AKRF
Environmental and Planning Consultants

440 Park Avenue South
New York, NY 10016
tel: 800 899-AKRF
fax: 212 213-3191
www.akrf.com

September 20, 2010

Mr. Adedoyin Oduba
NYCDEP
59-17 Junction Boulevard, 9th Floor
Corona, NY 11368-5107

Dear Mr. Oduba,

Per our previous discussions, we are resubmitting the attached revised air permit applications for the new cogeneration system consisting of two 7.5 MW (total of 15 MW) simple cycle natural gas fired turbines with heat recovery duct firing, to be located at the Rikers Island prison facility. Also attached is a copy of the disapproval letter from the DEP. There are two new (2) gas turbine/heat recovery trains. Each train has two (2) stacks--a main stack and a bypass stack. We have prepared a total of 2 applications- one application per gas turbine/heat recovery train. For the first train (Train #1), the main stack is U0025 and the bypass stack is U0026. For the second train (Train #2), the main stack is U0027 and the bypass stack is U0028. Therefore, the new cogeneration facility will have four (4) stack emission points.

Each application (total of 2 applications) consists of the following: one P.E. certification, 3 copies of Environmental Rating Report, 3 copies of Process Exhaust Application for each emission point, emission rate table, 3 copies of site plan, 3 copies of the process flow diagram, and 3 copies of the elevation drawing. The hard copies of the applications are being sent to you by regular mail.

We trust these revised applications will meet your requirements. Please free feel to call me if you have any questions.

Sincerely,
AKRF, Inc.

Ramon Li, P.E.
Technical Director

Enclosures

Cc: Rafael Hodge, P.E., NYCDEP (w/o enclosure)
Randall Solomon, NYPA (w/o enclosure)
Ed Holman, NYPA (w/o enclosure)
Mike Gillespie, AECOM (w/o enclosure)
Jennifer Franco, AKRF (w/o enclosure)

New York City Department of Environmental Protection

PC Rev 02/09

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Bureau of Environmental Compliance
59-17 Junction Boulevard, 9th Floor, Flushing, New York 11373-5108
Records Control (718) 595-3855

Date: September 16, 2010

Installation #: PB008210X

Reference: Rikers Island, 17-25 Hazen Street East Elmhurst NY 11370 Queens

Premise's Address *City* *State* *Zip* *Borough*

PROFESSIONAL CERTIFICATION

Being duly mindful of my responsibilities as a licensed Professional Engineer / Registered Architect in the State of New York and acting as designated agent for the applicant, I hereby certify that the application, plans, and all supplementary documents submitted in connection with this filing are complete and fully comply with all applicable laws, codes, rules, regulations, and directives of the Department of Environmental Protection, Bureau of Environmental Compliance of the City of New York in effect at the time filed.

N.Y.S. P.E. or R. A. Seal: STATE OF NEW YORK RAMON LI No. 060857 LICENSED PROFESSIONAL ENGINEER

N.Y.S. P.E. or R. A. Signature:

N.Y.S. P.E. or R. A. Name: Ramon Li, P.E.

N.Y.S. P.E. or R. A. License Number: 060857

INSTRUCTIONS: Pursuant to Engineering Directive Number 1-78, this certification must be submitted in triplicate with all APC 5-0, APC 5-R, and APC 5-PA applications and does not preclude the necessity to sign and seal the certification now contained on the application forms.

New York City Department of Environmental Protection

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Environmental Compliance
59-17 Junction Boulevard, 9th Floor, Flushing, New York 11373-5107
Records Control (718) 595-3855

INDUSTRIAL PROCESSES DIVISION ENVIRONMENTAL RATING REPORT SUMMARY OF POINTS OF EMISSION (FORM APC 3PA)

EN NUMBER: PB008210X

PREMISE IDENTIFICATION NUMBER:

1. COMPANY NAME: NYC Department of Correction

2. PREMISE ADDRESS: NYC-DOC-Rikers Island, 17-25 Hazen St., East Elmhurst, NY ZIP CODE: 11370

3. MAILING ADDRESS: 17-25 Hazen Street, East Elmhurst, NY ZIP CODE: 11370

TELEPHONE NUMBER: 718-546-1488

4. NAME OF PERSON PREPARING REPORT: Ramon Li, P.E.

5. ADDRESS: AKRF, Inc. 440 Park Avenue South, 7th Floor, New York, NY ZIP CODE: 10016

6. TELEPHONE NUMBER: 616-388-9724

7. SEC.	LOT	BLOCK
4	40	2605

8. EMISSION POINT NUMBER	9. OPERATION PRODUCING EMISSION	10. ENVIRONMENTAL RATING PROPOSED	ASSIGNED BY BEC
U0025	Natural gas fired turbine #1 with duct firing HRSG (main stack)	D	
U0026	Bypass stack for turbine #1	D	

THIS REPORT IS: ☐ NEW ☑ REVISION ☐ ADDENDUM

STATE OF NEW YORK
RAMON LI
No. 060857
LICENSED PROFESSIONAL ENGINEER

11. SIGNATURE: TITLE: Technical Director DATE: September 16, 2010

New York City Department of Environmental Protection

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Environmental Compliance
59-17 Junction Boulevard, 9th Floor, Flushing, New York 11373-5107
Records Control (718) 595-3855

INDUSTRIAL PROCESSES DIVISION ENVIRONMENTAL RATING REPORT SUMMARY OF POINTS OF EMISSION (FORM APC 3PA)

EN NUMBER: PB008210X

PREMISE IDENTIFICATION NUMBER:

1. COMPANY NAME: NYC Department of Correction

2. PREMISE ADDRESS: NYC-DOC-Rikers Island, 17-25 Hazen St., East Elmhurst, NY ZIP CODE: 11370

3. MAILING ADDRESS: 17-25 Hazen Street, East Elmhurst, NY ZIP CODE: 11370

TELEPHONE NUMBER: 718-546-1488

4. NAME OF PERSON PREPARING REPORT: Ramon Li, P.E.

5. ADDRESS: AKRF, Inc. 440 Park Avenue South, 7th Floor, New York, NY ZIP CODE: 10016

6. TELEPHONE NUMBER: 616-388-9724

7. SEC.	LOT	BLOCK
4	40	2605

8. EMISSION POINT NUMBER	9. OPERATION PRODUCING EMISSION	10. ENVIRONMENTAL RATING PROPOSED	ASSIGNED BY BEC
U0025	Natural gas fired turbine #1 with duct firing HRSG (main stack)	D	
U0026	Bypass stack for turbine #1	D	

THIS REPORT IS: ☐ NEW ☑ REVISION ☐ ADDENDUM

STATE OF NEW YORK RAMON LI 060857 LICENSED PROFESSIONAL ENGINEER

11. SIGNATURE: TITLE: Technical Director DATE: September 16 2010

New York City Department of Environmental Protection

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Environmental Compliance
59-17 Junction Boulevard, 9th Floor, Flushing, New York 11373-5107
Records Control (718) 595-3855

INDUSTRIAL PROCESSES DIVISION ENVIRONMENTAL RATING REPORT SUMMARY OF POINTS OF EMISSION (FORM APC 3PA)

EN NUMBER: PB008210X

PREMISE IDENTIFICATION NUMBER:

1. COMPANY NAME: NYC Department of Correction

2. PREMISE ADDRESS: NYC-DOC-Rikers Island, 17-25 Hazen St., East Elmhurst, NY ZIP CODE: 11370

3. MAILING ADDRESS: 17-25 Hazen Street, East Elmhurst, NY ZIP CODE: 11370

TELEPHONE NUMBER: 718-546-1488

4. NAME OF PERSON PREPARING REPORT: Ramon Li, P.E.

5. ADDRESS: AKRF, Inc. 440 Park Avenue South, 7th Floor, New York, NY ZIP CODE: 10016

6. TELEPHONE NUMBER: 616-388-9724

7. SEC.	LOT	BLOCK
4	40	2605

8. EMISSION POINT NUMBER	9. OPERATION PRODUCING EMISSION	10. ENVIRONMENTAL RATING PROPOSED	ASSIGNED BY BEC
U0025	Natural gas fired turbine #1 with duct firing HRSG (main stack)	D	
U0026	Bypass stack for turbine #1	D	

THIS REPORT IS: ☐ NEW ☑ REVISION ☐ ADDENDUM

STATE OF NEW YORK RAMON LI No. 060857 LICENSED PROFESSIONAL ENGINEER

11. SIGNATURE: TITLE: Technical Director DATE: September 16 2010

OP | LOCATION | FACILITY | EMISSION POINT

A ADD
C CHANGE
D DELETE

READ INSTRUCTIONS CONTAINED IN FORM 75-11-12 BEFORE ANSWERING ANY QUESTION

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PROCESS, EXHAUST OR VENTILATION SYSTEM

APPLICATION FOR PERMIT TO CONSTRUCT OR CERTIFICATE TO OPERATE

COPIES
WHITE - ORIGINAL
GREEN - DIVISION OF AIR
WHITE - REGIONAL OFFICE
WHITE - FIELD REP.
YELLOW - APPLICANT

SECTION A

1. NAME OF OWNER / FIRM	NYC Department of Correction
2. NUMBER AND STREET ADDRESS	60 Hudson Street, Room 719
3. CITY - TOWN - VILLAGE	New York
4. STATE	NY
5. ZIP	10013
6. OWNER CLASSIFICATION	A ☐ COMMERCIAL B ☐ INDUSTRIAL C ☐ UTILITY D ☐ FEDERAL E ☐ STATE F ☐ MUNICIPAL G ☐ EDUC. INST. H ☐ HOSPITAL I ☐ RESIDENTIAL J ☒ OTHER
7. NAME & TITLE OF OWNERS REPRESENTATIVE	Gregory McLaughlin, Warden/Support Services Division
8. TELEPHONE	718-546-1429
9. NAME OF AUTHORIZED AGENT	AKRF, Inc.
10. TELEPHONE	212-696-0670
11. NUMBER AND STREET ADDRESS	440 Park Avenue South, 7th Floor
12. CITY - TOWN - VILLAGE	New York
13. STATE	
14. ZIP	10016
15. NAME OF P.E. OR ARCHITECT PREPARING APPLICATION	Ramon Li, P.E.
16. N.Y.S. LICENSE OR ARCHITECT LICENSE NO.	060851
17. TELEPHONE	646-388-9724
18. SIGNATURE OF OWNERS REPRESENTATIVE OR AUTHORIZED AGENT APPLYING FOR CONSTRUCTION PERMIT	
19. FACILITY NAME (IF DIFFERENT FROM OWNER / FIRM)	NYC-DOC-Rikers Island
20. FACILITY LOCATION (NUMBER AND STREET ADDRESS)	17-25 Hazen Street
21. CITY - TOWN - VILLAGE	East Elmhurst, NY
22. ZIP	11370
23. BUILDING NAME OR NUMBER	Cogen Building
24. FLOOR NAME OR NUMBER	1
25. START UP DATE	07 / 2012 (MO / YR)
26. DRAWING NUMBERS OF PLANS SUBMITTED	Figures 1, 2, and 3
27. PERMIT TO CONSTRUCT	A ☒ NEW SOURCE B ☐ MODIFICATION
28. CERTIFICATE TO OPERATE	A ☐ NEW SOURCE B ☐ MODIFICATION C ☐ EXISTING SOURCE

STATE OF NEW YORK · RAMON LI · No. 060851 · LICENSED PROFESSIONAL ENGINEER

SECTION B

29. EMISSION POINT ID	30. GROUND ELEVATION (FT.)	31. HEIGHT ABOVE STRUCTURES (FT.)	32. STACK HEIGHT (FT.)	33. INSIDE DIMENSIONS (IN.)	34. EXIT TEMP. (°F)	35. EXIT VELOCITY (FT/SEC)	36. EXIT FLOW RATE (ACFM)	37. SOURCE CODE	38. HRS/DAY	39. DAYS/YR	40. % OPERATION BY SEASON Winter	Spring	Summer	Fall
U0025	15	107	150	60	292	58.0	68,345		24	365	25	25	25	25

SECTION C

41. DESCRIBE PROCESS OR UNIT

This permit application is for a 7.5 MW simple cycle gas fired turbine with duct firing HRSG (Train #1). Emission Point U0025 is the main stack, which exhausts the turbine, duct burner and HRSG. Exhaust from the turbine could, however, go through a bypass stack (Emission Point U0026) when steam demand is low. Emissions between the two stacks would be proportional to the load through each stack. Emissions from U0025 reflect total emissions through the main stack at 100 percent load and at ISO conditions (ambient temp. of 59F).

SECTION D

EMISSION CONTROL EQUIPMENT ID	CONTROL TYPE	MANUFACTURER NAME AND MODEL NUMBER	DISPOSAL METHOD	DATE INSTALLED MONTH / YEAR	USEFUL LIFE
42. None	43.	44.	45.	46. /	47.
48.	49.	50.	51.	52. /	53.

SECTION E

CALCULATIONS

See attached emissions calculation sheet.

SECTION F

CONTAMINANT NAME	CAS NUMBER	INPUT TO PRODUCTION	UNIT	BW RATING	EMISSIONS ACTUAL	UNIT	FLOW RATE	PERMISSIBLE	% CONTROL EFFICIENCY	HOURLY EMISSIONS LBS/HR EMP	ACTUAL	ANNUAL EMISSIONS (LBS/YR) ACTUAL	TON	PERMISSIBLE
54. Total Particulates	55. NY75-00-0	56.	57.	58.	59. 2.02	60. 01	61. 4	62.	63.	64. 2.02	65. 2.02	66. 17,718	67. 0	68.
69. Sulfur Dioxide	70. 7446_09_5	71.	72.	73.	74. 0.40	75. 01	76. 4	77.	78.	79. 0.40	80. 0.40	81. 3,504	82. 0	83.
84. Nitrogen Oxides	85. NY210_00_0	86.	87.	88.	89. 6.37	90. 01	91. 4	92.	93.	94. 6.37	95. 6.37	96. 55,836	97. 0	98.
99. Carbon Monoxide	100. 630-08-0	101.	102.	103.	104. 7.76	105. 01	106. 4	107.	108.	109. 7.76	110. 7.76	111. 67,943	112. 0	113.
114. Volatile Organic Compounds	115. NY998-00-0	116.	117.	118.	119. 0.44	120. 01	121. 4	122.	123.	124. 0.44	125. 0.44	126. 3,871	127. 0	128.
129.	130.	131.	132.	133.	134.	135.	136.	137.	138.	139.	140.	141.	142.	143.

SECTION G

SOLID FUEL TYPE	TONS / YR	% S	LIQUID FUEL TYPE	THOUSANDS OF GALLONS/YR	% S	GAS TYPE	THOUSANDS OF CF/YR	BTU/CF
144.	145.	146.	147.	148.	149.	150. 52	151. 1,059,705	1030

APPLICABLE RULE	APPLICABLE RULE
153.	154.

Upon completion of construction sign the statement listed below and forward to the appropriate field representative

THE PROCESS, EXHAUST OR VENTILATION SYSTEM HAS BEEN CONSTRUCTED AND WILL BE OPERATED IN ACCORDANCE WITH STATED SPECIFICATIONS AND IN CONFORMANCE WITH ALL PROVISIONS OF EXISTING REGULATIONS

155. SIGNATURE OF AUTHORIZED REPRESENTATIVE OR AGENT | DATE

AGENCY USE ONLY

156. LOCATION CODE	157. FACILITY ID. NO.	158. U.T.M. (E)	159. U.T.M. (N)	160. SIC NUMBER	161. DATE APPL. RECEIVED	162. DATE APPL. REVIEWED	163. REVIEWED BY
					/ /	/ /	

PERMIT TO CONSTRUCT

164. DATE ISSUED	165. EXPIRATION DATE	166. SIGNATURE OF APPROVAL	167. FEE
/ /	/ /		

166.
1. DEVIATION FROM APPROVED APPLICATION SHALL VOID THIS PERMIT
2. THIS IS NOT A CERTIFICATE TO OPERATE
3. TESTS AND/OR ADDITIONAL EMISSION CONTROL EQUIPMENT MAY BE REQUIRED PRIOR TO THE ISSUANCE OF A CERTIFICATE TO OPERATE

CERTIFICATE TO OPERATE

169. DATE ISSUED	170. EXPIRATION DATE	171. SIGNATURE OF APPROVAL	172. FEE
/ /	/ /		

173.
1. ☐ INSPECTED BY _____ DATE _____
2. ☐ INSPECTION DISCLOSED DIFFERENCES AS BUILT VS. PERMIT, CHANGES INDICATED ON FORM
3. ☐ ISSUE CERTIFICATE TO OPERATE FOR SOURCE AS BUILT
4. ☐ APPLICATION FOR C.O. DENIED _____ DATE _____ INITIALED _____

174. SPECIAL CONDITIONS

1. | 2.
3. | 4.
5. | 6.
7. | 8.

OP | LOCATION | FACILITY | EMISSION POINT

A ADD
C CHANGE
D DELETE

READ INSTRUCTIONS CONTAINED IN FORM 75-1-1-12 BEFORE ANSWERING ANY QUESTION

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

COPIES
WHITE - ORIGINAL
GREEN - DIVISION OF AIR
WHITE - REGIONAL OFFICE
WHITE - FIELD REP.
YELLOW - APPLICANT

PROCESS, EXHAUST OR VENTILATION SYSTEM

APPLICATION FOR PERMIT TO CONSTRUCT OR CERTIFICATE TO OPERATE

SECTION A

1. NAME OF OWNER / FIRM: NYC Department of Correction
2. NUMBER AND STREET ADDRESS: 60 Hudson Street, Room 719
3. CITY - TOWN - VILLAGE: New York
4. STATE: NY
5. ZIP: 10013
6. OWNER CLASSIFICATION: A. ☐ COMMERCIAL B. ☐ INDUSTRIAL C. ☐ UTILITY D. ☐ FEDERAL E. ☐ STATE F. ☐ MUNICIPAL G. ☐ EDUC INST H. ☐ HOSPITAL I. ☐ RESIDENTIAL J. ☒ OTHER
7. NAME & TITLE OF OWNERS REPRESENTATIVE: Gregory McLaughlin, Warden/Support Services Division
8. TELEPHONE: 718-546-1429
9. NAME OF AUTHORIZED AGENT: AKRF, Inc.
10. TELEPHONE: 212-696-0670
11. NUMBER AND STREET ADDRESS: 440 Park Avenue South, 7th Floor
12. CITY - TOWN - VILLAGE: New York
13. STATE: NY
14. ZIP: 10016
15. NAME OF P.E. OR ARCHITECT PREPARING APPLICATION: Ramon E. [illegible]
16. N.Y.S. P.E. OR ARCHITECT LICENSE NO.: 060857
17. TELEPHONE: 646-388-9724
18. SIGNATURE OF OWNER, PROFESSIONAL ENGINEER OR AGENT WHEN APPLYING FOR A PERMIT TO CONSTRUCT
19. FACILITY NAME (IF DIFFERENT FROM OWNER / FIRM): NYC-DOC-Rikers Island
20. FACILITY LOCATION (NUMBER AND STREET ADDRESS): 17-25 Hazen Street
21. CITY - TOWN - VILLAGE: East Elmhurst, NY
22. ZIP: 11370
23. BUILDING NAME OR NUMBER: Cogen Building
24. FLOOR NAME OR NUMBER: 1
25. START UP DATE: 07 (MO) / 2012 (YR)
26. DRAWING NUMBERS OF PLANS SUBMITTED: Figures 1, 2, and 3
27. PERMIT TO CONSTRUCT: A. ☒ NEW SOURCE B. ☐ MODIFICATION
28. CERTIFICATE TO OPERATE: A. ☐ NEW SOURCE B. ☐ MODIFICATION C. ☐ EXISTING SOURCE

STATE OF NEW YORK — RAMON LI — No. 060857 — LICENSED PROFESSIONAL ENGINEER

SECTION B

29. EMISSION POINT ID	30. GROUND ELEVATION (FT.)	31. HEIGHT ABOVE STRUCTURES (FT.)	32. STACK HEIGHT (FT.)	33. INSIDE DIMENSIONS (IN.)	34. EXIT TEMP. (°F)	35. EXIT VELOCITY (FT./SEC.)	36. EXIT FLOW RATE (ACFM)	37. SOURCE CODE	38. HRS / DAY	39. DAYS / YR	40. % OPERATION BY SEASON Winter	Spring	Summer	Fall
U0025	15	107	150	60	292	58.0	68,345		24	365	25	25	25	25

SECTION C

41. DESCRIBE PROCESS OR UNIT:

This permit application is for a 7.5 MW simple cycle gas fired turbine with duct firing HRSG (Train #1). Emission Point U0025 is the main stack, which exhausts the turbine, duct burner and HRSG. Exhaust from the turbine could, however, go through a bypass stack (Emission Point U0026) when steam demand is low. Emissions between the two stacks would be proportional to the load through each stack. Emissions from U0025 reflect total emissions through the main stack at 100 percent load and at ISO conditions (ambient temp. of 59F).

SECTION D

EMISSION CONTROL EQUIPMENT I.D.	CONTROL TYPE	MANUFACTURER'S NAME AND MODEL NUMBER	DISPOSAL METHOD	DATE INSTALLED MONTH / YEAR	USEFUL LIFE
None				/	
				/	

SECTION E

CALCULATIONS

See attached emissions calculation sheet.

SECTION F

CONTAMINANT NAME	CAS NUMBER	INPUT OR PRODUCTION	UNIT	ENV. RATING	EMISSIONS ACTUAL	UNIT	HOURLY OR ANNUAL	PERMISSIBLE	% CONTROL EFFICIENCY	HOURLY EMISSIONS (LBS/HR) EMP	ACTUAL	ANNUAL EMISSIONS (LBS/YR) ACTUAL	UNIT	PERMISSIBLE
Total Particulates	NY75-00-0				2.02	01	4			2.02	2.02	17,718	0	
Sulfur Dioxide	7446_09_5				0.40	01	4			0.40	0.40	3,504	0	
Nitrogen Oxides	NY210_00_0				6.37	01	4			6.37	6.37	55,836	0	
Carbon Monoxide	630-08-0				7.76	01	4			7.76	7.76	67,943	0	
Volatile Organic Compounds	NY998-00-0				0.44	01	4			0.44	0.44	3,871	0	
	- -													

SECTION G

SOLID FUEL TYPE	TONS / YR	% S	LIQUID FUEL TYPE	THOUSANDS OF GALLONS/YR	% S	GAS TYPE	THOUSANDS OF CF/YR	BTU/CF	APPLICABLE RULE	APPLICABLE RULE
							52	1,059,705	1030	

Upon completion of construction sign the statement listed below and forward to the appropriate field representative

THE PROCESS, EXHAUST OR VENTILATION SYSTEM HAS BEEN CONSTRUCTED AND WILL BE OPERATED IN ACCORDANCE WITH STATED SPECIFICATIONS AND IN CONFORMANCE WITH ALL PROVISIONS OF EXISTING REGULATIONS.

