000

- (A) The worst case NOx emissions will occur when the gas turbine (P/O 17549) and the auxiliary boilers (A/Cs 20216, 20217, 20218, and 20219) are simultaneously operated on natural gas at full load. The emissions for each boiler are derived by dividing the combined emissions for all four boilers by four.
- (B) These emission units (P/Os 12979, 17549 and 18685, and A/Cs 20216, 20217, 20218, and 20219) are limited to 150 lb/day for NOx combined and 150 lb/day for ROC combined. Quarterly emissions are based on operating for 92 days/quarter at the maximum daily combined emission limit.
- (C) The worst case SOx, PM10 and CO emissions will occur when the standby engines (P/Os 18533, 18534, 18535 and 18536) are operated 750 hours/quarter each.

5. CALCULATION OF OFFSET TRIGGER FOR SO_x, PM₁₀ AND CO:

Permit No.	Emissions Unit	Cumulative Emission Increase for this Stationary Source since January 1, 1977 lb/quarter		
		SO _x	PM ₁₀	CO
P/O 9467	IC Engine, Standby	132	198	1,984
P/O 10707	IC Engine, Standby	28	172	521
P/O 10909	APC NO _x Turbine (SCR)	0	0	0
P/O 10910	APC CO Turbine (NSCR)	0	0	0
P/O 11494	IC Engine, Standby	157	235	2,354
P/O 13421	IC Engine, Standby	5	7	197
P/O 14475	IC Engine, Standby	203	132	450
P/O 18529	Boiler Mod. (Central Plant) (A)(B)	Modified by A/C 20216		
P/O 18530	Boiler Mod. (Central Plant) (A)(B)	Modified by A/C 20217		
P/O 18531	Boiler Mod. (Central Plant) (A)(B)	Modified by A/C 20218		
P/O 18532	Boiler Mod. (Central Plant) (A)(B)	Modified by A/C 20219		
P/O 12979	Boilers (California Specials)(B)	4	7,360	2,091
P/O 17549	Gas Turbine Cogen. (A)(B)	0		13,487
P/O 18685	GDF (A)(B)	0		0
A/C 20216	Boiler Mod. (Central Plant) (A) (B)	1,460		5,198
A/C 20217	Boiler Mod. (Central Plant) (A) (B)	1,460		5,198
A/C 20218	Boiler Mod. (Central Plant) (A) (B)	1,460		5,198
A/C 20219	Boiler Mod. (Central Plant) (A) (B)	1,460		5,198
P/O 18533	IC Engine, Standby (C)	306		690
P/O 18534	IC Engine, Standby (C)	306	690	3,039
P/O 18535	IC Engine, Standby (C)	306	690	3,039
P/O 18536	IC Engine, Standby (C)	306	690	3,039
A/C 19775	IC Engine, Standby	7	6	157
Total		7,600	11,140	54,189
Offset Trigger Level		≥13,650	≥7,500	≥49,500

- (A) The worst case SO_x emissions will occur when the gas turbine (P/O 17549) is not operated and the auxiliary boilers (A/Cs 20216, 20217, 20218, and 20219) are firing on fuel oil for 24 hours/day and 92 days/quarter. The worst case CO emissions will occur when the gas turbine is operated at full load on natural gas for 1,458 hours/quarter and the auxiliary boilers are firing on natural gas for 24 hours/day and 92 days/quarter.
- (B) These emission units (P/Os 12979, 17549 and 18685, and A/Cs 20216, 20217, 20218, and 20219) are limited to 80 lb/day for PM₁₀ combined. Quarterly emissions are based on operating for 92 days/quarter at the maximum daily combined emission limit.
- (C) The worst case SO_x, PM₁₀ and CO emissions will occur when the standby engines (P/Os 18533, 18534, 18535 and 18536) are operated 750 hours/quarter each.

6. CALCULATION OF EMISSION OFFSETS FOR ROG AND NOx:

Offsets thresholds are exceeded for ROG and NOx. However, there is no increase in the quarterly emissions potential to emit due to the modification of these permits. Therefore, ROG and NOx offsets are not applicable for this modification.

7. CALCULATION OF EMISSION OFFSETS FOR SOx, PM10 AND CO:

Offsets thresholds are exceeded for PM10 and CO. However, there is no increase in the quarterly PM10 and CO emissions potential to emit due to the modification of these permits. Therefore, PM10 and CO offsets are not applicable for this modification.

Offsets thresholds are not exceeded for SOx. Therefore, no offsets are required for this pollutant.

COMPLIANCE WITH RULES AND REGULATIONS:

1. H&S Code § 42301.6 (AB 3205) COMPLIANCE:

The proposed equipment is located within 1000 feet of a K-12 school, but there is no increase in hazardous air emissions associated with this permitting action modifying the current Permits to Operate. Therefore the notice requirements of California Health and Safety Code Section 42301.6 do not apply (as exempted by Health and Safety Code Section 42301.6g).

2. NSR COMPLIANCE:

Rule 202 – New Source Review

Section 112 – Exemption: Notification Requirements The increase in potential to emit from the equipment will not exceed the levels specified in this section. Therefore, the applications are exempt from the public notice and inspection requirements of Sections 405, 406, 407, and 409.2.