155. SIGNATURE OF AUTHORIZED REPRESENTATIVE OR AGENT | DATE

AGENCY USE ONLY

156. LOCATION CODE | 157. FACILITY ID. NO. | 158. U.T.M. (E) | 159. U.T.M. (N) | 160. SIC NUMBER | 161. DATE APPL. RECEIVED / / | 162. DATE APPL. REVIEWED / / | 163. REVIEWED BY

PERMIT TO CONSTRUCT

164. DATE ISSUED / / | 165. EXPIRATION DATE / / | 166. SIGNATURE OF APPROVAL | 167. FEE

168.
1. DEVIATIONS FROM APPROVED APPLICATION SHALL VOID THIS PERMIT
2. THIS IS NOT A CERTIFICATE TO OPERATE
3. TESTS AND/OR ADDITIONAL EMISSION CONTROL EQUIPMENT MAY BE REQUIRED PRIOR TO THE ISSUANCE OF A CERTIFICATE TO OPERATE

CERTIFICATE TO OPERATE

169. DATE ISSUED / / | 170. EXPIRATION DATE / / | 171. SIGNATURE OF APPROVAL | 172. FEE

173.
1. ☐ INSPECTED BY ____ DATE ____
2. ☐ INSPECTION DISCLOSED DIFFERENCES AS BUILT VS. PERMIT, CHANGES INDICATED ON FORM
3. ☐ ISSUE CERTIFICATE TO OPERATE FOR SOURCE AS BUILT
4. ☐ APPLICATION FOR C.O. DENIED ____ DATE ____ INITIALED ____

174. SPECIAL CONDITIONS:
1. | 2. | 3. | 4. | 5. | 6. | 7. | 8.

OP	LOCATION	FACILITY	EMISSION POINT

A ADD
C CHANGE
D DELETE

READ INSTRUCTIONS CONTAINED IN FORM 78-11-12 BEFORE ANSWERING ANY QUESTION

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

COPIES
WHITE - ORIGINAL
GREEN - DIVISION OF AIR
WHITE - REGIONAL OFFICE
WHITE - FIELD REP.
YELLOW - APPLICANT

PROCESS, EXHAUST OR VENTILATION SYSTEM

APPLICATION FOR PERMIT TO CONSTRUCT OR CERTIFICATE TO OPERATE

SECTION A

1. NAME OF OWNER / FIRM	NYC Department of Correction
2. NUMBER AND STREET ADDRESS	60 Hudson Street, Room 719
3. CITY - TOWN - VILLAGE	New York
4. STATE	NY
5. ZIP	10013
6. OWNER CLASSIFICATION	A. ☐ COMMERCIAL B. ☐ INDUSTRIAL C. ☐ UTILITY D. ☐ FEDERAL E. ☐ STATE F. ☐ MUNICIPAL G. ☐ EDUC INST H. ☐ HOSPITAL I. ☐ RESIDENTIAL J. ☒ OTHER
7. NAME & TITLE OF OWNERS REPRESENTATIVE	Gregory McLaughlin, Warden/Support Services Division
8. TELEPHONE	718-546-1429
9. NAME OF AUTHORIZED AGENT	AKRF, Inc.
10. TELEPHONE	212-696-0670
11. NUMBER AND STREET ADDRESS	440 Park Avenue South, 7th Floor
12. CITY - TOWN - VILLAGE	New York
13. STATE	NY
14. ZIP	10016
15. NAME OF A.E. OR ARCHITECT PREPARING APPLICATION	Ramon Li, P.E.
16. N.Y.S. P.E. OR ARCHITECT LICENSE NO.	060054
17. TELEPHONE	646-388-9724
18. SIGNATURE OF OWNERS REPRESENTATIVE OR AGENT APPLYING FOR PERMIT TO CONSTRUCT	STATE OF NEW YORK · RAMON LI · No. 060054 · LICENSED PROFESSIONAL ENGINEER
19. FACILITY NAME (IF DIFFERENT FROM OWNER / FIRM)	NYC-DOC-Rikers Island
20. FACILITY LOCATION (NUMBER AND STREET ADDRESS)	17-25 Hazen Street
21. CITY - TOWN - VILLAGE	East Elmhurst, NY
22. ZIP	11370
23. BUILDING NAME OR NUMBER	Cogen Building
24. FLOOR NAME OR NUMBER	1
25. START UP DATE	07 / 2012 (MO / YR)
26. DRAWING NUMBERS OF PLANS SUBMITTED	Figures 1, 2, and 3
27. PERMIT TO CONSTRUCT	A. ☒ NEW SOURCE B. ☐ MODIFICATION
28. CERTIFICATE TO OPERATE	A. ☐ NEW SOURCE B. ☐ MODIFICATION C. ☐ EXISTING SOURCE

SECTION B

29. EMISSION POINT ID	30. GROUND ELEVATION (FT.)	31. HEIGHT ABOVE STRUCTURES (FT.)	32. STACK HEIGHT (FT.)	33. INSIDE DIMENSIONS (IN.)	34. EXIT TEMP. (°F)	35. EXIT VELOCITY (FT./SEC.)	36. EXIT FLOW RATE (ACFM)	37. SOURCE CODE	38. HRS / DAY	39. DAYS / YR	40. % OPERATION BY SEASON: Winter	Spring	Summer	Fall
U0025	15	107	150	60	292	58.0	68,345		24	365	25	25	25	25

SECTION C

41. DESCRIBE PROCESS OR UNIT

This permit application is for a 7.5 MW simple cycle gas fired turbine with duct firing HRSG (Train #1). Emission Point U0025 is the main stack, which exhausts the turbine, duct burner and HRSG. Exhaust from the turbine could, however, go through a bypass stack (Emission Point U0026) when steam demand is low. Emissions between the two stacks would be proportional to the load through each stack. Emissions from U0025 reflect total emissions through the main stack at 100 percent load and at ISO conditions (ambient temp. of 59F).

SECTION D

EMISSION CONTROL EQUIPMENT I.D.	CONTROL TYPE	MANUFACTURER'S NAME AND MODEL NUMBER	DISPOSAL METHOD	DATE INSTALLED MONTH / YEAR	USEFUL LIFE
42. None	43.	44.	45.	46. /	47.
48.	49.	50.	51.	52. /	53.

SECTION E

CALCULATIONS

See attached emissions calculation sheet.

SECTION F

CONTAMINANT NAME	CAS NUMBER	INPUT OR PRODUCTION	UNIT	ENV. RATING	EMISSIONS ACTUAL	UNIT	MON. CET.	PERMISSIBLE	% CONTROL EFFICIENCY	HOURLY EMISSIONS (LBS/HR) EAP	ACTUAL	ANNUAL EMISSIONS (LBS/YR) ACTUAL	104	PERMISSIBLE
54. Total Particulates	55. NY75-00-0	56.	57.	58.	59. 2.02	60. 01	61. 4	62.	63.	64. 2.02	65. 2.02	66. 17,718	67. 0	68.
69. Sulfur Dioxide	70. 7446_09_5	71.	72.	73.	74. 0.40	75. 01	76. 4	77.	78.	79. 0.40	80. 0.40	81. 3,504	82. 0	83.
84. Nitrogen Oxides	85. NY210_00_0	86.	87.	88.	89. 6.37	90. 01	91. 4	92.	93.	94. 6.37	95. 6.37	96. 55,836	97. 0	98.
99. Carbon Monoxide	100. 630_08_0	101.	102.	103.	104. 7.76	105. 01	106. 4	107.	108.	109. 7.76	110. 7.76	111. 67,943	112. 0	113.
114. Volatile Organic Compounds	115. NY998-00-0	116.	117.	118.	119. 0.44	120. 01	121. 4	122.	123.	124. 0.44	125. 0.44	126. 3,871	127. 0	128.
129.	130. - -	131.	132.	133.	134.	135.	136.	137.	138.	139.	140.	141.	142.	143.

SECTION G

SOLID FUEL TYPE	TONS / YR	% S	LIQUID FUEL TYPE	THOUSANDS OF GALLONS/YR	% S	GAS TYPE	THOUSANDS OF CF/YR	BTU/CF
144	145	146	147	148	149	150 52	151 1,059,705	152 1030

APPLICABLE RULE	APPLICABLE RULE
153	154

Upon completion of construction sign the statement listed below and forward to the appropriate field representative

THE PROCESS, EXHAUST OR VENTILATION SYSTEM HAS BEEN CONSTRUCTED AND WILL BE OPERATED IN ACCORDANCE WITH STATED SPECIFICATIONS AND IN CONFORMANCE WITH ALL PROVISIONS OF EXISTING REGULATIONS.

155. SIGNATURE OF AUTHORIZED REPRESENTATIVE OR AGENT | DATE

AGENCY USE ONLY

156. LOCATION CODE	157. FACILITY ID. NO.	158. U.T.M. (E)	159. U.T.M. (N)	160. SIC NUMBER	161. DATE APPL. RECEIVED	162. DATE APPL. REVIEWED	163. REVIEWED BY
					/ /	/ /	

PERMIT TO CONSTRUCT

164. DATE ISSUED	165. EXPIRATION DATE	166. SIGNATURE OF APPROVAL	167. FEE
/ /	/ /		

168.
1. DEVIATION FROM APPROVED APPLICATION SHALL VOID THIS PERMIT
2. THIS IS NOT A CERTIFICATE TO OPERATE
3. TESTS AND/OR ADDITIONAL EMISSION CONTROL EQUIPMENT MAY BE REQUIRED PRIOR TO THE ISSUANCE OF A CERTIFICATE TO OPERATE

CERTIFICATE TO OPERATE

169. DATE ISSUED	170. EXPIRATION DATE	171. SIGNATURE OF APPROVAL	172. FEE
/ /	/ /		

173.
1. ☐ INSPECTED BY _____ DATE _____
2. ☐ INSPECTION DISCLOSED DIFFERENCES AS BUILT VS. PERMIT, CHANGES INDICATED ON FORM
3. ☐ ISSUE CERTIFICATE TO OPERATE FOR SOURCE AS BUILT
4. ☐ APPLICATION FOR C.O. DENIED _____ DATE _____ INITIALED _____

174. SPECIAL CONDITIONS:

1. | 2.
3. | 4.
5. | 6.
7. | 8.

OP | LOCATION | FACILITY | EMISSION POINT

A ADD
C CHANGE
D DELETE

READ INSTRUCTIONS CONTAINED IN FORM 78-11-12 BEFORE ANSWERING ANY QUESTION

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PROCESS, EXHAUST OR VENTILATION SYSTEM

APPLICATION FOR PERMIT TO CONSTRUCT OR CERTIFICATE TO OPERATE

COPIES
WHITE - ORIGINAL
GREEN - DIVISION OF AIR
WHITE - REGIONAL OFFICE
WHITE - FIELD REP
YELLOW - APPLICANT

SECTION A

1. NAME OF OWNER / FIRM: NYC Department of Correction
2. NUMBER AND STREET ADDRESS: 60 Hudson Street, Room 719
3. CITY - TOWN - VILLAGE: New York
4. STATE: NY
5. ZIP: 10013
6. OWNER CLASSIFICATION: A [ ] COMMERCIAL B [ ] INDUSTRIAL C [ ] UTILITY D [ ] FEDERAL E [ ] STATE F [ ] MUNICIPAL G [ ] EDUC. INST. H [ ] HOSPITAL I [ ] RESIDENTIAL J [X] OTHER
7. NAME & TITLE OF OWNER'S REPRESENTATIVE: Gregory McLaughlin, Warden/Support Services Division
8. TELEPHONE: 718-546-1429
9. NAME OF AUTHORIZED AGENT: AKRF, Inc.
10. TELEPHONE: 212-696-0670
11. NUMBER AND STREET ADDRESS: 440 Park Avenue South, 7th Floor
12. CITY - TOWN - VILLAGE: New York
13. STATE: NY
14. ZIP: 10016
15. NAME & TITLE OF AUTHORIZED AGENT PERSON APPLICATION: Ramon Li, P.E.
16. NYS OR AUTHORIZED AGENT LICENSE NO.: 060957
17. TELEPHONE: 646-388-9724
18. SIGNATURE OF AUTHORIZED AGENT WHEN APPLICANT IS CORPORATION: STATE OF NEW YORK, RAMON LI, No. 060957, LICENSED PROFESSIONAL ENGINEER
19. FACILITY NAME (IF DIFFERENT FROM OWNER / FIRM): NYC-DOC-Rikers Island
20. FACILITY LOCATION (NUMBER AND STREET ADDRESS): 17-25 Hazen Street
21. CITY - TOWN - VILLAGE: East Elmhurst, NY
22. ZIP: 11370
23. BUILDING NAME OR NUMBER: Cogen Building
24. FLOOR NAME OR NUMBER: 1
25. START UP DATE: 07 / 2012 (MO / YR)
26. DRAWING NUMBERS OF PLANS SUBMITTED: Figures 1, 2, and 3
27. PERMIT TO CONSTRUCT: A [X] NEW SOURCE B [ ] MODIFICATION
28. CERTIFICATE TO OPERATE: A [ ] NEW SOURCE B [ ] MODIFICATION C [ ] EXISTING SOURCE

SECTION B

29. EMISSION POINT ID	30. GROUND ELEVATION (FT.)	31. HEIGHT ABOVE STRUCTURES (FT.)	32. STACK HEIGHT (FT.)	33. INSIDE DIMENSIONS (IN.)	34. EXIT TEMP. (F)	35. EXIT VELOCITY (FT./SEC.)	36. EXIT FLOW RATE (ACFM)
U0026	15	57	100	66	930	89.3	127,317

37. SOURCE CODE	38. HRS / DAY	39. DAYS / YR	40. % OPERATION BY SEASON: Winter	Spring	Summer	Fall
	24	365	25	25	25	25

41. DESCRIBE PROCESS OR UNIT: Emission Point U0026 is the bypass stack, which exhausts the 7.5 MW simple cycle gas fired turbine from Train #1. Emissions from the main stack (Emission Point U0025) and the bypass stack would be proportional to the load through each stack. Emissions from U0026 reflect total emissions through the bypass stack at 100 percent load and at ISO conditions (ambient temp. of 59F).

SECTION D

42. EMISSION CONTROL EQUIPMENT ID	43. CONTROL TYPE	44. MANUFACTURER NAME AND MODEL NUMBER	45. DISPOSAL METHOD	46. DATE INSTALLED MONTH / YEAR	47. USEFUL LIFE
None				/	
				/	

SECTION E

CALCULATIONS

See attached emissions calculation sheet.

SECTION F

CONTAMINANT NAME	CAS NUMBER	INPUT OR PRODUCTION	UNIT	RAW RATING	EMISSIONS ACTUAL	UNIT	HOW DET.	PERMISSIBLE	% CONTROL EFFICIENCY	HOURLY EMISSIONS (LBS/HR) EMP	ACTUAL	ANNUAL EMISSIONS (LBS/YR) ACTUAL	TON	PERMISSIBLE
Total Particulates	NY75-00-0				1.64	01	4			1.64	1.64	14,372	0	
Sulfur Dioxide	7446_09_5				0.01	01	4			0.01	0.01	88	0	
Nitrogen Oxides	NY210_00_0				3.70	01	4			3.70	3.70	32,412	0	
Carbon Monoxide	630_08_0				4.70	01	4			4.70	4.70	41,172	0	
Volatile Organic Compounds	NY998-00-0				0.27	01	4			0.27	0.27	2,365	0	

SECTION G

SOLID FUEL TYPE	TONS / YR	% S	LIQUID FUEL TYPE	THOUSANDS OF GALLONS/YR	% S	GAS TYPE	THOUSANDS OF CF/YR	BTU/CF
						52	734,819	1030

APPLICABLE RULE	APPLICABLE RULE

Upon completion of construction sign the statements listed below and forward to the appropriate NYS representative

THE PROCESS, EXHAUST OR VENTILATION SYSTEM HAS BEEN CONSTRUCTED AND WILL BE OPERATED IN ACCORDANCE WITH STATED SPECIFICATIONS AND IN CONFORMANCE WITH ALL PROVISIONS OF EXISTING REGULATIONS

SIGNATURE OF AUTHORIZED REPRESENTATIVE OR AGENT | DATE

AGENCY USE ONLY

156. LOCATION CODE	157. FACILITY ID. NO.	158. U.T.M. (E)	159. U.T.M. (N)	160. SIC NUMBER	161. DATE APPL. RECEIVED	162. DATE APPL. REVIEWED	163. REVIEWED BY
					/ /	/ /	

PERMIT TO CONSTRUCT

164. DATE ISSUED	165. EXPIRATION DATE	166. SIGNATURE OF APPROVAL	167. FEE
/ /	/ /		

168.
1. DEVIATION FROM APPROVED APPLICATION SHALL VOID THIS PERMIT
2. THIS IS NOT A CERTIFICATE TO OPERATE
3. TESTS AND/OR ADDITIONAL EMISSION CONTROL EQUIPMENT MAY BE REQUIRED PRIOR TO THE ISSUANCE OF A CERTIFICATE TO OPERATE

CERTIFICATE TO OPERATE

169. DATE ISSUED	170. EXPIRATION DATE	171. SIGNATURE OF APPROVAL	172. FEE
/ /	/ /		

173.
1. [ ] INSPECTED BY _____ DATE _____
2. [ ] INSPECTION DISCLOSED DIFFERENCES AS BUILT VS. PERMIT. CHANGES INDICATED ON FORM
3. [ ] ISSUE CERTIFICATE TO OPERATE FOR SOURCE AS BUILT
4. [ ] APPLICATION FOR C.O. DENIED _____ DATE _____ INITIALED

174. SPECIAL CONDITIONS:
1. 2. 3. 4. 5. 6. 7. 8.

OP	LOCATION	FACILITY	EMISSION POINT

A ADD
C CHANGE
D DELETE

READ INSTRUCTIONS CONTAINED IN FORM 75-11-12 BEFORE ANSWERING ANY QUESTION

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

COPIES
WHITE - ORIGINAL
GREEN - DIVISION OF AIR
WHITE - REGIONAL OFFICE
WHITE - FIELD REP.
YELLOW - APPLICANT

PROCESS, EXHAUST OR VENTILATION SYSTEM

APPLICATION FOR PERMIT TO CONSTRUCT OR CERTIFICATE TO OPERATE

SECTION A

1. NAME OF OWNER / FIRM	NYC Department of Correction
2. NUMBER AND STREET ADDRESS	60 Hudson Street, Room 719
3. CITY - TOWN - VILLAGE	New York
4. STATE	NY
5. ZIP	10013
6. OWNER CLASSIFICATION	A. ☐ COMMERCIAL B. ☐ INDUSTRIAL C. ☐ UTILITY D. ☐ FEDERAL E. ☐ STATE F. ☐ MUNICIPAL G. ☐ EDUC INST H. ☐ HOSPITAL I. ☐ RESIDENTIAL J. ☒ OTHER
7. NAME & TITLE OF OWNERS REPRESENTATIVE	Gregory McLaughlin, Warden/Support Services Division
8. TELEPHONE	718-546-1429
9. NAME OF AUTHORIZED AGENT	AKRF, Inc.
10. TELEPHONE	212-696-0670
11. NUMBER AND STREET ADDRESS	440 Park Avenue South, 7th Floor
12. CITY - TOWN - VILLAGE	New York
13. STATE	NY
14. ZIP	10016
15. NAME OF P.E. OR ARCHITECT PREPARING APPLICATION	Ramon Li, P.E.
16. N.Y.S. P.E. OR ARCHITECT LICENSE NO.	071
17. TELEPHONE	646-388-9724
18. SIGNATURE OF OWNERS REPRESENTATIVE (AGENT) WHEN APPLYING FOR A CERTIFICATE TO OPERATE	
19. FACILITY NAME (IF DIFFERENT FROM OWNER / FIRM)	NYC-DOC-Rikers Island
20. FACILITY LOCATION (NUMBER AND STREET ADDRESS)	17-25 Hazen Street
21. CITY - TOWN - VILLAGE	East Elmhurst, NY
22. ZIP	11370
23. BUILDING NAME OR NUMBER	Cogen Building
24. FLOOR NAME OR NUMBER	1
25. START UP DATE	07 / 2012 (MO / YR)
26. DRAWING NUMBERS OF PLANS SUBMITTED	Figures 1, 2, and 3
27. PERMIT TO CONSTRUCT	A. ☒ NEW SOURCE B. ☐ MODIFICATION
28. CERTIFICATE TO OPERATE	A. ☐ NEW SOURCE B. ☐ MODIFICATION C. ☐ EXISTING SOURCE

STATE OF NEW YORK · RAMON LI · 071 · LICENSED PROFESSIONAL ENGINEER

SECTION B

29. EMISSION POINT ID	30. GROUND ELEVATION (FT.)	31. HEIGHT ABOVE STRUCTURES (FT.)	32. STACK HEIGHT (FT.)	33. INSIDE DIMENSIONS (IN.)	34. EXIT TEMP. (°F)	35. EXIT VELOCITY (FT./SEC.)	36. EXIT FLOW RATE (ACFM)	37. SOURCE CODE	38. HRS / DAY	39. DAYS / YR	40. % OPERATION BY SEASON: Winter	Spring	Summer	Fall
U0026	15	57	100	66	930	89.3	127,317		24	365	25	25	25	25

SECTION C

41. DESCRIBE PROCESS OR UNIT:

Emission Point U0026 is the bypass stack, which exhausts the 7.5 MW simple cycle gas fired turbine from Train #1. Emissions from the main stack (Emission Point U0025) and the bypass stack would be proportional to the load through each stack. Emissions from U0026 reflect total emissions through the bypass stack at 100 percent load and at ISO conditions (ambient temp. of 59F).

SECTION D

EMISSION CONTROL EQUIPMENT I.D.	CONTROL TYPE	MANUFACTURER'S NAME AND MODEL NUMBER	DISPOSAL METHOD	DATE INSTALLED MONTH / YEAR	USEFUL LIFE
42. None	43.	44.	45.	46. /	47.
48.	49.	50.	51.	52. /	53.

SECTION E

CALCULATIONS

See attached emissions calculation sheet.

SECTION F

CONTAMINANT NAME	CAS NUMBER	INPUT OR PRODUCTION	UNIT	EMIS. RATING	EMISSIONS ACTUAL	UNIT	HOW OFT.	PERMISSIBLE	% CONTROL EFFICIENCY	HOURLY EMISSIONS (LBS/HR) EMP	ACTUAL	ANNUAL EMISSIONS (LBS/YR) ACTUAL	10^	PERMISSIBLE
54. Total Particulates	55. NY75-00-0	56.	57.	58.	59. 1.64	60. 01	61. 4	62.	63.	64. 1.64	65. 1.64	66. 14,372	67. 0	68.
69. Sulfur Dioxide	70. 7446_09_5	71.	72.	73.	74. 0.01	75. 01	76. 4	77.	78.	79. 0.01	80. 0.01	81. 88	82. 0	83.
84. Nitrogen Oxides	85. NY210_00_0	86.	87.	88.	89. 3.70	90. 01	91. 4	92.	93.	94. 3.70	95. 3.70	96. 32,412	97. 0	98.
99. Carbon Monoxide	100. 630-08-0	101.	102.	103.	104. 4.70	105. 01	106. 4	107.	108.	109. 4.70	110. 4.70	111. 41,172	112. 0	113.
114. Volatile Organic Compounds	115. NY998-00-0	116.	117.	118.	119. 0.27	120. 01	121. 4	122.	123.	124. 0.27	125. 0.27	126. 2,365	127. 0	128.
129.	130. - -	131.	132.	133.	134.	135.	136.	137.	138.	139.	140.	141.	142.	143.

SECTION G

SOLID FUEL TYPE	TONS / YR	% S	LIQUID FUEL TYPE	THOUSANDS OF GALLONS/YR	% S	GAS TYPE	THOUSANDS OF CF/YR	BTU/CF
144.	145.	146.	147.	148.	149.	150. 52	151. 734,819	152. 1030

APPLICABLE RULE	APPLICABLE RULE
153.	154.

Upon completion of construction sign the statement listed below and forward to the appropriate field representative

THE PROCESS, EXHAUST OR VENTILATION SYSTEM HAS BEEN CONSTRUCTED AND WILL BE OPERATED IN ACCORDANCE WITH STATED SPECIFICATIONS AND IN CONFORMANCE WITH ALL PROVISIONS OF EXISTING REGULATIONS

155. SIGNATURE OF AUTHORIZED REPRESENTATIVE OR AGENT | DATE

AGENCY USE ONLY

156. LOCATION CODE	157. FACILITY ID. NO.	158. U.T.M. (E)	159. U.T.M. (N)	160. SIC NUMBER	161. DATE APPL. RECEIVED	162. DATE APPL. REVIEWED	163. REVIEWED BY:
					/ /	/ /	

PERMIT TO CONSTRUCT

164. DATE ISSUED	165. EXPIRATION DATE	166. SIGNATURE OF APPROVAL	167. FEE
/ /	/ /		

168.
1. DEVIATION FROM APPROVED APPLICATION SHALL VOID THIS PERMIT
2. THIS IS NOT A CERTIFICATE TO OPERATE
3. TESTS AND/OR ADDITIONAL EMISSION CONTROL EQUIPMENT MAY BE REQUIRED PRIOR TO THE ISSUANCE OF A CERTIFICATE TO OPERATE

CERTIFICATE TO OPERATE

169. DATE ISSUED	170. EXPIRATION DATE	171. SIGNATURE OF APPROVAL	172. FEE
/ /	/ /		

173.
1. ☐ INSPECTED BY _____ DATE _____
2. ☐ INSPECTION DISCLOSED DIFFERENCES AS BUILT VS. PERMIT, CHANGES INDICATED ON FORM
3. ☐ ISSUE CERTIFICATE TO OPERATE FOR SOURCE AS BUILT
4. ☐ APPLICATION FOR C.O. DENIED _____ DATE _____ INITIALED _____

174. SPECIAL CONDITIONS:

1. 2.
3. 4.
5. 6.
7. 8.

OP	LOCATION	FACILITY	EMISSION POINT

A ADD
C CHANGE
D DELETE

READ INSTRUCTIONS CONTAINED IN FORM 75-1-12 BEFORE ANSWERING ANY QUESTION

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

COPIES
WHITE - ORIGINAL
GREEN - DIVISION OF AIR
WHITE - REGIONAL OFFICE
WHITE - FIELD REP.
YELLOW - APPLICANT

PROCESS, EXHAUST OR VENTILATION SYSTEM

APPLICATION FOR PERMIT TO CONSTRUCT OR CERTIFICATE TO OPERATE

SECTION A

1. NAME OF OWNER / FIRM	NYC Department of Correction
2. NUMBER AND STREET ADDRESS	60 Hudson Street, Room 719
3. CITY - TOWN - VILLAGE	New York
4. STATE	NY
5. ZIP	10013
6. OWNER CLASSIFICATION	A. ☐ COMMERCIAL B. ☐ INDUSTRIAL C. ☐ UTILITY D. ☐ FEDERAL E. ☐ STATE F. ☐ MUNICIPAL G. ☐ EDUC INST H. ☐ HOSPITAL I. ☐ RESIDENTIAL J. ☒ OTHER
7. NAME & TITLE OF OWNERS REPRESENTATIVE	Gregory McLaughlin, Warden/Support Services Division
8. TELEPHONE	718-546-1429
9. NAME OF AUTHORIZED AGENT	AKRF, Inc.
10. TELEPHONE	212-696-0670
11. NUMBER AND STREET ADDRESS	440 Park Avenue South, 7th Floor
12. CITY - TOWN - VILLAGE	New York
13. STATE	NY
14. ZIP	10016
15. NAME OF PROFESSIONAL ARCHITECT PREPARING APPLICATION	Ramon Li, P.E.
16. N.Y.S. P.E. OR ARCHITECT LICENSE NO.	060853
17. TELEPHONE	646-388-9724
18. SIGNATURE OF OWNERS REPRESENTATIVE OR AGENT WHEN APPLYING FOR A PERMIT TO CONSTRUCT	
19. FACILITY NAME (IF DIFFERENT FROM OWNER / FIRM)	NYC-DOC-Rikers Island
20. FACILITY LOCATION (NUMBER AND STREET ADDRESS)	17-25 Hazen Street
21. CITY - TOWN - VILLAGE	East Elmhurst, NY
22. ZIP	11370
23. BUILDING NAME OR NUMBER	Cogen Building
24. FLOOR NAME OR NUMBER	1
25. START UP DATE (MO / YR)	07 / 2012
26. DRAWING NUMBERS OF PLANS SUBMITTED	Figures 1, 2, and 3
27. PERMIT TO CONSTRUCT	A. ☒ NEW SOURCE B. ☐ MODIFICATION
28. CERTIFICATE TO OPERATE	A. ☐ NEW SOURCE B. ☐ MODIFICATION C. ☐ EXISTING SOURCE

STATE OF NEW YORK · RAMON LI · No. 060853 · LICENSED PROFESSIONAL ENGINEER

SECTION B

29. EMISSION POINT ID	30. GROUND ELEVATION (FT.)	31. HEIGHT ABOVE STRUCTURES (FT.)	32. STACK HEIGHT (FT.)	33. INSIDE DIMENSIONS (IN.)	34. EXIT TEMP. (°F)	35. EXIT VELOCITY (FT./SEC.)	36. EXIT FLOW RATE (ACFM)	37. SOURCE CODE	38. HRS / DAY	39. DAYS / YR	40. % OPERATION BY SEASON Winter	Spring	Summer	Fall
U026	15	57	100	66	930	89.3	127,317		24	365	25	25	25	25

SECTION C

41. DESCRIBE PROCESS OR UNIT

Emission Point U0026 is the bypass stack, which exhausts the 7.5 MW simple cycle gas fired turbine from Train #1. Emissions from the main stack (Emission Point U0025) and the bypass stack would be proportional to the load through each stack. Emissions from U0026 reflect total emissions through the bypass stack at 100 percent load and at ISO conditions (ambient temp. of 59F).

SECTION D

EMISSION CONTROL EQUIPMENT I.D.	CONTROL TYPE	MANUFACTURER'S NAME AND MODEL NUMBER	DISPOSAL METHOD	DATE INSTALLED MONTH / YEAR	USEFUL LIFE
42. None	43.	44.	45.	46. /	47.
48.	49.	50.	51.	52. /	53.

SECTION E

CALCULATIONS

See attached emissions calculation sheet.

SECTION F

CONTAMINANT NAME	CAS NUMBER	INPUT OR PRODUCTION	UNIT	ENV. RATING	EMISSIONS ACTUAL	UNIT	HOW OFT.	PERMISSIBLE	% CONTROL EFFICIENCY	HOURLY EMISSIONS (LBS/HR) EMP	ACTUAL	ANNUAL EMISSIONS (LBS/YR) ACTUAL	10#	PERMISSIBLE
54. Total Particulates	55. NY75-00-0	56.	57.	58.	59. 1.64	60. 01	61. 4	62.	63.	64. 1.64	65. 1.64	66. 14,372	67. 0	68.
69. Sulfur Dioxide	70. 7446_09_5	71.	72.	73.	74. 0.01	75. 01	76. 4	77.	78.	79. 0.01	80. 0.01	81. 88	82. 0	83.
84. Nitrogen Oxides	85. NY210_00_0	86.	87.	88.	89. 3.70	90. 01	91. 4	92.	93.	94. 3.70	95. 3.70	96. 32,412	97. 0	98.
99. Carbon Monoxide	100. 630-08-0	101.	102.	103.	104. 4.70	105. 01	106. 4	107.	108.	109. 4.70	110. 4.70	111. 41,172	112. 0	113.
114. Volatile Organic Compounds	115. NY998-00-0	116.	117.	118.	119. 0.27	120. 01	121. 4	122.	123.	124. 0.27	125. 0.27	126. 2,365	127. 0	128.
129.	130. - -	131.	132.	133.	134.	135.	136.	137.	138.	139.	140.	141.	142.	143.

SECTION G

SOLID FUEL TYPE	TONS / YR	% S	LIQUID FUEL TYPE	THOUSANDS OF GALLONS/YR	% S	GAS TYPE	THOUSANDS OF CF/YR	BTU/CF	APPLICABLE RULE	APPLICABLE RULE
144.	145.	146.	147.	148.	149.	150. 52	151. 734,819	152. 1030	153.	154.

Upon completion of construction sign the statement listed below and forward to the appropriate field representative

THE PROCESS, EXHAUST OR VENTILATION SYSTEM HAS BEEN CONSTRUCTED AND WILL BE OPERATED IN ACCORDANCE WITH STATED SPECIFICATIONS AND IN CONFORMANCE WITH ALL PROVISIONS OF EXISTING REGULATIONS

155. SIGNATURE OF AUTHORIZED REPRESENTATIVE OR AGENT | DATE

AGENCY USE ONLY

156. LOCATION CODE	157. FACILITY ID. NO.	158. U.T.M. (E)	159. U.T.M. (N)	160. SIC NUMBER	161. DATE APPL. RECEIVED	162. DATE APPL. REVIEWED	163. REVIEWED BY:
					/ /	/ /	

PERMIT TO CONSTRUCT

164. DATE ISSUED	165. EXPIRATION DATE	166. SIGNATURE OF APPROVAL	167. FEE
/ /	/ /		

168.
1. DEVIATIONS FROM APPROVED APPLICATION SHALL VOID THIS PERMIT
2. THIS IS NOT A CERTIFICATE TO OPERATE
3. TESTS AND/OR ADDITIONAL EMISSION CONTROL EQUIPMENT MAY BE REQUIRED PRIOR TO THE ISSUANCE OF A CERTIFICATE TO OPERATE

CERTIFICATE TO OPERATE

169. DATE ISSUED	170. EXPIRATION DATE	171. SIGNATURE OF APPROVAL	172. FEE
/ /	/ /		

173.
1. ☐ INSPECTED BY _____ DATE _____
2. ☐ INSPECTION DISCLOSED DIFFERENCES AS BUILT VS. PERMIT. CHANGES INDICATED ON FORM
3. ☐ ISSUE CERTIFICATE TO OPERATE FOR SOURCE AS BUILT
4. ☐ APPLICATION FOR C.O. DENIED _____ DATE _____ INITIALED _____

174. SPECIAL CONDITIONS:

1. 2. 3. 4. 5. 6. 7. 8.

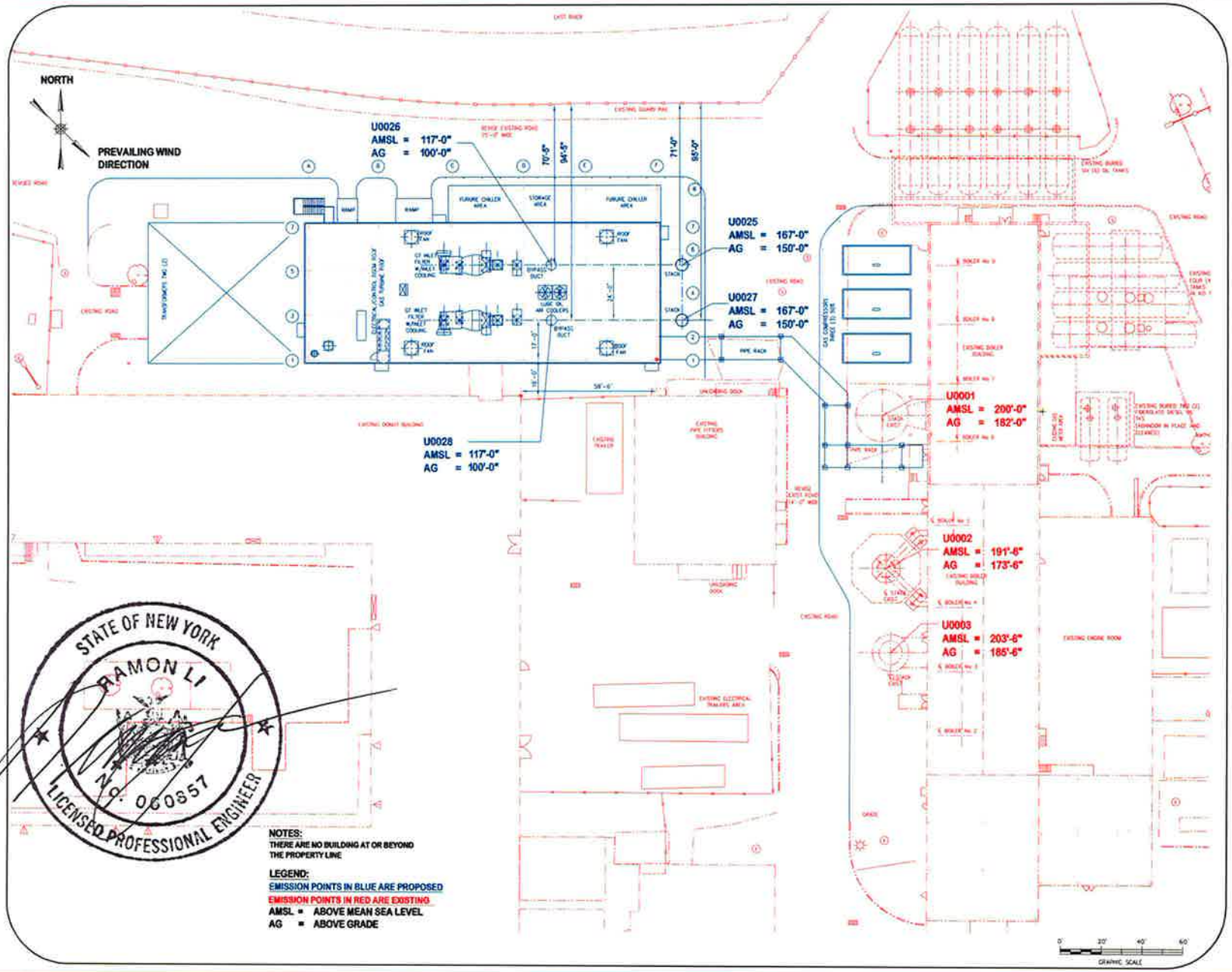
TABLE 1
NYC-DOC-Rikers Island
Cogeneration Emission Rates at ISO Conditions

Solar Taurus 70

Emissions (per unit)								
Case No.			1	2	3	4	5	6
Fuel			Natural Gas					
Ambient Temperature (°F)			0	59	100	59	59	59
Load			100%	100%	100%	100%	75%	50%
Heat Input (MMBtu/hr, LHV)			90.4	78.5	68.4	78.5	63.7	51.4
Heat Input (MMBtu/hr, HHV)			99.4	86.4	75.2	86.4	70.1	56.5
Gas Turbine Exhaust Flow (lb/hr)			231,894	211,172	186,338	211,172	173,691	135,748
Combustion Turbine Emissions	Lb/MMBtu, HHV	NOx	0.0430	0.0430	0.0430	0.0430	0.0430	0.0420
		CO	--	--	--	--	--	--
		VOC	--	--	--	--	--	--
		PM10/PM2.5	0.019	0.019	0.019	0.019	0.019	0.019
		SO2	--	--	--	--	--	--
	Lb/hr	NOx	4.30	3.70	3.20	3.70	3.00	2.40
		CO	5.40	4.70	4.00	4.70	3.80	3.10
		VOC	0.31	0.27	0.23	0.27	0.22	0.18
		PM10/PM2.5	1.89	1.64	1.43	1.64	1.33	1.07
		SO2	0.01	0.01	0.01	0.01	0.01	0.01
	lbs/yr	NOx	37,668	32,412	28,032	32,412	26,280	21,024
		CO	47,304	41,172	35,040	41,172	33,288	27,156
		VOC	2,716	2,365	2,015	2,365	1,927	1,577
		PM10/PM2.5	16,551	14,372	12,523	14,372	11,662	9,411
		SO2	88	88	88	88	88	88
Duct Burner			Y	Y	Y	N	N	N
Fuel			Natural Gas					
Load			100%	100%	100%	0%	0%	100%
Fuel Flow (lbs/hr)			1,570	1,670	1,719	0	0	0
Heat Input (MMBtu/hr, LHV)			32.4	34.4	35.4	0.0	0.0	0.0
Heat Input (MMBtu/hr, HHV)			35.9	38.2	39.3	0.0	0.0	0.0
Duct Burner Emissions	Lb/MMBtu, HHV	NOx	0.070	0.070	0.070	0.070	0.070	0.070
		CO	0.080	0.080	0.080	0.080	0.080	0.080
		VOC	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045
		PM10/PM2.5	0.010	0.010	0.010	0.010	0.010	0.010
		SO2	--	--	--	--	--	--
	Lb/hr	NOx	2.51	2.67	2.75	0.00	0.00	0.00
		CO	2.87	3.06	3.14	0.00	0.00	0.00
		VOC	0.16	0.17	0.18	0.00	0.00	0.00
		PM10/PM2.5	0.36	0.38	0.39	0.00	0.00	0.00
		SO2	0.49	0.39	0.39	0.00	0.00	0.00
	lbs/yr	NOx	22,014	23,424	24,099	0	0	0
		CO	25,159	26,771	27,541	0	0	0
		VOC	1,415	1,506	1,549	0	0	0
		PM10/PM2.5	3,145	3,346	3,443	0	0	0
		SO2	4,292	3,416	3,416	0	0	0
Stack Exhaust Temperature (°F)			275	292	275	292	311	305
Stack Exhaust Temperature (°K)			408.15	417.59	408.15	417.59	428.15	424.82
Stack Exhaust Flow (lbs/hr)			233,464	212,842	188,057	211,172	173,691	135,748
Stack Exhaust Flow (ACFM)			73,271	68,345	59,020	67,808	57,183	44,343
Stack Exhaust Diameter (feet)			5	5	5	5	5	5
Stack Exhaust Velocity (ft/s)			62.2	58.0	50.1	57.6	48.5	37.6
Stack Exhaust Velocity (m/s)			18.957	17.682	15.270	17.544	14.794	11.473
Stack Exhaust Emissions	Lb/hr	NOx	6.81	6.37	5.95	3.70	3.00	2.40
		CO	8.27	7.76	7.14	4.70	3.80	3.10
		VOC	0.47	0.44	0.41	0.27	0.22	0.18
		PM10/PM2.5	2.25	2.02	1.82	1.64	1.33	1.07
		SO2	0.50	0.40	0.40	0.40	0.20	0.20
	lbs/yr	NOx	59,682	55,836	52,131	32,412	26,280	21,024
		CO	72,463	67,943	62,581	41,172	33,288	27,156
		VOC	4,131	3,871	3,564	2,365	1,927	1,577
		PM10/PM2.5	19,696	17,718	15,966	14,372	11,662	9,411
		SO2	4,380	3,504	3,504	3,504	1,752	1,752

Notes:
(1) PM10/PM2.5, NOx, CO, SO2 and UHC emission factors based on vendor data. VOC is 10% of UHC emissions.

STATE OF NEW YORK
RAMON
No. 060857
LICENSED PROFESSIONAL ENGINEER



STATE OF NEW YORK
RAMON LI
No. 060857
LICENSED PROFESSIONAL ENGINEER

NOTES:
THERE ARE NO BUILDING AT OR BEYOND THE PROPERTY LINE

LEGEND:
EMISSION POINTS IN BLUE ARE PROPOSED
EMISSION POINTS IN RED ARE EXISTING
AMSL = ABOVE MEAN SEA LEVEL
AG = ABOVE GRADE

New York Power Authority

20 Exchange Place, New York NY 10005

NEW YORK CITY
DEPARTMENT OF CORRECTION

REVISIONS

NO	DATE	DESCRIPTION	BY	APPD
A	12-12-08	30% SUBMITTAL		
B	08-10-09	30% SUBMITTAL		

THESE PLANS ARE A SERVICE PROVIDED EXCLUSIVELY TO THE OWNER, AND ARE THE SOLE PROPERTY OF THE ENGINEER. ANY UNAUTHORIZED RE-USE OF THIS WORK WITHOUT THE ENGINEER'S WRITTEN PERMISSION WILL BE CONSIDERED AN INFRINGEMENT OF THE ENGINEER'S WORK.

"IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AS APPLICABLE. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION."