Section 301 – Best Available Control Technology BACT is not triggered for any pollutant, since there are no changes in the hourly, daily, and quarterly operating conditions. The only changes made will affect the requirement to meet the newest NOx emission standards (9 ppmv @ 3% O₂ for natural gas combustion) specified in Rule 411.

Section 302 – Offset The proposed emissions of all criteria pollutants from the modification are below the offsets trigger level specified in this section. Therefore, this application is not subject to offsets requirement.

Section 307 – Denial, Failure to Meet CEQA The SMAQMD utilizes Guide to Air Quality Assessment in Sacramento County, SMAQMD, July 2004 as guide during the initial study phase of a proposed project to determine the level of review necessary under CEQA (referenced in the IC Engine Policy manual last updated December of 2006).

- a. ROG and NOx – The average daily emissions are 151.2 lb/day of NOx and 74.4 lb/day of ROG when fired on diesel fuel. However, there is no increase in daily, quarterly or annual emissions, and actually results in a reduction of emissions. Therefore, the trigger levels of 65 lb/day are not triggered.
- b. Other pollutants – The project does not result in operational emissions that could lead to violations of any applicable state Ambient Air Quality Standards.

- c. Toxic Air Contaminants – The project does not trigger T-BACT requirements.
- d. Cumulative TACs – The project is not located near any sources identified in the AB2588 program which result in a cumulative risk greater than 10 in one million.

As the project meets the above statutory exemptions, the project does not require further CEQA review.

3. **PSD COMPLIANCE:** Not applicable.

4. **PROHIBITORY RULES COMPLIANCE:**

Rule 401 – Ringelmann Chart

Visible emissions are expected to comply with the Ringelmann No. 1 or 20% opacity requirement of this rule.

Rule 402 – Nuisance

A screening health risk assessment was performed for the initial permitting of this project in 1994 (see evaluation for P/O 10908). The excess cancer risk associated with the project was estimated to be less than 10 in 1 million. Acceptable values are excess cancer risks of less than 10 in 1 million. Since there is no emission change resulting in an increase of hazardous air emissions (i.e., diesel PM10 emissions did not increase) associated with this permitting action, the previously calculated health risk remains the same.

Rule 406 – Specific Contaminants

The initial permitting action in 1994 indicated compliance with the emissions limit of 0.2% by volume sulfur compound as SO₂ and 0.1 gr/dscf of other combustion gases calculated to 12% CO₂. Since there is no emission change in SO_x and PM10 associated with this modification the previously indicated compliance with SMAQMD Rule 406 remains the same.

Rule 411 – Boiler NOx

Boilers No. 1, 2, 3, and 4 (A/Cs 20216, 20217, 20218, & 20219) will be retrofitted with ultra low-NOx burners to meet the emission standards of 9 ppm NOx and 400 ppm CO at 3% O₂ when fueled by natural gas, as required by Rule 411, Section 301. In addition, the boilers must continue to meet the emission limits of 40 ppm NOx and 400 ppm CO at 3% O₂ when fueled by diesel no. 2, as required by Rule 411, Section 302. The boilers are subject to the annual source testing requirements to verify the NOx and CO emission rates when fired on natural gas as specified in Rule 411, Section 403.

Rule 420 – Sulfur Content of Fuels

Pipeline quality natural gas will comply with the 0.5% sulfur content requirement of this rule.

The State of California regulated sulfur content of California Ultra Low Sulfur Diesel no. 2 fuel (<0.0015%) should meet the 0.5% sulfur content requirement of this rule and the 0.02% sulfur content limit originally requested by UCDMC in 1994 (see Evaluation for P/O 10908).

5. **NSPS COMPLIANCE:**

NSPS (40 CFR Part 60 Subpart Dc) affects steam generating units with a heat capacity of 10 - 100 mmBTU/hour and are modified after June 9, 1989. The NSPS limits the sulfur content of

the distillate fuel oil to a maximum of 0.5% by weight, limits the opacity of the stack emission to a maximum of 20%, and requires recordkeeping and reporting on the fuel oil.

UCDMC had previously demonstrated compliance with the distillate fuel oil sulfur content by fuel oil supplier certification (40 CFR 60.44c(h)). The fuel oil supplier certification must contain the following (40 CFR 60.48c(f)):

1. Name of the oil supplier
2. Statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in 40 CFR 60.41c.
[*Distillate oil* means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-78, "Standard Specifications for Fuel Oils".]

In addition, UCDMC must keep records of the fuel oil supplier certification and submit a report every six months that includes the following (40 CFR 60.48c(e)):

1. Calendar dates covered in the reporting period.
2. Records of fuel oil supplier certification.
3. Certified statement signed by the owner or operator of the affected facility that the records of fuel oil supplier certification submitted represent all of the fuel combusted during the reporting period.

By continuing to meet these requirements, NSPS is satisfied for boilers No. 1, 2, 3, and 4.

6. NESHAP COMPLIANCE: Not applicable.

RECOMMENDATION:

The equipment should comply with all applicable District rules and regulations. An Authority to Construct should be issued indicating the conditions outlined in this Authority to Construct Evaluation.

PREPARED BY: Michelle Joe **DATE:** May 17, 2007

REVIEWED BY: _____ **DATE:** _____