KEY PLAN

RIKERS ISLAND

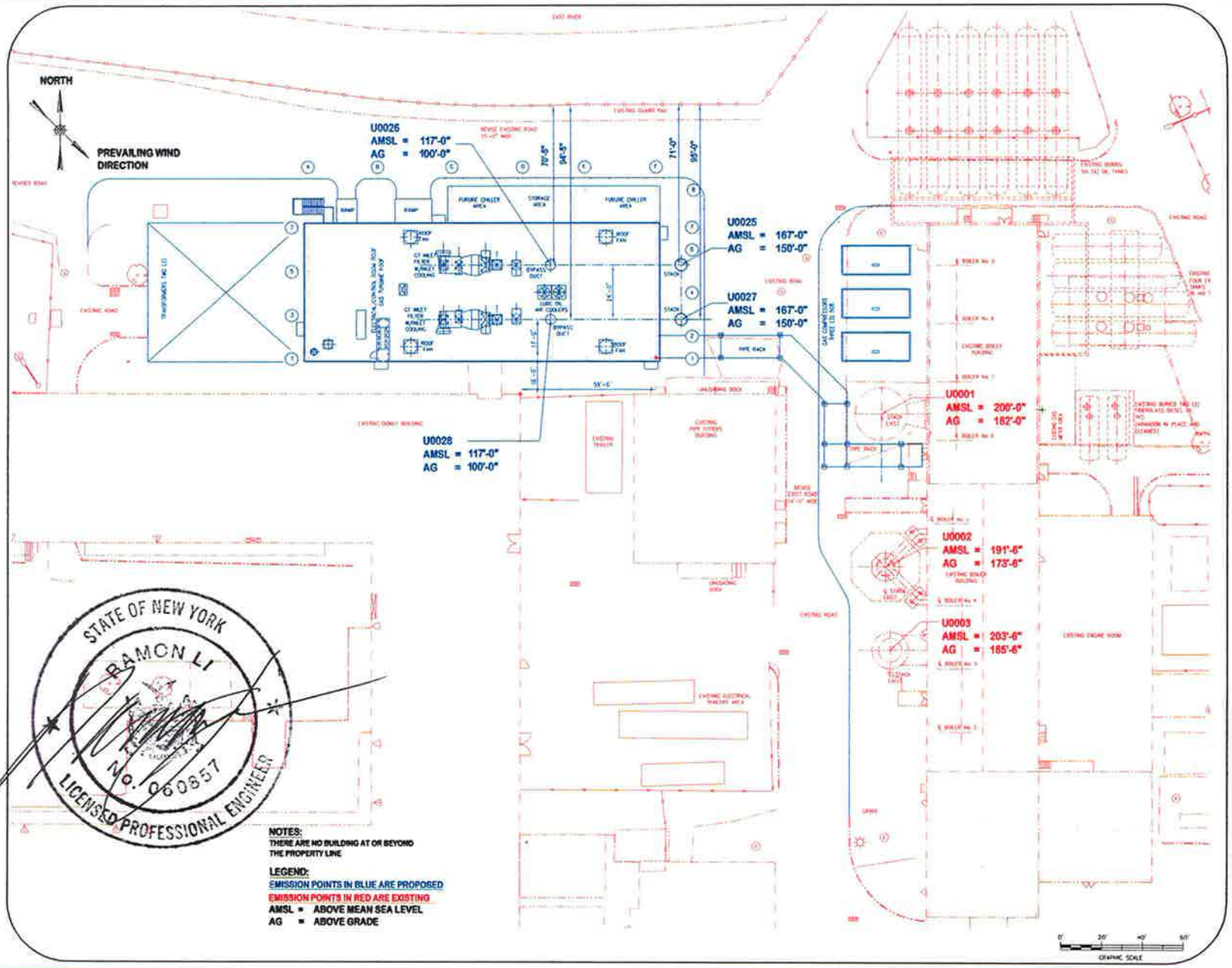
COGENERATION PLANT

MECHANICAL

ENLARGED PLOT PLAN
NORTH SIDE

A. LIEBMAN	1"=20'
	08-25-2009
JS ZAFFOS	
P. VALLOURIS	60020717

FIGURE 1



New York Power Authority

NEW YORK CITY DEPARTMENT OF CORRECTION

KEY PLAN

RIKERS ISLAND

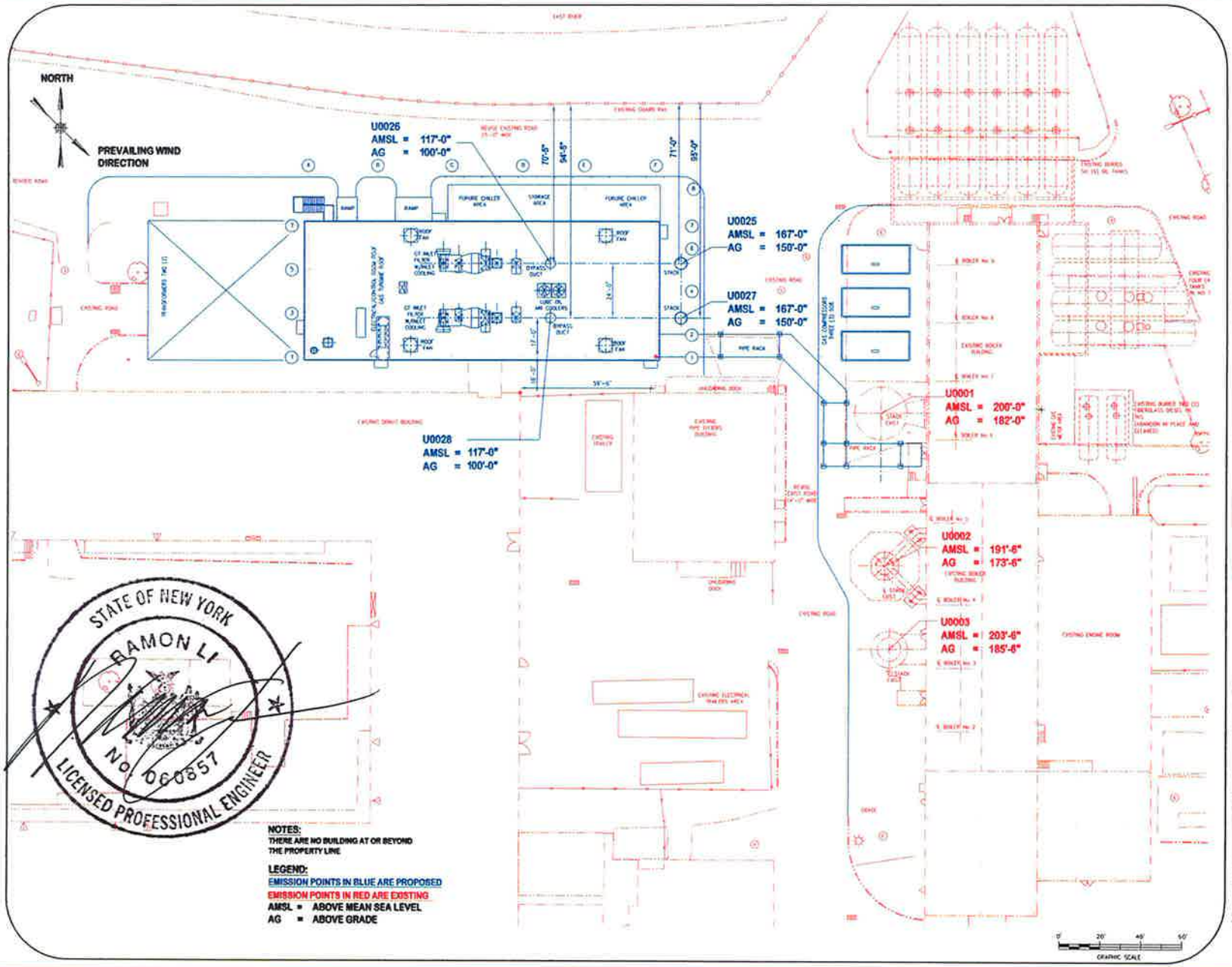
COGENERATION PLANT

MECHANICAL

ENLARGED PLOT PLAN NORTH SIDE

60020717

FIGURE 1



New York Power Authority

NEW YORK CITY
DEPARTMENT OF CORRECTION

KEY PLAN

RIKERS ISLAND

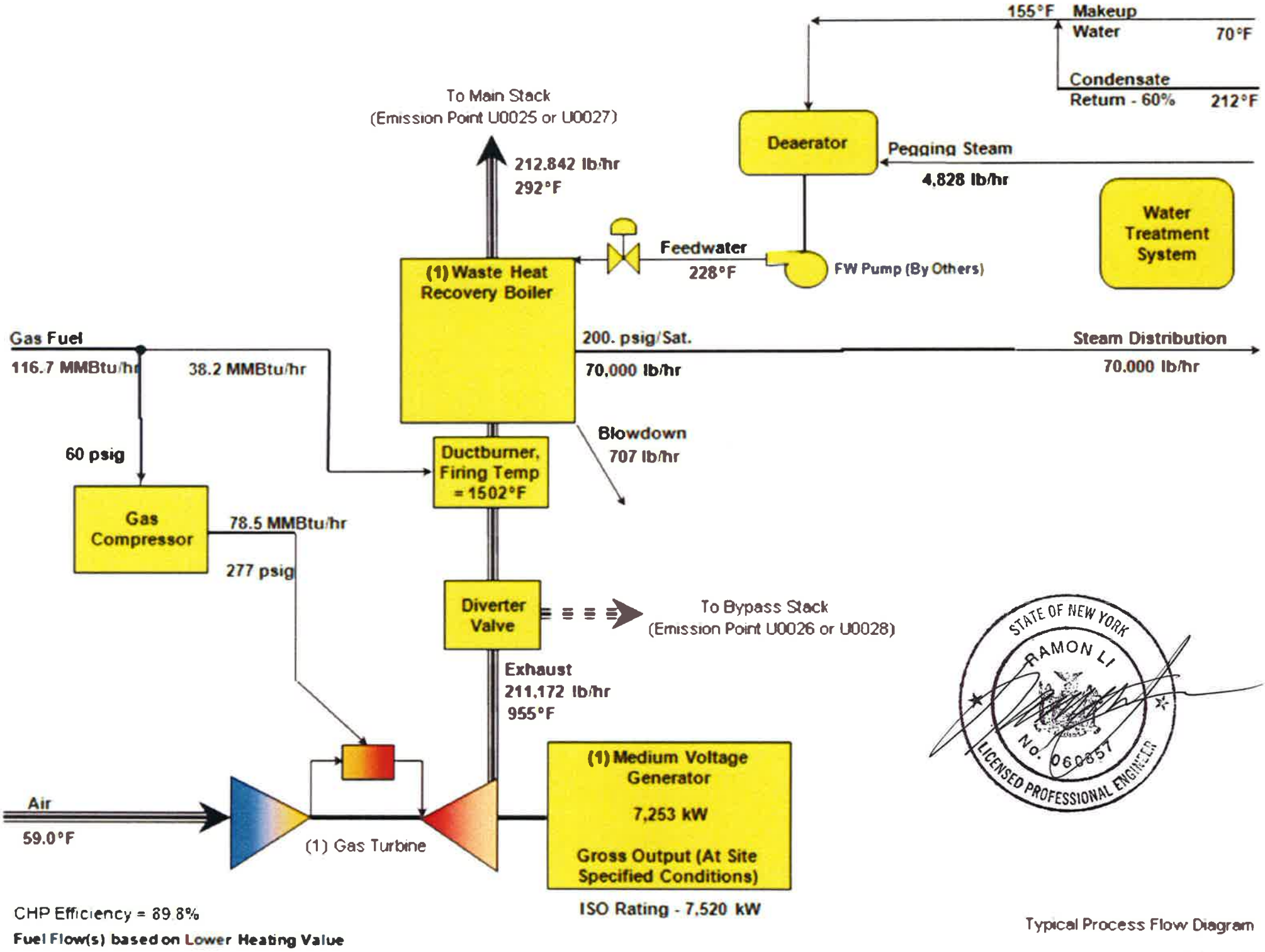
COGENERATION PLANT

MECHANICAL

ENLARGED PLOT PLAN
NORTH SIDE

60020717

FIGURE 1

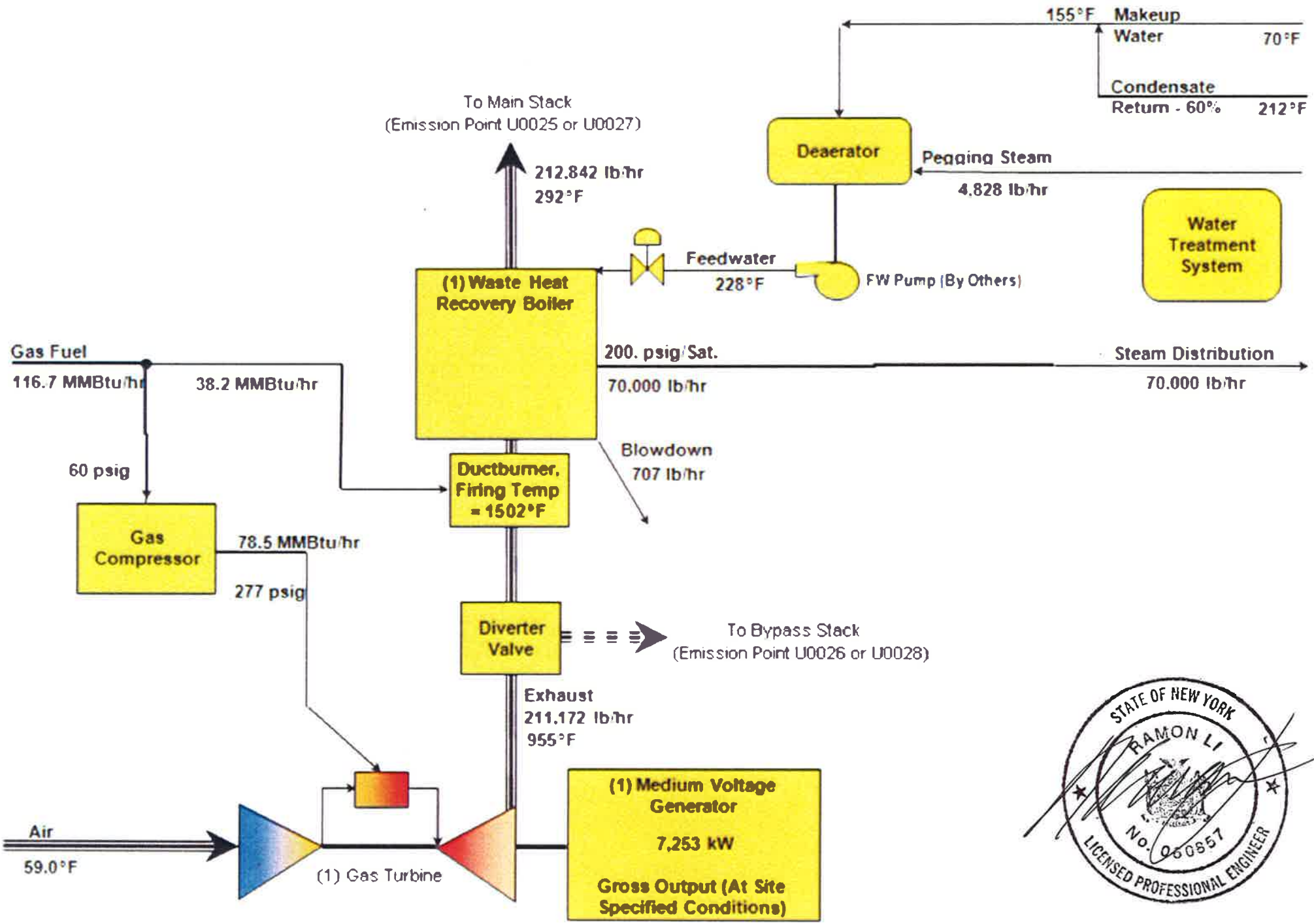


CHP Efficiency = 89.8%

Fuel Flow(s) based on Lower Heating Value

Typical Process Flow Diagram

Figure 2



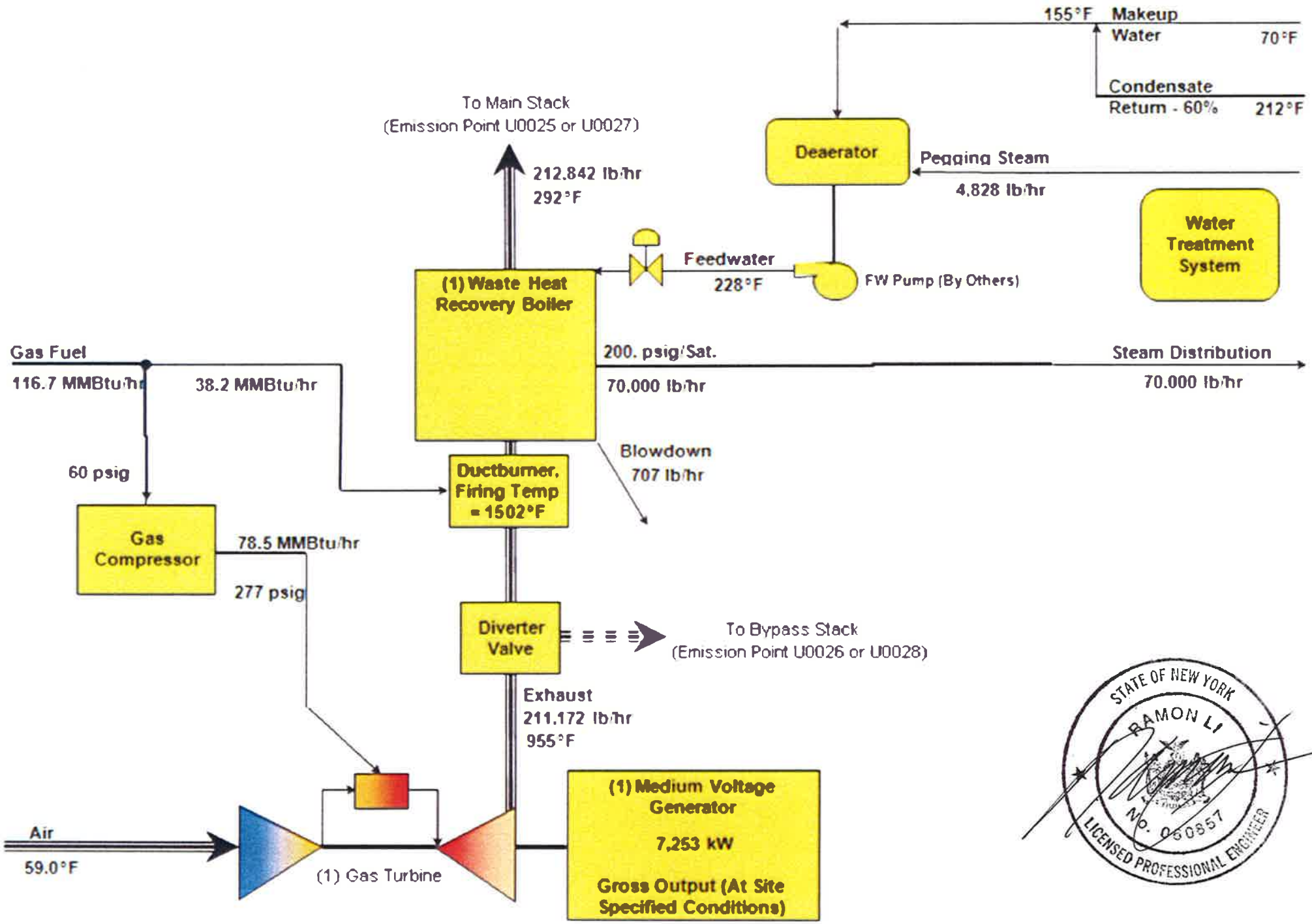
CHP Efficiency = 69.8%

Fuel Flow(s) based on Lower Heating Value

STATE OF NEW YORK
RAMON LI
No. 060857
LICENSED PROFESSIONAL ENGINEER

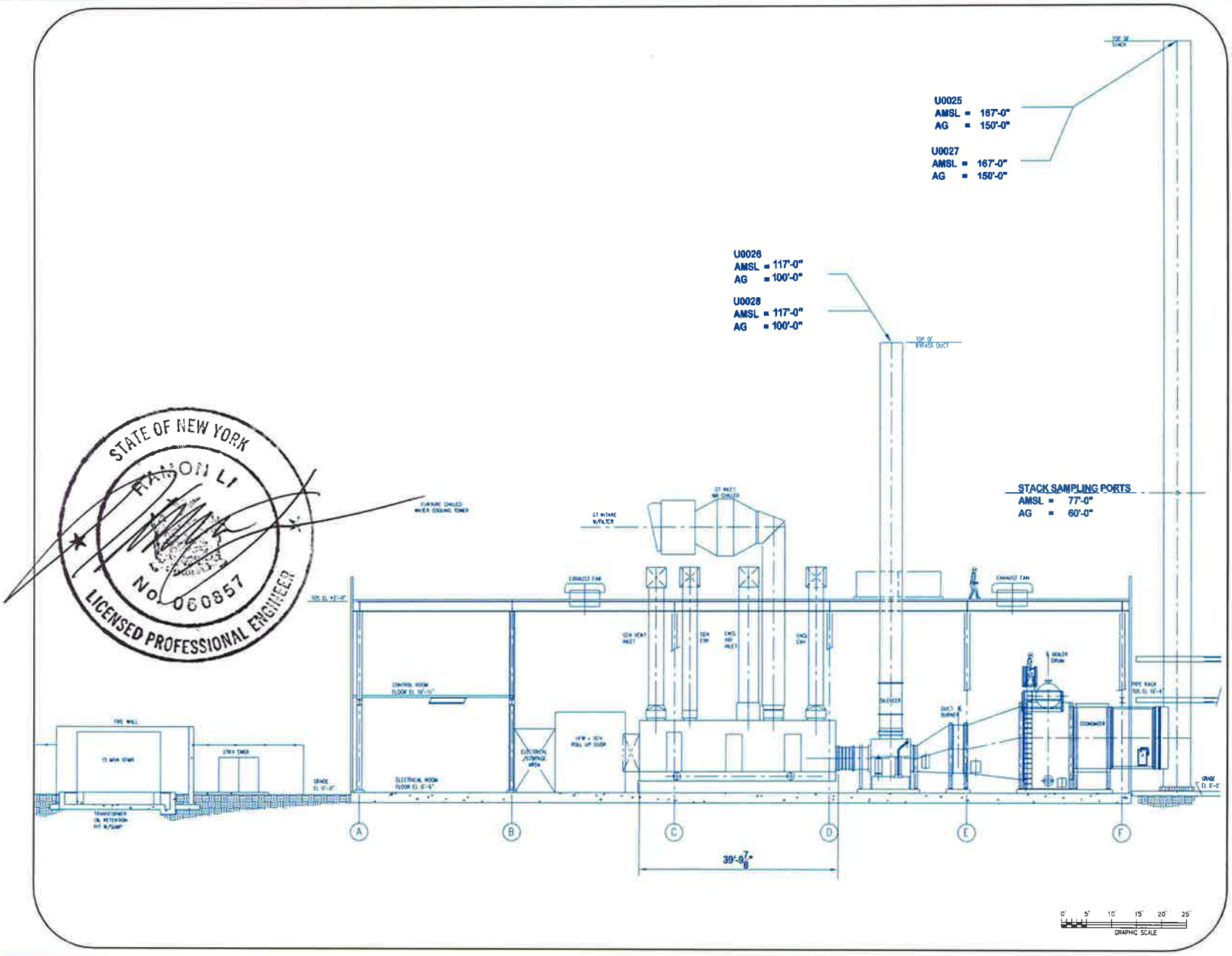
Typical Process Flow Diagram

Figure 2



Typical Process Flow Diagram

Figure 2



STATE OF NEW YORK
RAMON LI
No. 060857
LICENSED PROFESSIONAL ENGINEER

New York Power Authority

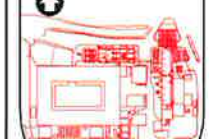
NEW YORK CITY
DEPARTMENT OF CORRECTION

REVISIONS

NO.	DATE	DESCRIPTION	BY	APPD
A	[illegible]	30% SUBMITTAL		
B	[illegible]	30% SUBMITTAL		

THESE PLANS ARE A SERVICE PROVIDED EXCLUSIVELY TO THE OWNER, AND ARE THE SOLE PROPERTY OF THE ENGINEER. ANY UNAUTHORIZED RE-USE OF THIS WORK WITHOUT THE ENGINEER'S WRITTEN PERMISSION WILL BE CONSIDERED AN INFRINGEMENT OF THE ENGINEERS WORK.

"IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AS APPLICABLE. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION."



KEY PLAN

RIKERS ISLAND

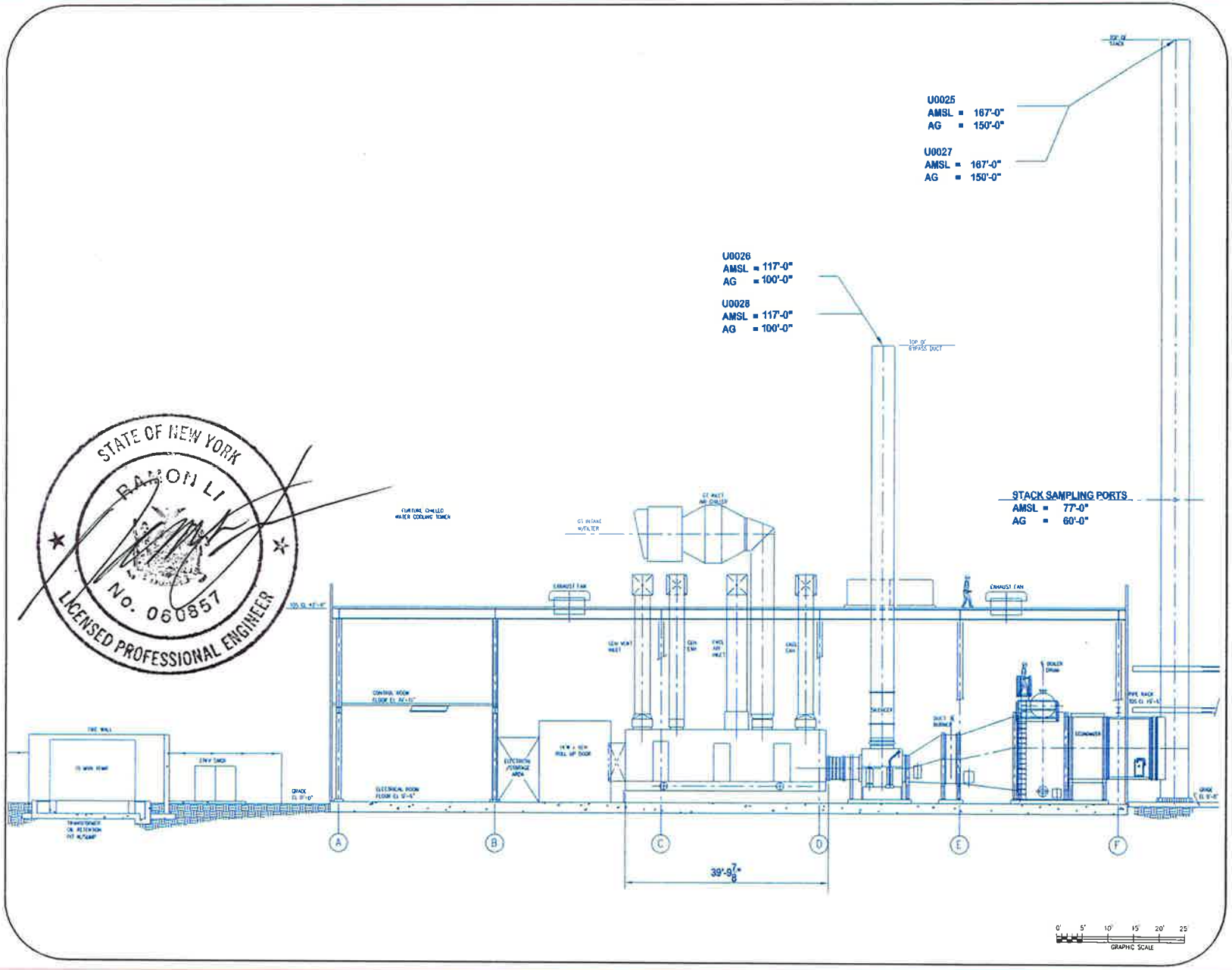
COGENERATION PLANT

MECHANICAL

GENERAL ARRANGEMENT
GAS TURBINE BUILDING
ELEVATION

A. LIBERMAN	1/8"=1'-0"
	05-23-2008
JS ZAFFOS	60020717
P. KALLOURIS	

FIGURE 3



New York Power Authority

NEW YORK CITY
DEPARTMENT OF CORRECTION

KEY PLAN

RIKERS ISLAND

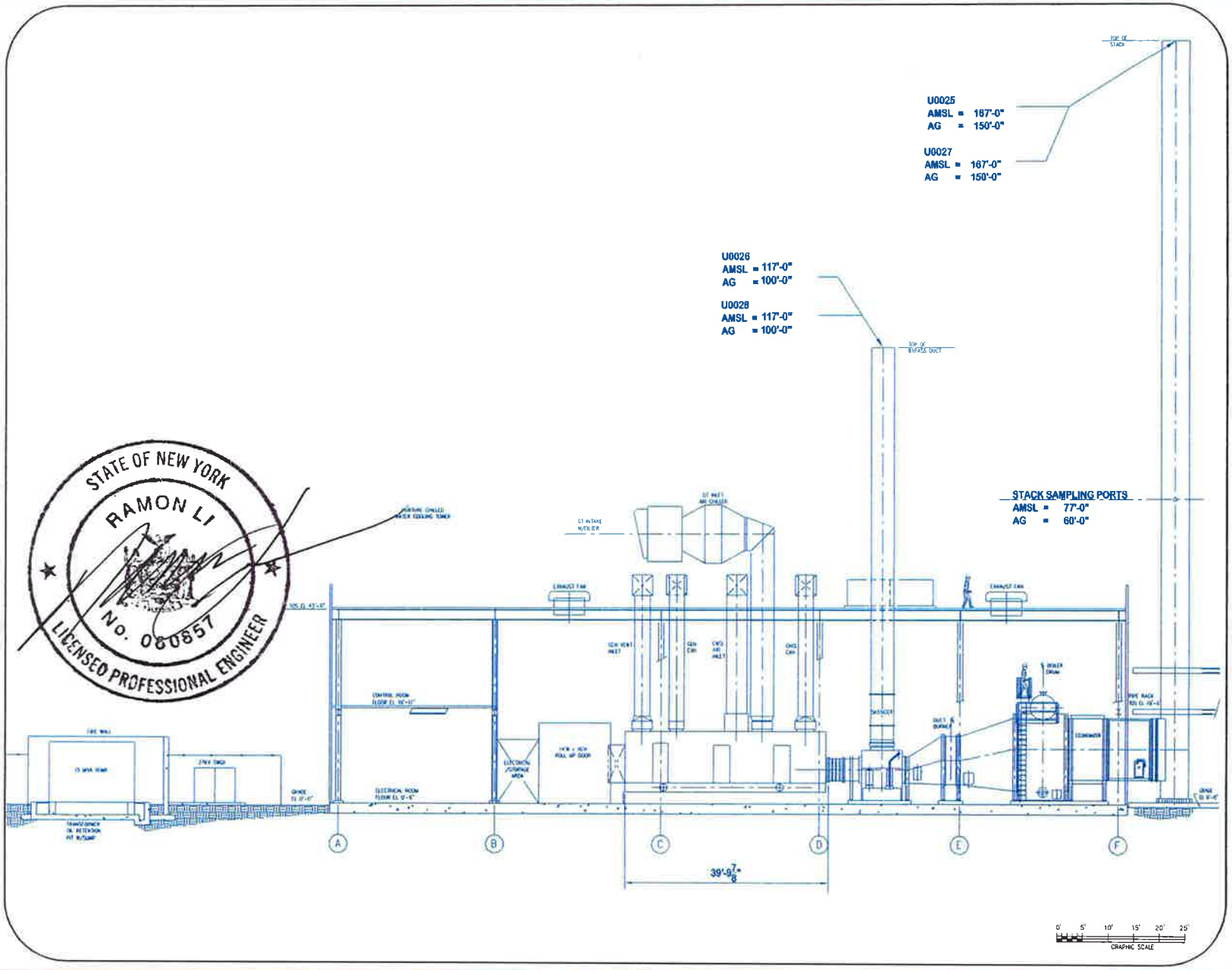
COGENERATION PLANT

MECHANICAL

GENERAL ARRANGEMENT
GAS TURBINE BUILDING
ELEVATION

A. LIBERMAN
09-25-2009
J. ZAFFOS
P. YALLOUNIS
60020717

FIGURE 3



New York Power Authority

NEW YORK CITY
DEPARTMENT OF CORRECTION

REVISIONS

NO	DATE	DESCRIPTION	BY	APPD
A	11-12-09	30% SUBMITTAL		
B	06-30-10	100% SUBMITTAL		

THESE PLANS ARE & SERVICE PROVIDED EXCLUSIVELY TO THE OWNER, AND ARE THE SOLE PROPERTY OF THE ENGINEER. ANY UNAUTHORIZED RE-USE OF THIS WORK WITHOUT THE ENGINEER'S WRITTEN PERMISSION WILL BE CONSIDERED AN INFRINGEMENT OF THE ENGINEER'S WORK.

"IT IS A VIOLATION OF THE PROFESSIONAL ENGINEER LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY. UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AT APPLICABLE. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE MESSAGE "ALTERED BY" FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION."

KEY PLAN

RIKERS ISLAND

COGENERATION PLANT

MECHANICAL

GENERAL ARRANGEMENT
GAS TURBINE BUILDING
ELEVATION

DRAWN BY A. LIMENAS	SCALE 1/8"=1'-0"
DATE 09-25-2009	
DESIGNED BY J.S. ZAFFOS	
CHECKED BY P. TALLIANES	PROJECT NO. 60020717

FIGURE 3

New York City Department of Environmental Protection

PC Rev 02/09

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Bureau of Environmental Compliance
59-17 Junction Boulevard, 9th Floor, Flushing, New York 11373-5108
Records Control (718) 595-3855

Date: September 16, 2010

Installation #: PB008210X

Reference: Rikers Island, 17-25 Hazen Street East Elmhurst NY 11370 Queens

Premise's Address *City* *State* *Zip* *Borough*

PROFESSIONAL CERTIFICATION

Being duly mindful of my responsibilities as a licensed Professional Engineer / Registered Architect in the State of New York and acting as designated agent for the applicant, I hereby certify that the application, plans, and all supplementary documents submitted in connection with this filing are complete and fully comply with all applicable laws, codes, rules, regulations, and directives of the Department of Environmental Protection, Bureau of Environmental Compliance of the City of New York in effect at the time filed.

STATE OF NEW YORK
RAMON LI
No. 060857
LICENSED PROFESSIONAL ENGINEER

N.Y.S. P.E. or R. A. Seal:

N.Y.S. P.E. or R. A. Signature:

N.Y.S. P.E. or R. A. Name: Ramon Li, P.E.

N.Y.S. P.E. or R. A. License Number: 060857

INSTRUCTIONS: Pursuant to Engineering Directive Number 1-78, this certification must be submitted in triplicate with all APC 5-0, APC 5-R, and APC 5-PA applications and does not preclude the necessity to sign and seal the certification now contained on the application forms.

New York City Department of Environmental Protection

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Environmental Compliance
59-17 Junction Boulevard, 9th Floor, Flushing, New York 11373-5107
Records Control (718) 595-3855

INDUSTRIAL PROCESSES DIVISION ENVIRONMENTAL RATING REPORT SUMMARY OF POINTS OF EMISSION (FORM APC 3PA)

EN NUMBER: PB008210X

PREMISE IDENTIFICATION NUMBER:

1. COMPANY NAME: NYC Department of Correction

2. PREMISE ADDRESS: NYC-DOC-Rikers Island, 17-25 Hazen St., East Elmhurst, NY ZIP CODE: 11370

3. MAILING ADDRESS: 17-25 Hazen Street, East Elmhurst, NY ZIP CODE: 11370

TELEPHONE NUMBER: 718-546-1488

4. NAME OF PERSON PREPARING REPORT: Ramon Li, P.E.

5. ADDRESS: AKRF, Inc. 440 Park Avenue South, 7th Floor, New York, NY ZIP CODE: 10016

6. TELEPHONE NUMBER: 616-388-9724

7. SEC.	LOT	BLOCK
4	40	2605

8. EMISSION POINT NUMBER	9. OPERATION PRODUCING EMISSION	10. ENVIRONMENTAL RATING PROPOSED	ASSIGNED BY BEC
U0027	Natural gas fired turbine #2 with duct firing HRSG (main stack)	D	
U0028	Bypass stack for turbine #2	D	

THIS REPORT IS: ☐ NEW ☑ REVISION ☐ ADDENDUM

STATE OF NEW YORK RAMON LI No. 060357 LICENSED PROFESSIONAL ENGINEER

11. SIGNATURE: TITLE: Technical Director DATE: September 16, 2010

New York City Department of Environmental Protection

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Environmental Compliance
59-17 Junction Boulevard, 9th Floor, Flushing, New York 11373-5107
Records Control (718) 595-3855

INDUSTRIAL PROCESSES DIVISION ENVIRONMENTAL RATING REPORT SUMMARY OF POINTS OF EMISSION (FORM APC 3PA)

EN NUMBER: PB008210X

PREMISE IDENTIFICATION NUMBER:

1. COMPANY NAME: NYC Department of Correction

2. PREMISE ADDRESS: NYC-DOC-Rikers Island, 17-25 Hazen St., East Elmhurst, NY ZIP CODE: 11370

3. MAILING ADDRESS: 17-25 Hazen Street, East Elmhurst, NY ZIP CODE: 11370

TELEPHONE NUMBER: 718-546-1488

4. NAME OF PERSON PREPARING REPORT: Ramon Li, P.E.

5. ADDRESS: AKRF, Inc. 440 Park Avenue South, 7th Floor, New York, NY ZIP CODE: 10016

6. TELEPHONE NUMBER: 616-388-9724

7. SEC.	LOT	BLOCK
4	40	2605

8. EMISSION POINT NUMBER	9. OPERATION PRODUCING EMISSION	10. ENVIRONMENTAL RATING PROPOSED	ASSIGNED BY BEC
U0027	Natural gas fired turbine #2 with duct firing HRSG (main stack)	D	
U0028	Bypass stack for turbine #2	D	

THIS REPORT IS: ☐ NEW ☑ REVISION ☐ ADDENDUM

STATE OF NEW YORK
RAMON LI
No. 060857
LICENSED PROFESSIONAL ENGINEER

11. SIGNATURE: TITLE: Technical Director DATE: September 26 2010

New York City Department of Environmental Protection

THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Environmental Compliance
59-17 Junction Boulevard, 9th Floor, Flushing, New York 11373-5107
Records Control (718) 595-3855

INDUSTRIAL PROCESSES DIVISION ENVIRONMENTAL RATING REPORT SUMMARY OF POINTS OF EMISSION (FORM APC 3PA)

EN NUMBER: PB008210X

PREMISE IDENTIFICATION NUMBER:

1. COMPANY NAME: NYC Department of Correction

2. PREMISE ADDRESS: NYC-DOC-Rikers Island, 17-25 Hazen St., East Elmhurst, NY ZIP CODE: 11370

3. MAILING ADDRESS: 17-25 Hazen Street, East Elmhurst, NY ZIP CODE: 11370

TELEPHONE NUMBER: 718-546-1488

4. NAME OF PERSON PREPARING REPORT: Ramon Li, P.E.

5. ADDRESS: AKRF, Inc. 440 Park Avenue South, 7th Floor, New York, NY ZIP CODE: 10016

6. TELEPHONE NUMBER: 616-388-9724

7. SEC.	LOT	BLOCK
4	40	2605

8. EMISSION POINT NUMBER	9. OPERATION PRODUCING EMISSION	10. ENVIRONMENTAL RATING PROPOSED	ASSIGNED BY BEC
U0027	Natural gas fired turbine #2 with duct firing HRSG (main stack)	D	
U0028	Bypass stack for turbine #2	D	

THIS REPORT IS: ☐ NEW ☑ REVISION ☐ ADDENDUM

STATE OF NEW YORK RAMON LI No. 060857 LICENSED PROFESSIONAL ENGINEER

11. SIGNATURE: TITLE: Technical Director DATE: September 16, 2010

OP | LOCATION | FACILITY | EMISSION POINT

A ADD
C CHANGE
D DELETE

READ INSTRUCTIONS CONTAINED IN FORM 74-1142 BEFORE ANSWERING ANY QUESTION

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

COPIES
WHITE - ORIGINAL
GREEN - DIVISION OF AIR
WHITE - REGIONAL OFFICE
WHITE - FIELD REP
YELLOW - APPLICANT

PROCESS, EXHAUST OR VENTILATION SYSTEM

APPLICATION FOR PERMIT TO CONSTRUCT OR CERTIFICATE TO OPERATE

SECTION A

1. NAME OF OWNER / FIRM	NYC Department of Correction
2. NUMBER AND STREET ADDRESS	60 Hudson Street, Room 719
3. CITY - TOWN - VILLAGE	New York
4. STATE	NY
5. ZIP	10013
6. NAME OF AUTHORIZED AGENT	AKRF, Inc.
10. TELEPHONE	212-696-0670
11. NUMBER AND STREET ADDRESS	440 Park Avenue South, 7th Floor
12. CITY - TOWN - VILLAGE	New York
13. STATE	NY
14. ZIP	10016
15. NAME OF ARCHITECT OR N.Y.S. PROFESSIONAL ENGINEER PREPARING APPLICATION	Ramon Li, P.E.
17. TELEPHONE	646-388-9724
19. FACILITY NAME (IF DIFFERENT FROM OWNER / FIRM)	NYC-DOC-Rikers Island
20. FACILITY LOCATION (NUMBER AND STREET ADDRESS)	17-25 Hazen Street
21. CITY - TOWN - VILLAGE	East Elmhurst, NY
22. ZIP	11370
23. BUILDING NAME OR NUMBER	Cogen Building
24. FLOOR NAME OR NUMBER	1
25. START UP DATE (MO / YR)	07 / 2012
26. DRAWING NUMBERS OF PLANS SUBMITTED	Figures 1, 2, and 3
7. NAME & TITLE OF OWNER'S REPRESENTATIVE	Gregory McLaughlin, Warden/Support Services Division
8. TELEPHONE	718-546-1429
16. SIGNATURE OF REPRESENTATIVE OR ARCHITECT OR ENGINEER APPLYING FOR PERMIT	
18. DATE	

9. OWNER CLASSIFICATION: A ☐ COMMERCIAL B ☐ INDUSTRIAL C ☐ UTILITY D ☐ FEDERAL E ☐ STATE F ☐ MUNICIPAL G ☐ FOUR. INST. H ☐ HOSPITAL I ☐ RESIDENTIAL J ☒ OTHER

27. PERMIT TO CONSTRUCT: A ☒ NEW SOURCE B ☐ MODIFICATION

28. CERTIFICATE TO OPERATE: A ☐ NEW SOURCE B ☐ MODIFICATION C ☐ EXISTING SOURCE

STATE OF NEW YORK — RAMON LI — No. 060856 — LICENSED PROFESSIONAL ENGINEER

SECTION B

29. EMISSION POINT ID	30. GROUND ELEVATION (FT.)	31. HEIGHT ABOVE STRUCTURES (FT.)	32. STACK HEIGHT (FT.)	33. INSIDE DIMENSIONS (IN.)	34. EXIT TEMP. (°F)	35. EXIT VELOCITY (FT./SEC.)	36. EXIT FLOW RATE (ACFM)	37. SOURCE CODE	38. HRS / DAY	39. DAYS / YR	40. % OPERATION BY SEASON: Winter	Spring	Summer	Fall
U0027	15	107	150	60	292	58.0	68,345		24	365	25	25	25	25

SECTION C

41. DESCRIBE PROCESS OR UNIT

This permit application is for a 7.5 MW simple cycle gas fired turbine with duct firing HRSG (Train #2). Emission Point U0027 is the main stack, which exhausts the turbine, duct burner and HRSG. Exhaust from the turbine could, however, go through a bypass stack (Emission Point U0028) when steam demand is low. Emissions between the two stacks would be proportional to the load through each stack. Emissions from U0027 reflect total emissions through the main stack at 100 percent load and at ISO conditions (ambient temp. of 59F).

SECTION D

EMISSION CONTROL EQUIPMENT ID	CONTROL TYPE	MANUFACTURER'S NAME AND MODEL NUMBER	DISPOSAL METHOD	DATE INSTALLED MONTH / YEAR	USEFUL LIFE
42. None	43.	44.	45.	46. /	47.
48.	49.	50.	51.	52. /	53.

SECTION E

CALCULATIONS

See attached emissions calculation sheet.

SECTION F

CONTAMINANT NAME	CAS NUMBER	INPUT OR PRODUCTION	UNIT	RAW RATING	EMISSIONS ACTUAL	UNIT	HOW DET.	PERMISSIBLE	% CONTROL EFF. C.V.	HOURLY EMISSIONS (LBS/HR) EMP	ACTUAL	ANNUAL EMISSIONS (LBS/YR) ACTUAL	TON	PERMISSIBLE
Total Particulates	NY75-00-0				2.02	01	4			2.02	2.02	17,718	0	
Sulfur Dioxide	7446_09_5				0.40	01	4			0.40	0.40	3,504	0	
Nitrogen Oxides	NY210_00_0				6.37	01	4			6.37	6.37	55,836	0	
Carbon Monoxide	630_08_0				7.76	01	4			7.76	7.76	67,943	0	
Volatile Organic Compounds	NY998-00-0				0.44	01	4			0.44	0.44	3,871	0	

SECTION G

SOLID FUEL TYPE	TONS / YR	% S	LIQUID FUEL TYPE	THOUSANDS OF GALLONS/YR	% S	GAS TYPE	THOUSANDS OF CF/YR	BTU/CF
						52	1,059,705	1030

APPLICABLE RULE	APPLICABLE RULE

Upon completion of construction sign the statement listed below and forward to the appropriate DEC representative.

THE PROCESS, EXHAUST OR VENTILATION SYSTEM HAS BEEN CONSTRUCTED AND WILL BE OPERATED IN ACCORDANCE WITH STATED SPECIFICATIONS AND IN CONFORMANCE WITH ALL PROVISIONS OF EXISTING REGULATIONS.

165. SIGNATURE OF AUTHORIZED REPRESENTATIVE OR AGENT | DATE

AGENCY USE ONLY

156. LOCATION CODE	157. FACILITY ID. NO.	158. U.T.M. (E)	159. U.T.M. (N)	160. SIC NUMBER	161. DATE APPL. RECEIVED	162. DATE APPL. REVIEWED	163. REVIEWED BY
					/ /	/ /	

PERMIT TO CONSTRUCT

164. DATE ISSUED	165. EXPIRATION DATE	166. SIGNATURE OF APPROVAL	167. FEE
/ /	/ /		

166.
1. DEVIATION FROM APPROVED APPLICATION SHALL VOID THIS PERMIT.
2. THIS IS NOT A CERTIFICATE TO OPERATE.
3. TESTS AND/OR ADDITIONAL EMISSION CONTROL EQUIPMENT MAY BE REQUIRED PRIOR TO THE ISSUANCE OF A CERTIFICATE TO OPERATE.

CERTIFICATE TO OPERATE

169. DATE ISSUED	170. EXPIRATION DATE	171. SIGNATURE OF APPROVAL	172. FEE
/ /	/ /		

173.
1. ☐ INSPECTED BY _____ DATE _____
2. ☐ INSPECTION DISCLOSED DIFFERENCES AS BUILT VS. PERMIT. CHANGES INDICATED ON FORM
3. ☐ ISSUE CERTIFICATE TO OPERATE FOR SOURCE AS BUILT
4. ☐ APPLICATION FOR C.O. DENIED _____ DATE _____ INITIALED

174. SPECIAL CONDITIONS:
1. 2.
3. 4.
5. 6.
7. 8.

OP | LOCATION | FACILITY | EMISSION POINT

A ADD
C CHANGE
D DELETE

READ INSTRUCTIONS CONTAINED IN FORM 75-11-12 BEFORE ANSWERING ANY QUESTION

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PROCESS, EXHAUST OR VENTILATION SYSTEM

APPLICATION FOR PERMIT TO CONSTRUCT OR CERTIFICATE TO OPERATE

COPIES
WHITE - ORIGINAL
GREEN - DIVISION OF AIR
WHITE - REGIONAL OFFICE
WHITE - FIELD REP.
YELLOW - APPLICANT

SECTION A

1. NAME OF OWNER / FIRM	NYC Department of Correction
2. NUMBER AND STREET ADDRESS	60 Hudson Street, Room 719
3. CITY - TOWN - VILLAGE	New York
4. STATE	NY
5. ZIP	10013
6. OWNER CLASSIFICATION	A. ☐ COMMERCIAL B. ☐ INDUSTRIAL C. ☐ UTILITY D. ☐ FEDERAL E. ☐ STATE F. ☐ MUNICIPAL G. ☐ EDUC. INST. H. ☐ HOSPITAL I. ☐ RESIDENTIAL J. ☒ OTHER
7. NAME & TITLE OF OWNER'S REPRESENTATIVE	Gregory McLaughlin, Warden/Support Services Division
8. TELEPHONE	718-546-1429
9. NAME OF AUTHORIZED AGENT	AKRF, Inc.
10. TELEPHONE	212-696-0670
11. NUMBER AND STREET ADDRESS	440 Park Avenue South, 7th Floor
12. CITY - TOWN - VILLAGE	New York
13. STATE	NY
14. ZIP	10016
15. NAME OF P.E. OR ARCHITECT PREPARING APPLICATION	Ramon Li, P.E.
16. N.Y.S. P.E. OR ARCHITECT LICENSE NO.	066647
17. TELEPHONE	646-388-9724
18. SIGNATURE OF OWNER'S REPRESENTATIVE OR AGENT WHEN APPLYING FOR A PERMIT TO CONSTRUCT	
19. FACILITY NAME (IF DIFFERENT FROM OWNER / FIRM)	NYC-DOC-Rikers Island
20. FACILITY LOCATION (NUMBER AND STREET ADDRESS)	17-25 Hazen Street
21. CITY - TOWN - VILLAGE	East Elmhurst, NY
22. ZIP	11370
23. BUILDING NAME OR NUMBER	Cogen Building
24. FLOOR NAME OR NUMBER	1
25. START UP DATE	07 (MO) / 2012 (YR)
26. DRAWING NUMBERS OF PLANS SUBMITTED	Figures 1, 2, and 3
27. PERMIT TO CONSTRUCT	A. ☒ NEW SOURCE B. ☐ MODIFICATION
28. CERTIFICATE TO OPERATE	A. ☐ NEW SOURCE B. ☐ MODIFICATION C. ☐ EXISTING SOURCE

STATE OF NEW YORK — RAMON LI — No. 066647 — LICENSED PROFESSIONAL ENGINEER

SECTION B

29. EMISSION POINT ID	30. GROUND ELEVATION (FT.)	31. HEIGHT ABOVE STRUCTURES (FT.)	32. STACK HEIGHT (FT.)	33. INSIDE DIMENSIONS (IN.)	34. EXIT TEMP. (°F)	35. EXIT VELOCITY (FT./SEC.)	36. EXIT FLOW RATE (ACFM)	37. SOURCE CLASS CODE	38. HRS / DAY	39. DAYS / YR	40. % OPERATION BY SEASON: Winter	Spring	Summer	Fall
U0027	15	107	150	60	292	58.0	68,345		24	365	25	25	25	25

SECTION C

41. DESCRIBE PROCESS OR UNIT

This permit application is for a 7.5 MW simple cycle gas fired turbine with duct firing HRSG (Train #2). Emission Point U0027 is the main stack, which exhausts the turbine, duct burner and HRSG. Exhaust from the turbine could, however, go through a bypass stack ~~(Emission Point U0028) when steam demand is low.~~ Emissions between the two stacks would be proportional to the load through each stack. Emissions from U0027 reflect total emissions through the main stack at 100 percent load and at ISO conditions (ambient temp. of 59F).

SECTION D

EMISSION CONTROL EQUIPMENT ID	CONTROL TYPE	MANUFACTURER & NAME AND MODEL NUMBER	DISPOSAL METHOD	DATE INSTALLED MONTH / YEAR	USEFUL LIFE
42. None	43.	44.	45.	46. /	47.
48.	49.	50.	51.	52. /	53.

SECTION E

CALCULATIONS

See attached emissions calculation sheet.

SECTION F

CONTAMINANT NAME	CAS NUMBER	INPUT OR PRODUCTION	UNIT	EMIS. RATING	EMISSIONS ACTUAL	UNIT	HOW OFT.	PERMISSIBLE	% CONTROL EFFICIENCY	HOURLY EMISSIONS (LBS/HR) EMP	ACTUAL	ANNUAL EMISSIONS (LBS/YR) ACTUAL	104	PERMISSIBLE
54. Total Particulates	55. NY75-00-0	56.	57.	58.	59. 2.02	60. 01	61. 4	62.	63.	64. 2.02	65. 2.02	66. 17,718	67. 0	68.
69. Sulfur Dioxide	70. 7446_09_5	71.	72.	73.	74. 0.40	75. 01	76. 4	77.	78.	79. 0.40	80. 0.40	81. 3,504	82. 0	83.
84. Nitrogen Oxides	85. NY210_00_0	86.	87.	88.	89. 6.37	90. 01	91. 4	92.	93.	94. 6.37	95. 6.37	96. 55,836	97. 0	98.
99. Carbon Monoxide	100. 630-08-0	101.	102.	103.	104. 7.76	105. 01	106. 4	107.	108.	109. 7.76	110. 7.76	111. 67,943	112. 0	113.
114. Volatile Organic Compounds	115. NY998-00-0	116.	117.	118.	119. 0.44	120. 01	121. 4	122.	123.	124. 0.44	125. 0.44	126. 3,871	127. 0	128.
129.	130. - -	131.	132.	133.	134.	135.	136.	137.	138.	139.	140.	141.	142.	143.

SECTION G

SOLID FUEL TYPE	TONS / YR	% S	LIQUID FUEL TYPE	THOUSANDS OF GALLONS/YR	% S	GAS TYPE	THOUSANDS OF CF/YR	BTU/CF	APPLICABLE RULE	APPLICABLE RULE
144.	145.	146.	147.	148.	149.	150. 52	151. 1,059,705	152. 1030	153.	154.

Upon completion of construction sign the statement listed below and forward to the appropriate DEC representative

THE PROCESS, EXHAUST OR VENTILATION SYSTEM HAS BEEN CONSTRUCTED AND WILL BE OPERATED IN ACCORDANCE WITH STATED SPECIFICATIONS AND IN CONFORMANCE WITH ALL PROVISIONS OF EXISTING REGULATIONS

155. SIGNATURE OF AUTHORIZED REPRESENTATIVE OR AGENT | DATE

AGENCY USE ONLY

156. LOCATION CODE	157. FACILITY ID. NO.	158. U.T.M. (E)	159. U.T.M. (N)	160. SIC NUMBER	161. DATE APPL. RECEIVED	162. DATE APPL. REVIEWED	163. REVIEWED BY:
					/ /	/ /	

PERMIT TO CONSTRUCT

164. DATE ISSUED	165. EXPIRATION DATE	166. SIGNATURE OF APPROVAL	167. FEE
/ /	/ /		

168.
1. DEVIATION FROM APPROVED APPLICATION SHALL VOID THIS PERMIT
2. THIS IS NOT A CERTIFICATE TO OPERATE
3. TESTS AND/OR ADDITIONAL EMISSION CONTROL EQUIPMENT MAY BE REQUIRED PRIOR TO THE ISSUANCE OF A CERTIFICATE TO OPERATE

CERTIFICATE TO OPERATE

169. DATE ISSUED	170. EXPIRATION DATE	171. SIGNATURE OF APPROVAL	172. FEE
/ /	/ /		

173.
1. ☐ INSPECTED BY _____ DATE _____
2. ☐ INSPECTION DISCLOSED DIFFERENCES AS BUILT VS. PERMIT. CHANGES INDICATED ON FORM
3. ☐ ISSUE CERTIFICATE TO OPERATE FOR SOURCE AS BUILT
4. ☐ APPLICATION FOR C.O. DENIED _____ DATE _____ INITIALED _____

174. SPECIAL CONDITIONS:

1. | 2.
3. | 4.
5. | 6.
7. | 8.

OP	LOCATION	FACILITY	EMISSION POINT

A ADD
C CHANGE
D DELETE

READ INSTRUCTIONS CONTAINED IN FORM 75-11-12 BEFORE ANSWERING ANY QUESTION

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PROCESS, EXHAUST OR VENTILATION SYSTEM

APPLICATION FOR PERMIT TO CONSTRUCT OR CERTIFICATE TO OPERATE

COPIES
WHITE - ORIGINAL
GREEN - DIVISION OF AIR
WHITE - REGIONAL OFFICE
WHITE - FIELD REP.
YELLOW - APPLICANT

SECTION A

1. NAME OF OWNER / FIRM: NYC Department of Correction
2. NUMBER AND STREET ADDRESS: 60 Hudson Street, Room 719
3. CITY - TOWN - VILLAGE: New York
4. STATE: NY
5. ZIP: 10013
6. TELEPHONE: 718-546-1429
7. NAME & TITLE OF OWNER'S REPRESENTATIVE: Gregory McLaughlin, Warden/Support Services Division
8. OWNER CLASSIFICATION: A. ☐ COMMERCIAL B. ☐ INDUSTRIAL C. ☐ UTILITY D. ☐ FEDERAL E. ☐ STATE F. ☐ MUNICIPAL G. ☐ EDUC INST H. ☐ HOSPITAL I. ☐ RESIDENTIAL J. ☒ OTHER
9. NAME OF AUTHORIZED AGENT: AKRF, Inc.
10. TELEPHONE: 212-696-0670
11. NUMBER AND STREET ADDRESS: 440 Park Avenue South, 7th Floor
12. CITY - TOWN - VILLAGE: New York
13. STATE: NY
14. ZIP: 10016
15. NAME OF ENGR. ARCHITECT PREPARING APPLICATION: Ramon Li, P.E.
16. N.Y.S. P.E. OR ARCHITECT LICENSE NO.: 060[illegible]
17. TELEPHONE: 646-388-9724
18. SIGNATURE OF OWNER, REPRESENTATIVE OR AGENT WHEN APPLYING FOR A PERMIT TO CONSTRUCT
19. FACILITY NAME (IF DIFFERENT FROM OWNER / FIRM): NYC-DOC-Rikers Island
20. FACILITY LOCATION (NUMBER AND STREET ADDRESS): 17-25 Hazen Street
21. CITY - TOWN - VILLAGE: East Elmhurst, NY
22. ZIP: 11370
23. BUILDING NAME OR NUMBER: Cogen Building
24. FLOOR NAME OR NUMBER: 1
25. START UP DATE: 07 (MO) / 2012 (YR)
26. DRAWING NUMBERS OF PLANS SUBMITTED: Figures 1, 2, and 3
27. PERMIT TO CONSTRUCT: A. ☒ NEW SOURCE B. ☐ MODIFICATION
28. CERTIFICATE TO OPERATE: A. ☐ NEW SOURCE B. ☐ MODIFICATION C. ☐ EXISTING SOURCE

SECTION B

29. EMISSION POINT ID	30. GROUND ELEVATION (FT.)	31. HEIGHT ABOVE STRUCTURES (FT.)	32. STACK HEIGHT (FT.)	33. INSIDE DIMENSIONS (IN.)	34. EXIT TEMP (°F)	35. EXIT VELOCITY (FT/SEC)	36. EXIT FLOW RATE (ACFM)	37. SOURCE CODE	38. HRS / DAY	39. DAYS / YR	40. % OPERATION BY SEASON Winter	Spring	Summer	Fall
U0027	15	107	150	60	292	58.0	68,345		24	365	25	25	25	25

SECTION C

41. DESCRIBE PROCESS OR UNIT:

This permit application is for a 7.5 MW simple cycle gas fired turbine with duct firing HRSG (Train #2). Emission Point U0027 is the main stack, which exhausts the turbine, duct burner and HRSG. Exhaust from the turbine could, however, go through a bypass stack ~~(Emission Point U0028) when steam demand is low.~~ Emissions between the two stacks would be proportional to the load through each stack. Emissions from U0027 reflect total emissions through the main stack at 100 percent load and at ISO conditions (ambient temp. of 59F).

SECTION D

EMISSION CONTROL EQUIPMENT I.D.	CONTROL TYPE	MANUFACTURER'S NAME AND MODEL NUMBER	DISPOSAL METHOD	DATE INSTALLED MONTH / YEAR	USEFUL LIFE
42. None	43.	44.	45.	46. /	47.
48.	49.	50.	51.	52. /	53.

SECTION E

CALCULATIONS

See attached emissions calculation sheet.

SECTION F

CONTAMINANT NAME	CAS NUMBER	INPUT OR PRODUCTION	UNIT	ENV. RATING	EMISSIONS ACTUAL	UNIT	HOW OFT	PERMISSIBLE	% CONTROL EFFICIENCY	HOURLY EMISSIONS (LBS/HR) ERP	ACTUAL	ANNUAL EMISSIONS (LBS/YR) ACTUAL	10⁴	PERMISSIBLE
54 Total Particulates	55. NY75-00-0	56.	57.	58.	59. 2.02	60. 01	61. 4	62.	63.	64. 2.02	65. 2.02	66. 17,718	67. 0	68.
69 Sulfur Dioxide	70. 7446_09_5	71.	72.	73.	74. 0.40	75. 01	76. 4	77.	78.	79. 0.40	80. 0.40	81. 3,504	82. 0	83.
84 Nitrogen Oxides	85. NY210_00_0	86.	87.	88.	89. 6.37	90. 01	91. 4	92.	93.	94. 6.37	95. 6.37	96. 55,836	97. 0	98.
99 Carbon Monoxide	100. 630-08-0	101.	102.	103.	104. 7.76	105. 01	106. 4	107.	108.	109. 7.76	110. 7.76	111. 67,943	112. 0	113.
114 Volatile Organic Compounds	115. NY998-00-0	116.	117.	118.	119. 0.44	120. 01	121. 4	122.	123.	124. 0.44	125. 0.44	126. 3,871	127. 0	128.
129.	130. - -	131.	132.	133.	134.	135.	136.	137.	138.	139.	140.	141.	142.	143.

SECTION G

SOLID FUEL TYPE	TONS / YR	% S	LIQUID FUEL TYPE	THOUSANDS OF GALLONS/YR	% S	GAS TYPE	THOUSANDS OF CF/YR	BTU/CF	APPLICABLE RULE	APPLICABLE RULE
144	145	146	147.	148.	149	150 52	151 1,059,705	152 1030	153.	154.

Upon completion of construction sign the statement listed below and forward to the appropriate D.E.C. representative

THE PROCESS, EXHAUST OR VENTILATION SYSTEM HAS BEEN CONSTRUCTED AND WILL BE OPERATED IN ACCORDANCE WITH STATED SPECIFICATIONS AND IN CONFORMANCE WITH ALL PROVISIONS OF EXISTING REGULATIONS

155. SIGNATURE OF AUTHORIZED REPRESENTATIVE OR AGENT | DATE

AGENCY USE ONLY

156. LOCATION CODE | 157. FACILITY ID. NO. | 158. U.T.M. (E) | 159. U.T.M. (N) | 160. SIC NUMBER | 161. DATE APPL. RECEIVED / / | 162. DATE APPL. REVIEWED / / | 163. REVIEWED BY:

PERMIT TO CONSTRUCT

164. DATE ISSUED / / | 165. EXPIRATION DATE / / | 166. SIGNATURE OF APPROVAL | 167. FEE

168.
1. DEVIATION FROM APPROVED APPLICATION SHALL VOID THIS PERMIT
2. THIS IS NOT A CERTIFICATE TO OPERATE
3. TESTS AND/OR ADDITIONAL EMISSION CONTROL EQUIPMENT MAY BE REQUIRED PRIOR TO THE ISSUANCE OF A CERTIFICATE TO OPERATE

CERTIFICATE TO OPERATE

169. DATE ISSUED / / | 170. EXPIRATION DATE / / | 171. SIGNATURE OF APPROVAL | 172. FEE

173.
1. ☒ INSPECTED BY _____ DATE _____
2. ☐ INSPECTION DISCLOSED DIFFERENCES AS BUILT VS. PERMIT, CHANGES INDICATED ON FORM
3. ☐ ISSUE CERTIFICATE TO OPERATE FOR SOURCE AS BUILT
4. ☐ APPLICATION FOR C.O. DENIED _____ DATE _____ INITIALED _____

174. SPECIAL CONDITIONS:

1. | 2.
3. | 4.
5. | 6.
7. | 8.

OP | LOCATION | FACILITY | EMISSION POINT

A ADD
C CHANGE
D DELETE

READ INSTRUCTIONS CONTAINED IN FORM 78-11-12 BEFORE ANSWERING ANY QUESTION

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

COPIES
WHITE - ORIGINAL
GREEN - DIVISION OF AIR
WHITE - REGIONAL OFFICE
WHITE - FIELD REP
YELLOW - APPLICANT

PROCESS, EXHAUST OR VENTILATION SYSTEM

APPLICATION FOR PERMIT TO CONSTRUCT OR CERTIFICATE TO OPERATE

SECTION A

1. NAME OF OWNER / FIRM: NYC Department of Correction
2. NUMBER AND STREET ADDRESS: 60 Hudson Street, Room 719
3. CITY - TOWN - VILLAGE: New York | 4. STATE: NY | 5. ZIP: 10013
6. OWNER CLASSIFICATION: A. COMMERCIAL B. INDUSTRIAL C. UTILITY D. FEDERAL E. STATE F. MUNICIPAL G. PUBLIC INST. H. HOSPITAL I. RESIDENTIAL J. [X] OTHER
7. NAME & TITLE OF OWNERS REPRESENTATIVE: Gregory McLaughlin, Warden/Support Services Division | 8. TELEPHONE: 718-546-1429
9. NAME OF AUTHORIZED AGENT: AKRF, Inc. | 10. TELEPHONE: 212-696-0670
11. NUMBER AND STREET ADDRESS: 440 Park Avenue South, 7th Floor
12. CITY - TOWN - VILLAGE: New York | 13. STATE: NY | 14. ZIP: 10016
15. NAME OF ARCHITECT OR ENGINEER PREPARING APPLICATION: Ramon Li, | 16. N.Y.S. FIRM OR ARCHITECT LICENSE NO. | 17. TELEPHONE: 646-388-9724
18. SIGNATURE OF OWNER OR AGENT APPLYING FOR A PERMIT: [signature]
19. FACILITY NAME (IF DIFFERENT FROM OWNER / FIRM): NYC-DOC-Rikers Island
20. FACILITY LOCATION (NUMBER AND STREET ADDRESS): 17-25 Hazen Street
21. CITY - TOWN - VILLAGE: East Elmhurst, NY | 22. ZIP: 11370
23. BUILDING NAME OR NUMBER: Cogen Building | 24. FLOOR NAME OR NUMBER: 1
25. START UP DATE: 07 (MO) / 2012 (YR) | 26. DRAWING NUMBERS OF PLANS SUBMITTED: Figures 1, 2, and 3
27. PERMIT TO CONSTRUCT: A. [X] NEW SOURCE B. [ ] MODIFICATION
28. CERTIFICATE TO OPERATE: A. [ ] NEW SOURCE B. [ ] MODIFICATION C. [ ] EXISTING SOURCE

STATE OF NEW YORK — RAMON LI — No. 060857 — LICENSED PROFESSIONAL ENGINEER

SECTION B

29. EMISSION POINT ID	30. GROUND ELEVATION (FT.)	31. HEIGHT ABOVE STRUCTURES (FT.)	32. STACK HEIGHT (FT.)	33. INSIDE DIMENSION (IN.)	34. EXIT TEMP. (°F)	35. EXIT VELOCITY (FT./SEC.)	36. EXIT FLOW RATE (ACFM)	37. SOURCE CODE	38. HRS / DAY	39. DAYS / YR	40. % OPERATION BY SEASON Winter	Spring	Summer	Fall
U0028	15	57	100	66	930	89.3	127,317		24	365	25	25	25	25

41. DESCRIBE PROCESS OR USE: Emission Point U0028 is the bypass stack, which exhausts the 7.5 MW simple cycle gas fired turbine from Train #2. Emissions from the main stack (Emission Point U0027) and the bypass stack would be proportional to the load through each stack. Emissions from U0028 reflect total emissions through the bypass stack at 100 percent load and at ISO conditions (ambient temp. of 59F).

SECTION C

42. CONTROL EQUIPMENT ID	43. CONTROL TYPE	44. MANUFACTURER NAME AND MODEL NUMBER	45. DISPOSAL METHOD	46. DATE INSTALLED MONTH / YEAR	47. USEFUL LIFE
None				/	
				/	

48. CALCULATIONS: See attached emissions calculation sheet.

SECTION F

CONTAMINANT NAME	CAS NUMBER	INPUT TO PRODUCTION	UNIT	RAW RATING	EMISSIONS ACTUAL	UNIT	HOW DET.	PERMISSIBLE	CONTROL EFFICIENCY	HOURLY EMISSIONS (LBS/HR) EMP	ACTUAL	ANNUAL EMISSIONS (LBS/YR) ACTUAL	TOT	PERMISSIBLE
Total Particulates	NY75-00-0				1.64	01	4			1.64	1.64	14,372	0	
Sulfur Dioxide	7446-09-5				0.01	01	4			0.01	0.01	88	0	
Nitrogen Oxides	NY210-00-0				3.70	01	4			3.70	3.70	32,412	0	
Carbon Monoxide	630-08-0				4.70	01	4			4.70	4.70	41,172	0	
Volatile Organic Compounds	NY998-00-0				0.27	01	4			0.27	0.27	2,365	0	

SECTION G

SOLID FUEL TYPE	TONS / YR	% S	LIQUID FUEL TYPE	THOUSANDS OF GALLONS/YR	% S	GAS TYPE	THOUSANDS OF CF/YR	BTU/CF
						52	734,819	1030

APPLICABLE RULE	APPLICABLE RULE

Upon completion of construction sign the statement listed below and forward to the appropriate DEC representative.

THE PROCESS, EXHAUST OR VENTILATION SYSTEM HAS BEEN CONSTRUCTED AND WILL BE OPERATED IN ACCORDANCE WITH STATED SPECIFICATIONS AND IN CONFORMANCE WITH ALL PROVISIONS OF EXISTING REGULATIONS

165. SIGNATURE OF AUTHORIZED REPRESENTATIVE OR AGENT | DATE

AGENCY USE ONLY

156. LOCATION CODE | 157. FACILITY ID. NO. | 158. U.T.M. (E) | 159. U.T.M. (N) | 160. SIC NUMBER | 161. DATE APPL. RECEIVED / / | 162. DATE APPL. REVIEWED / / | 163. REVIEWED BY

PERMIT TO CONSTRUCT

164. DATE ISSUED	165. EXPIRATION DATE	166. SIGNATURE OF APPROVAL	167. FEE
/ /	/ /		

168.
1. DEVIATION FROM APPROVED APPLICATION SHALL VOID THIS PERMIT
2. THIS IS NOT A CERTIFICATE TO OPERATE
3. TESTS AND/OR ADDITIONAL EMISSION CONTROL EQUIPMENT MAY BE REQUIRED PRIOR TO THE ISSUANCE OF A CERTIFICATE TO OPERATE

CERTIFICATE TO OPERATE

169. DATE ISSUED	170. EXPIRATION DATE	171. SIGNATURE OF APPROVAL	172. FEE
/ /	/ /		

173.
1. [ ] INSPECTED BY _____ DATE _____
2. [ ] INSPECTION DISCLOSED DIFFERENCES AS BUILT VS. PERMIT, CHANGES INDICATED ON FORM
3. [ ] ISSUE CERTIFICATE TO OPERATE FOR SOURCE AS BUILT
4. [ ] APPLICATION FOR C.O. DENIED _____ DATE _____ INITIALED

174. SPECIAL CONDITIONS:
1. | 2.
3. | 4.
5. | 6.
7. | 8.

OP	LOCATION	FACILITY	EMISSION POINT

A ADD
C CHANGE
D DELETE

READ INSTRUCTIONS CONTAINED IN FORM 75-11-12 BEFORE ANSWERING ANY QUESTION

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PROCESS, EXHAUST OR VENTILATION SYSTEM

APPLICATION FOR PERMIT TO CONSTRUCT OR CERTIFICATE TO OPERATE

COPIES
WHITE - ORIGINAL
GREEN - DIVISION OF AIR
WHITE - REGIONAL OFFICE
WHITE - FIELD REP.
YELLOW - APPLICANT

SECTION A

1. NAME OF OWNER / FIRM: NYC Department of Correction
2. NUMBER AND STREET ADDRESS: 60 Hudson Street, Room 719
3. CITY - TOWN - VILLAGE: New York
4. STATE: NY
5. ZIP: 10013
6. OWNER CLASSIFICATION: A. COMMERCIAL B. INDUSTRIAL C. UTILITY D. FEDERAL E. STATE F. MUNICIPAL G. EDUC. INST. H. HOSPITAL I. RESIDENTIAL J. [X] OTHER
7. NAME & TITLE OF OWNER'S REPRESENTATIVE: Gregory McLaughlin, Warden/Support Services Division
8. TELEPHONE: 718-546-1429
9. NAME OF AUTHORIZED AGENT: AKRF, Inc.
10. TELEPHONE: 212-696-0670
11. NUMBER AND STREET ADDRESS: 440 Park Avenue South, 7th Floor
12. CITY - TOWN - VILLAGE: New York
13. STATE: NY
14. ZIP: 10016
15. NAME OF P.E. OR ARCHITECT PREPARING APPLICATION: Ramon Li
16. N.Y.S. P.E. OR ARCHITECT LICENSE NO.: 060827
17. TELEPHONE: 646-388-9724
18. SIGNATURE OF OWNER'S REPRESENTATIVE OR AGENT WHEN APPLYING FOR A PERMIT
19. FACILITY NAME (IF DIFFERENT FROM OWNER / FIRM): NYC-DOC-Rikers Island
20. FACILITY LOCATION (NUMBER AND STREET ADDRESS): 17-25 Hazen Street
21. CITY - TOWN - VILLAGE: East Elmhurst, NY
22. ZIP: 11370
23. BUILDING NAME OR NUMBER: Cogen Building
24. FLOOR NAME OR NUMBER: 1
25. START UP DATE: 07 (MO) / 2012 (YR)
26. DRAWING NUMBERS OF PLANS SUBMITTED: Figures 1, 2, and 3
27. PERMIT TO CONSTRUCT: A. [X] NEW SOURCE B. [ ] MODIFICATION
28. CERTIFICATE TO OPERATE: A. [ ] NEW SOURCE B. [ ] MODIFICATION C. [ ] EXISTING SOURCE

STATE OF NEW YORK · RAMON LI · No. 060827 · LICENSED PROFESSIONAL ENGINEER

SECTION B

29. EMISSION POINT ID	30. GROUND ELEVATION (FT.)	31. HEIGHT ABOVE STRUCTURES (FT.)	32. STACK HEIGHT (FT.)	33. INSIDE DIMENSIONS (IN.)	34. EXIT TEMP. (°F)	35. EXIT VELOCITY (FT./SEC.)	36. EXIT FLOW RATE (ACFM)	37. SOURCE CLASS CODE	38. HRS / DAY	39. DAYS / YR	40. % OPERATION BY SEASON: Winter	Spring	Summer	Fall
U0028	15	57	100	66	930	89.3	127,317		24	365	25	25	25	25

SECTION C

41. DESCRIBE PROCESS OR UNIT:

Emission Point U0028 is the bypass stack, which exhausts the 7.5 MW simple cycle gas fired turbine from Train #2. Emissions from the main stack (Emission Point U0027) and the bypass stack would be proportional to the load through each stack. Emissions from U0028 reflect total emissions through the bypass stack at 100 percent load and at ISO conditions (ambient temp. of 59F).

SECTION D

42. EMISSION CONTROL EQUIPMENT I.D.	43. CONTROL TYPE	44. MANUFACTURER'S NAME AND MODEL NUMBER	45. DISPOSAL METHOD	46. DATE INSTALLED MONTH / YEAR	47. USEFUL LIFE
None				/	
				/	

SECTION E

CALCULATIONS

See attached emissions calculation sheet.

SECTION F

CONTAMINANT NAME	CAS NUMBER	INPUT OR PRODUCTION	UNIT	PERM. RATING	EMISSIONS ACTUAL	UNIT	HOURS OPER.	PERMISSIBLE	% CONTROL EFFICIENCY	HOURLY EMISSIONS (LBS/HR) ERP	ACTUAL	ANNUAL EMISSIONS (LBS/YR) ACTUAL	10%	PERMISSIBLE
Total Particulates	NY75-00-0				1.64	01	4			1.64	1.64	14,372	0	
Sulfur Dioxide	7446_09_5				0.01	01	4			0.01	0.01	88	0	
Nitrogen Oxides	NY210_00_0				3.70	01	4			3.70	3.70	32,412	0	
Carbon Monoxide	630-08-0				4.70	01	4			4.70	4.70	41,172	0	
Volatile Organic Compounds	NY998-00-0				0.27	01	4			0.27	0.27	2,365	0	
	- -													

SECTION G

SOLID FUEL TYPE	TONS / YR	% S	LIQUID FUEL TYPE	THOUSANDS OF GALLONS/YR	% S	GAS TYPE	THOUSANDS OF CF/YR	BTU/CF
						52	734,819	1030

APPLICABLE RULE	APPLICABLE RULE

Upon completion of construction sign the statement listed below and forward to the appropriate DEC representative

THE PROCESS, EXHAUST OR VENTILATION SYSTEM HAS BEEN CONSTRUCTED AND WILL BE OPERATED IN ACCORDANCE WITH STATED SPECIFICATIONS AND IN CONFORMANCE WITH ALL PROVISIONS OF EXISTING REGULATIONS.

165. SIGNATURE OF AUTHORIZED REPRESENTATIVE OR AGENT | DATE

AGENCY USE ONLY

156. LOCATION CODE	157. FACILITY ID. NO.	158. U.T.M. (E)	159. U.T.M. (N)	160. SIC NUMBER	161. DATE APPL. RECEIVED	162. DATE APPL. REVIEWED	163. REVIEWED BY
					/ /	/ /	

PERMIT TO CONSTRUCT

164. DATE ISSUED	165. EXPIRATION DATE	166. SIGNATURE OF APPROVAL	167. FEE
/ /	/ /		

168.
1. DEVIATION FROM APPROVED APPLICATION SHALL VOID THIS PERMIT
2. THIS IS NOT A CERTIFICATE TO OPERATE
3. TESTS AND/OR ADDITIONAL EMISSION CONTROL EQUIPMENT MAY BE REQUIRED PRIOR TO THE ISSUANCE OF A CERTIFICATE TO OPERATE

CERTIFICATE TO OPERATE

169. DATE ISSUED	170. EXPIRATION DATE	171. SIGNATURE OF APPROVAL	172. FEE
/ /	/ /		

173.
1. [ ] INSPECTED BY _____ DATE _____
2. [ ] INSPECTION DISCLOSED DIFFERENCES AS BUILT VS. PERMIT, CHANGES INDICATED ON FORM
3. [ ] ISSUE CERTIFICATE TO OPERATE FOR SOURCE AS BUILT
4. [ ] APPLICATION FOR C.O. DENIED _____ DATE _____ INITIALED _____

174. SPECIAL CONDITIONS:

1. 2.
3. 4.
5. 6.
7. 8.

OP	LOCATION	FACILITY	EMISSION POINT

A ADD
C CHANGE
D DELETE

READ INSTRUCTIONS CONTAINED IN FORM 75-11-12 BEFORE ANSWERING ANY QUESTION

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PROCESS, EXHAUST OR VENTILATION SYSTEM

APPLICATION FOR PERMIT TO CONSTRUCT OR CERTIFICATE TO OPERATE

COPIES
WHITE - ORIGINAL
GREEN - DIVISION OF AIR
WHITE - REGIONAL OFFICE
WHITE - FIELD REP.
YELLOW - APPLICANT

SECTION A

1. NAME OF OWNER / FIRM	NYC Department of Correction
2. NUMBER AND STREET ADDRESS	60 Hudson Street, Room 719
3. CITY - TOWN - VILLAGE	New York
4. STATE	NY
5. ZIP	10013
6. OWNER CLASSIFICATION	A. ☐ COMMERCIAL B. ☐ INDUSTRIAL C. ☐ UTILITY D. ☐ FEDERAL E. ☐ STATE F. ☐ MUNICIPAL G. ☐ EDUC. INST. H. ☐ HOSPITAL I. ☐ RESIDENTIAL J. ☒ OTHER
7. NAME & TITLE OF OWNER'S REPRESENTATIVE	Gregory McLaughlin, Warden/Support Services Division
8. TELEPHONE	718-546-1429
9. NAME OF AUTHORIZED AGENT	AKRF, Inc.
10. TELEPHONE	212-696-0670
11. NUMBER AND STREET ADDRESS	440 Park Avenue South, 7th Floor
12. CITY - TOWN - VILLAGE	New York
13. STATE	NY
14. ZIP	10016
15. NAME OF ARCHITECT OR PROFESSIONAL ENGINEER PREPARING APPLICATION	Ramon Li, P.E.
N.Y.S. P.E. ARCHITECT LICENSE NO.	060857
17. TELEPHONE	646-388-9724
18. SIGNATURE OF OWNER'S REPRESENTATIVE OR AGENT WHEN APPLYING FOR A PERMIT TO CONSTRUCT	
19. FACILITY NAME (IF DIFFERENT FROM OWNER / FIRM)	NYC-DOC-Rikers Island
20. FACILITY LOCATION (NUMBER AND STREET ADDRESS)	17-25 Hazen Street
21. CITY - TOWN - VILLAGE	East Elmhurst, NY
22. ZIP	11370
23. BUILDING NAME OR NUMBER	Cogen Building
24. FLOOR NAME OR NUMBER	1
25. START UP DATE	07 (MO) / 2012 (YR)
26. DRAWING NUMBERS OF PLANS SUBMITTED	Figures 1, 2, and 3
27. PERMIT TO CONSTRUCT	A. ☒ NEW SOURCE B. ☐ MODIFICATION
28. CERTIFICATE TO OPERATE	A. ☐ NEW SOURCE B. ☐ MODIFICATION C. ☐ EXISTING SOURCE

STATE OF NEW YORK — RAMON LI — No. 060857 — LICENSED PROFESSIONAL ENGINEER

SECTION B

29. EMISSION POINT ID	30. GROUND ELEVATION (FT.)	31. HEIGHT ABOVE STRUCTURES (FT.)	32. STACK HEIGHT (FT.)	33. INSIDE DIMENSIONS (IN.)	34. EXIT TEMP. (°F)	35. EXIT VELOCITY (FT./SEC.)	36. EXIT FLOW RATE (ACFM)	37. SOURCE CODE	38. HRS / DAY	39. DAYS / YR	40. % OPERATION BY SEASON: Winter	Spring	Summer	Fall
U0028	15	57	100	66	930	89.3	127,317		24	365	25	25	25	25

SECTION C

41. DESCRIBE PROCESS OR UNIT

Emission Point U0028 is the bypass stack, which exhausts the 7.5 MW simple cycle gas fired turbine from Train #2. Emissions from the main stack (Emission Point U0027) and the bypass stack would be proportional to the load through each stack. Emissions from U0028 reflect total emissions through the bypass stack at 100 percent load and at ISO conditions (ambient temp. of 59F).

SECTION D

EMISSION CONTROL EQUIPMENT I.D.	CONTROL TYPE	MANUFACTURER'S NAME AND MODEL NUMBER	DISPOSAL METHOD	DATE INSTALLED MONTH / YEAR	USEFUL LIFE
None				/	
				/	

SECTION E

CALCULATIONS

See attached emissions calculation sheet.

SECTION F

CONTAMINANT NAME	CAS NUMBER	INPUT OR PRODUCTION	UNIT	HRV RATING	EMISSIONS ACTUAL	UNIT	HOW OFT	PERMISSIBLE	% CONTROL EFFICIENCY	HOURLY EMISSIONS (LBS/HR) ERP	ACTUAL	ANNUAL EMISSIONS (LBS/YR) ACTUAL	10^4	PERMISSIBLE
Total Particulates	NY75-00-0				1.64	01	4			1.64	1.64	14,372	0	
Sulfur Dioxide	7446_09_5				0.01	01	4			0.01	0.01	88	0	
Nitrogen Oxides	NY210_00_0				3.70	01	4			3.70	3.70	32,412	0	
Carbon Monoxide	630-08-0				4.70	01	4			4.70	4.70	41,172	0	
Volatile Organic Compounds	NY998-00-0				0.27	01	4			0.27	0.27	2,365	0	
- -														

SECTION G

SOLID FUEL TYPE	TONS / YR	% S	LIQUID FUEL TYPE	THOUSANDS OF GALLONS/YR	% S	GAS TYPE	THOUSANDS OF CF/YR	BTU/CF
						52	734,819	1030

APPLICABLE RULE	APPLICABLE RULE

Upon completion of construction sign the statement listed below and forward to the appropriate field representative

THE PROCESS, EXHAUST OR VENTILATION SYSTEM HAS BEEN CONSTRUCTED AND WILL BE OPERATED IN ACCORDANCE WITH STATED SPECIFICATIONS AND IN CONFORMANCE WITH ALL PROVISIONS OF EXISTING REGULATIONS.

155. SIGNATURE OF AUTHORIZED REPRESENTATIVE OR AGENT — DATE

AGENCY USE ONLY

156. LOCATION CODE	157. FACILITY ID. NO.	158. U.T.M. (E)	159. U.T.M. (N)	160. SIC NUMBER	161. DATE APPL. RECEIVED	162. DATE APPL. REVIEWED	163. REVIEWED BY
					/ /	/ /	

PERMIT TO CONSTRUCT

164. DATE ISSUED	165. EXPIRATION DATE	166. SIGNATURE OF APPROVAL	167. FEE
/ /	/ /		

168.
1. DEVIATION FROM APPROVED APPLICATION SHALL VOID THIS PERMIT
2. THIS IS NOT A CERTIFICATE TO OPERATE
3. TESTS AND/OR ADDITIONAL EMISSION CONTROL EQUIPMENT MAY BE REQUIRED PRIOR TO THE ISSUANCE OF A CERTIFICATE TO OPERATE

CERTIFICATE TO OPERATE

169. DATE ISSUED	170. EXPIRATION DATE	171. SIGNATURE OF APPROVAL	172. FEE
/ /	/ /		

172.
1. ☐ INSPECTED BY _____ DATE _____
2. ☐ INSPECTION DISCLOSED DIFFERENCES AS BUILT VS. PERMIT, CHANGES INDICATED ON FORM
3. ☐ ISSUE CERTIFICATE TO OPERATE FOR SOURCE AS BUILT
4. ☐ APPLICATION FOR C.O. DENIED _____ DATE _____ INITIALED _____

173. SPECIAL CONDITIONS:

1. 2.
3. 4.
5. 6.
7. 8.

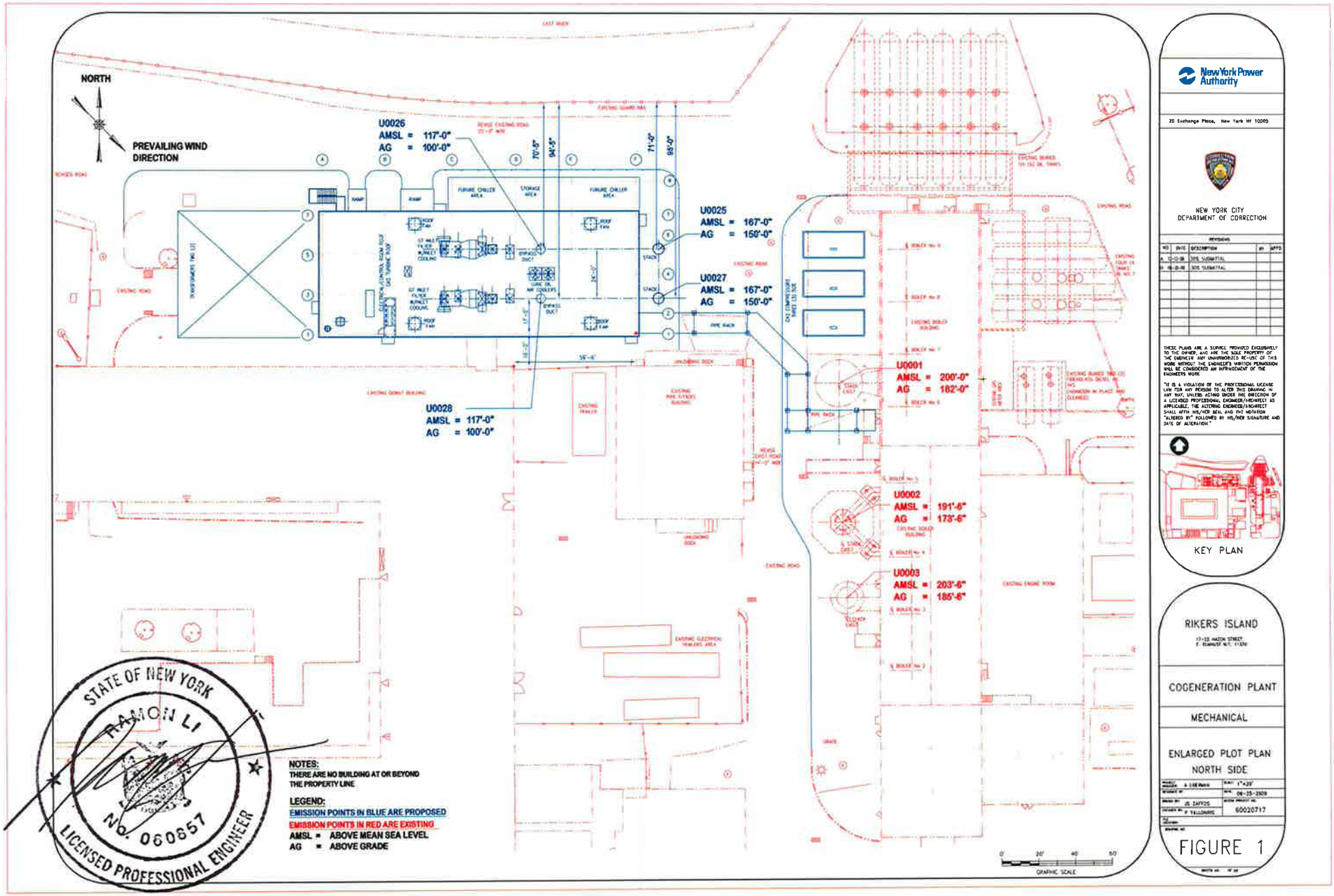
TABLE 1
NYC-DOC-Rikers Island
Cogeneration Emission Rates at ISO Conditions

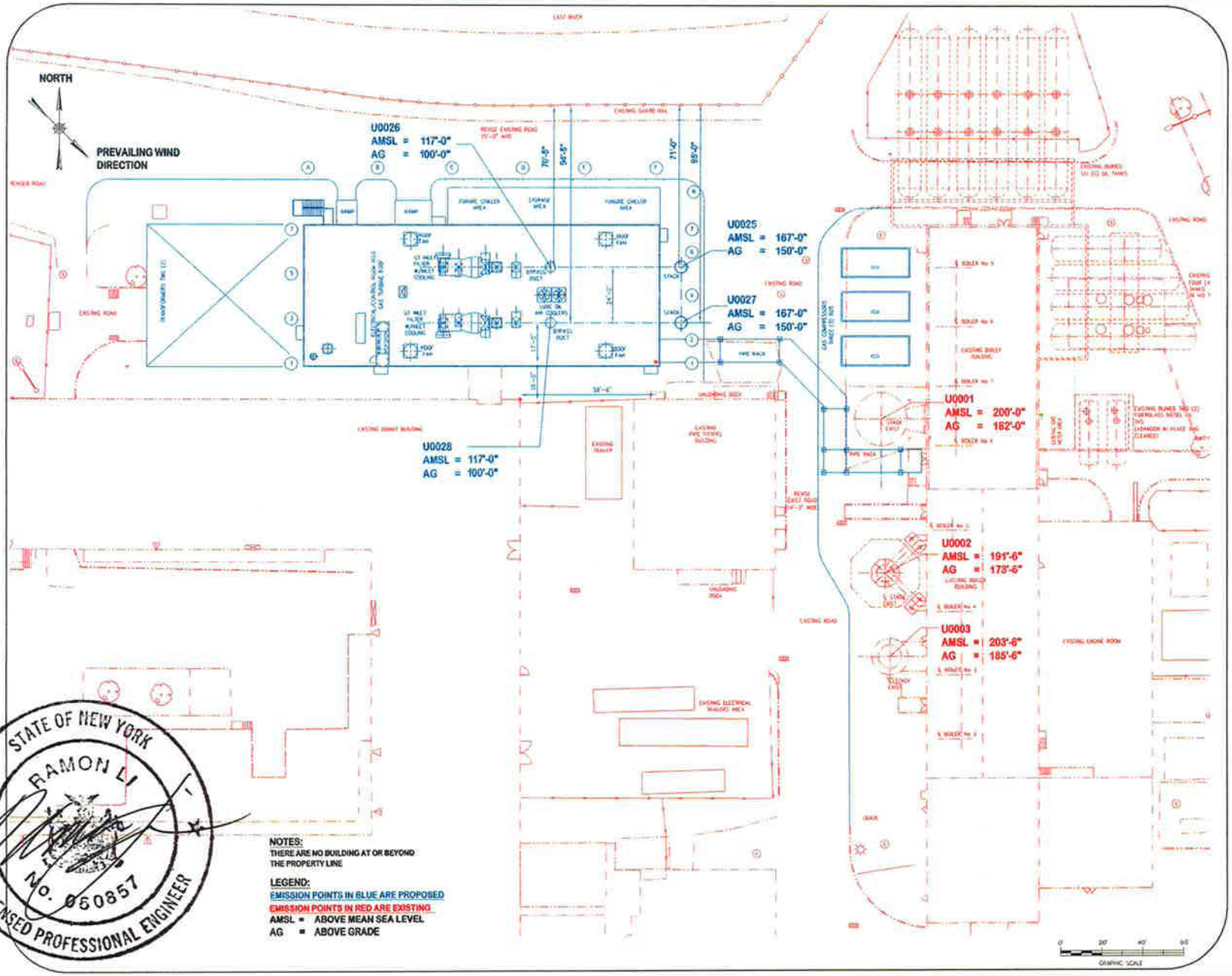
Solar Taurus 70

Emissions (per unit)								
Case No.			1	2	3	4	5	6
Fuel			Natural Gas					
Ambient Temperature (°F)			0	59	100	59	59	59
Load			100%	100%	100%	100%	75%	50%
Heat Input (MMBtu/hr, LHV)			90.4	78.5	68.4	78.5	63.7	51.4
Heat Input (MMBtu/hr, HHV)			99.4	86.4	75.2	86.4	70.1	56.5
Gas Turbine Exhaust Flow (lb/hr)			231,894	211,172	186,338	211,172	173,691	135,748
Combustion Turbine Emissions	Lb/MMBtu, HHV	NOx	0.0430	0.0430	0.0430	0.0430	0.0430	0.0420
		CO	--	--	--	--	--	--
		VOC	--	--	--	--	--	--
		PM10/PM2.5	0.019	0.019	0.019	0.019	0.019	0.019
		SO2	--	--	--	--	--	--
	Lb/hr	NOx	4.30	3.70	3.20	3.70	3.00	2.40
		CO	5.40	4.70	4.00	4.70	3.80	3.10
		VOC	0.31	0.27	0.23	0.27	0.22	0.18
		PM10/PM2.5	1.89	1.64	1.43	1.64	1.33	1.07
		SO2	0.01	0.01	0.01	0.01	0.01	0.01
	lbs/yr	NOx	37,668	32,412	28,032	32,412	26,280	21,024
		CO	47,304	41,172	35,040	41,172	33,288	27,156
		VOC	2,716	2,365	2,015	2,365	1,927	1,577
		PM10/PM2.5	16,551	14,372	12,523	14,372	11,662	9,411
		SO2	88	88	88	88	88	88
Duct Burner			Y	Y	Y	N	N	N
Fuel			Natural Gas					
Load			100%	100%	100%	0%	0%	100%
Fuel Flow (lbs/hr)			1,570	1,670	1,719	0	0	0
Heat Input (MMBtu/hr, LHV)			32.4	34.4	35.4	0.0	0.0	0.0
Heat Input (MMBtu/hr, HHV)			35.9	38.2	39.3	0.0	0.0	0.0
Duct Burner Emissions	Lb/MMBtu, HHV	NOx	0.070	0.070	0.070	0.070	0.070	0.070
		CO	0.080	0.080	0.080	0.080	0.080	0.080
		VOC	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045
		PM10/PM2.5	0.010	0.010	0.010	0.010	0.010	0.010
		SO2	--	--	--	--	--	--
	Lb/hr	NOx	2.51	2.67	2.75	0.00	0.00	0.00
		CO	2.87	3.06	3.14	0.00	0.00	0.00
		VOC	0.16	0.17	0.18	0.00	0.00	0.00
		PM10/PM2.5	0.36	0.38	0.39	0.00	0.00	0.00
		SO2	0.49	0.39	0.39	0.00	0.00	0.00
	lbs/yr	NOx	22,014	23,424	24,099	0	0	0
		CO	25,159	26,771	27,541	0	0	0
		VOC	1,415	1,506	1,549	0	0	0
		PM10/PM2.5	3,145	3,346	3,443	0	0	0
		SO2	4,292	3,416	3,416	0	0	0
Stack Exhaust Temperature (°F)			275	292	275	292	311	305
Stack Exhaust Temperature (°K)			408.15	417.59	408.15	417.59	428.15	424.82
Stack Exhaust Flow (lbs/hr)			233,464	212,842	188,057	211,172	173,691	135,748
Stack Exhaust Flow (ACFM)			73,271	68,345	59,020	67,808	57,183	44,343
Stack Exhaust Diameter (feet)			5	5	5	5	5	5
Stack Exhaust Velocity (ft/s)			62.2	58.0	50.1	57.6	48.5	37.6
Stack Exhaust Velocity (m/s)			18.957	17.682	15.270	17.544	14.794	11.473
Stack Exhaust Emissions	Lb/hr	NOx	6.81	6.37	5.95	3.70	3.00	2.40
		CO	8.27	7.76	7.14	4.70	3.80	3.10
		VOC	0.47	0.44	0.41	0.27	0.22	0.18
		PM10/PM2.5	2.25	2.02	1.82	1.64	1.33	1.07
		SO2	0.50	0.40	0.40	0.40	0.20	0.20
	lbs/yr	NOx	59,682	55,836	52,131	32,412	26,280	21,024
		CO	72,463	67,943	62,581	41,172	33,288	27,156
		VOC	4,131	3,871	3,564	2,365	1,927	1,577
		PM10/PM2.5	19,696	17,718	15,966	14,372	11,662	9,411
		SO2	4,380	3,504	3,504	3,504	1,752	1,752

Notes:
(1) PM10/PM2.5, NOx, CO, SO2, and UHC emission factors based on vendor data. VOC is 10% of UHC emissions.

STATE OF NEW YORK
RAMON L.
No. 060857
LICENSED PROFESSIONAL ENGINEER


NORTH
PREVAILING WIND DIRECTION
U0026
AMSL = 117'-0"
AG = 100'-0"
U0025
AMSL = 167'-0"
AG = 150'-0"
U0027
AMSL = 167'-0"
AG = 150'-0"
U0028
AMSL = 117'-0"
AG = 100'-0"
U0001
AMSL = 200'-0"
AG = 182'-0"
U0002
AMSL = 191'-6"
AG = 173'-6"
U0003
AMSL = 203'-6"
AG = 185'-6"
70'-5"
94'-5"
71'-0"
95'-0"
NOTES:
THERE ARE NO BUILDING AT OR BEYOND THE PROPERTY LINE
LEGEND:
EMISSION POINTS IN BLUE ARE PROPOSED
EMISSION POINTS IN RED ARE EXISTING
AMSL = ABOVE MEAN SEA LEVEL
AG = ABOVE GRADE
STATE OF NEW YORK
RAMON LI
No. 060857
LICENSED PROFESSIONAL ENGINEER
GRAPHIC SCALE
New York Power Authority
20 Exchange Place, New York NY 10005
NEW YORK CITY DEPARTMENT OF CORRECTION
KEY PLAN
RIKERS ISLAND
COGENERATION PLANT
MECHANICAL
ENLARGED PLOT PLAN
NORTH SIDE
1"=20'
06-25-2009
60020717
FIGURE 1



NOTES:
THERE ARE NO BUILDING AT OR BEYOND THE PROPERTY LINE

LEGEND:
EMISSION POINTS IN BLUE ARE PROPOSED
EMISSION POINTS IN RED ARE EXISTING
AMSL = ABOVE MEAN SEA LEVEL
AG = ABOVE GRADE

STATE OF NEW YORK
RAMON L
No. 050857
LICENSED PROFESSIONAL ENGINEER

New York Power Authority

NEW YORK CITY
DEPARTMENT OF CORRECTION

KEY PLAN

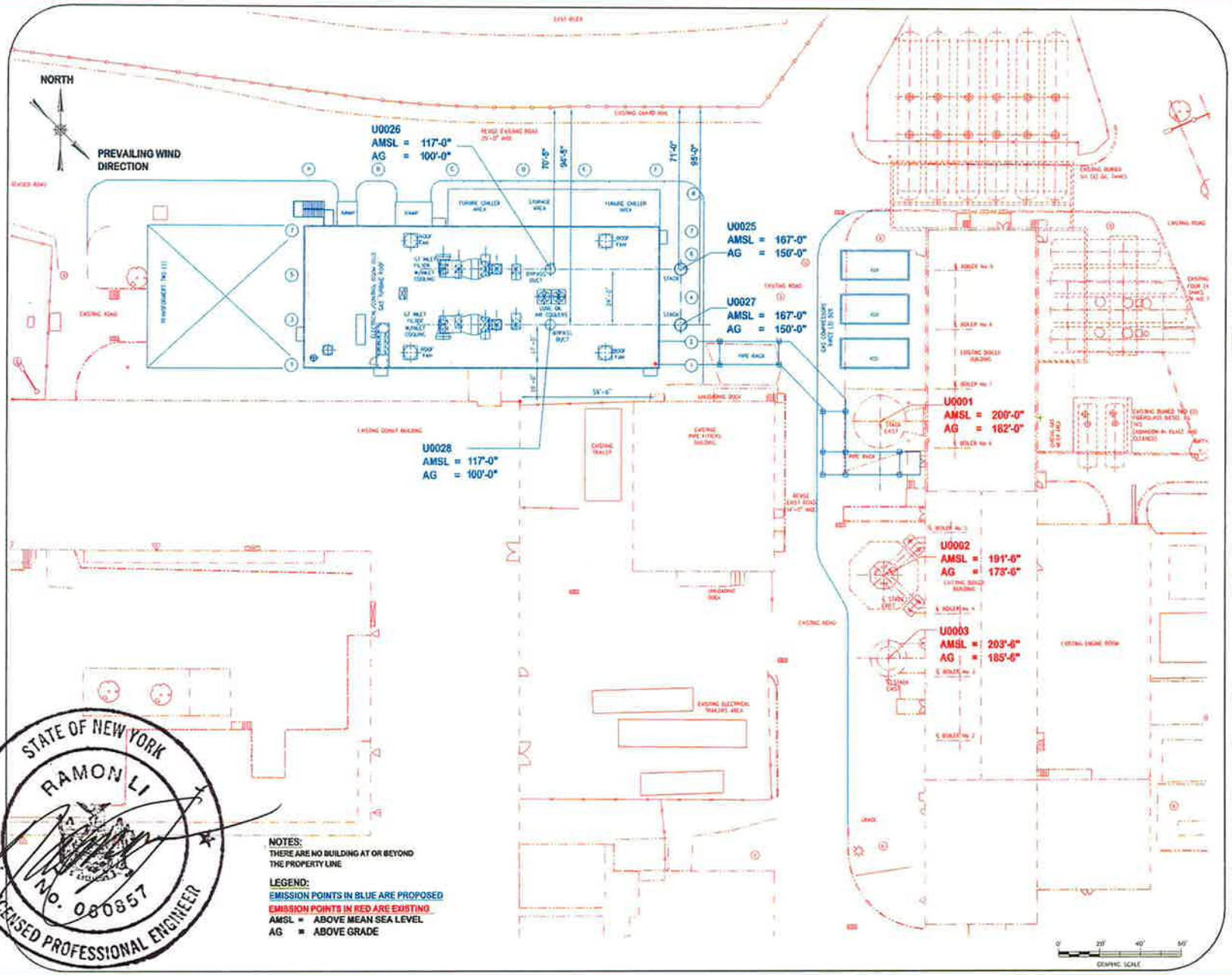
RIKERS ISLAND

COGENERATION PLANT

MECHANICAL

ENLARGED PLOT PLAN
NORTH SIDE

FIGURE 1



STATE OF NEW YORK
RAMON LI
No. 080857
LICENSED PROFESSIONAL ENGINEER

NOTES:
THERE ARE NO BUILDING AT OR BEYOND THE PROPERTY LINE

LEGEND:
EMISSION POINTS IN BLUE ARE PROPOSED
EMISSION POINTS IN RED ARE EXISTING
AMSL = ABOVE MEAN SEA LEVEL
AG = ABOVE GRADE

New York Power Authority

30 Exchange Place, New York NY 10005

NEW YORK CITY
DEPARTMENT OF CORRECTION

REVISIONS

NO	DATE	DESCRIPTION	BY	APPD
A	6-12-08	30% SUBMITTAL		
B	10-30-08	30% SUBMITTAL		

THESE PLANS ARE A SERVICE PROVIDED EXCLUSIVELY TO THE OWNER, AND ARE THE SOLE PROPERTY OF THE ENGINEER. ANY UNAUTHORIZED RE-USE OF THIS WORK WITHOUT THE ENGINEER'S WRITTEN PERMISSION WILL BE CONSIDERED AN INFRINGEMENT OF THE ENGINEERS WORK.

"IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AS APPLICABLE. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION."

KEY PLAN

RIKERS ISLAND
17-25 HAZEN STREET
E. ELMHURST N.Y. 11370

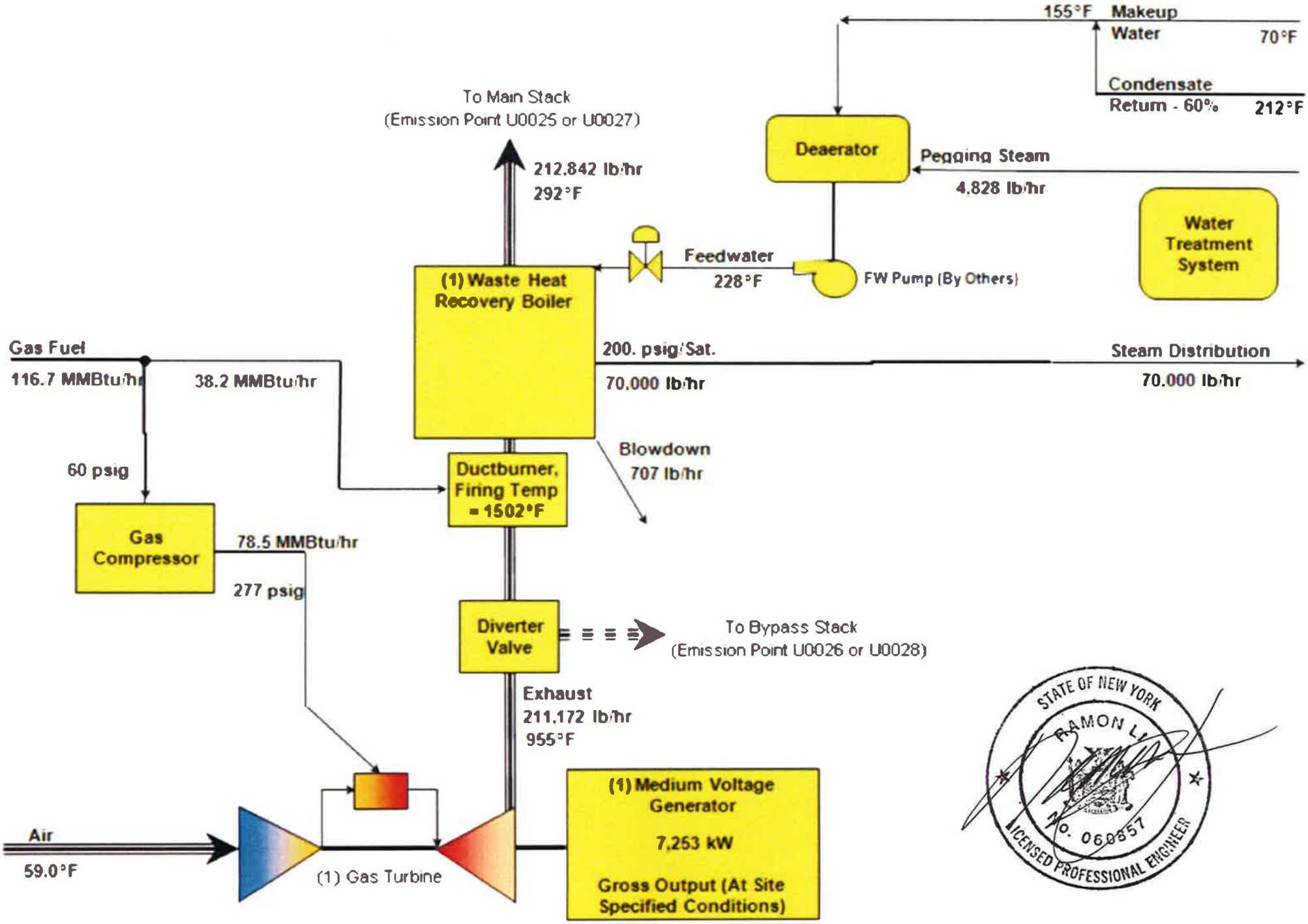
COGENERATION PLANT

MECHANICAL

ENLARGED PLOT PLAN
NORTH SIDE

PROJECT MANAGER: K. LEE-KWAN	SCALE: 1"=20'
DESIGNED BY:	DATE: 09-25-2008
DRAWN BY: JL ZAFFOG	ACTION PROJECT NO: 50020717
CHECKED BY: P. YALLOURIS	

FIGURE 1

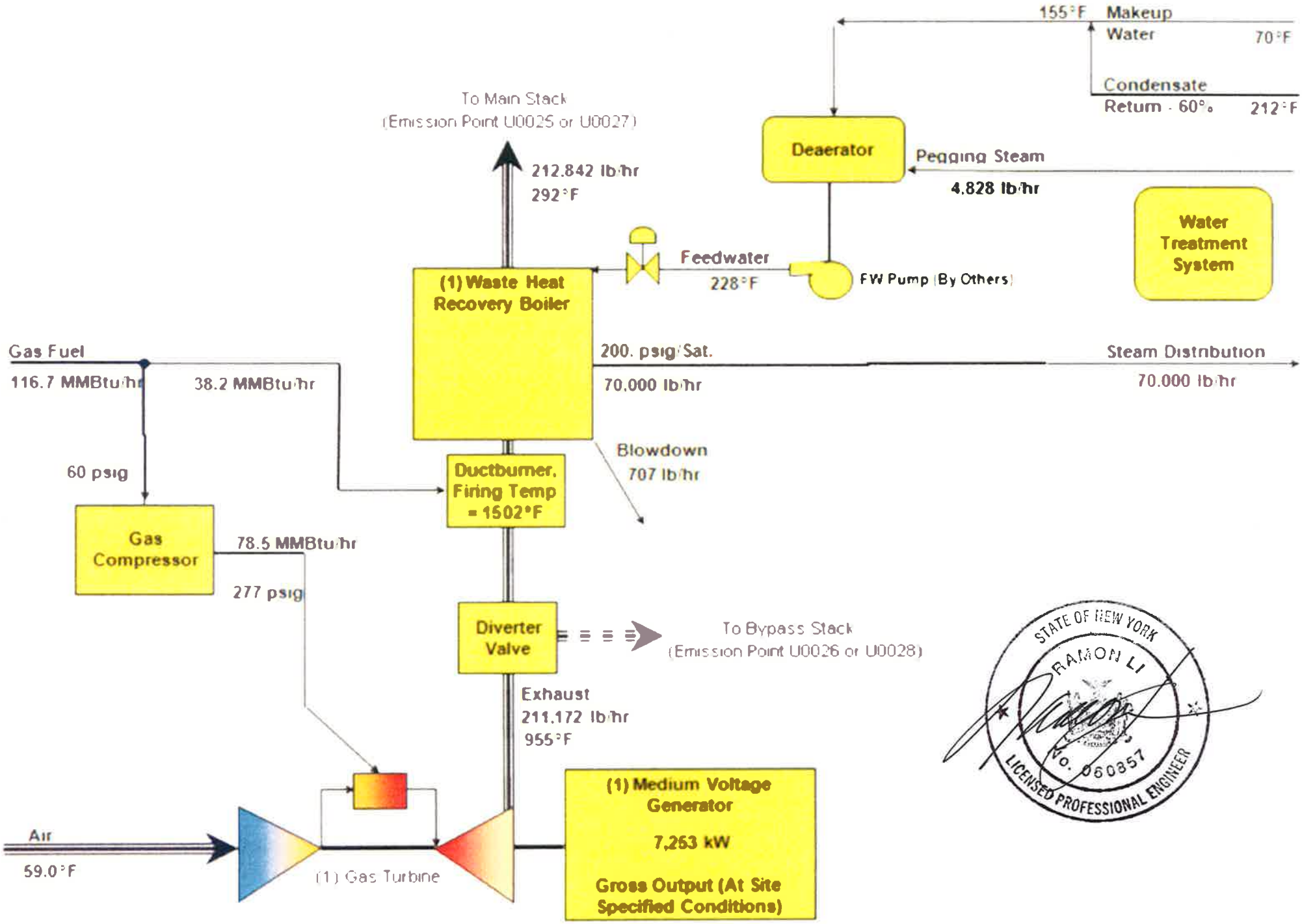


CHP Efficiency = 89.8%

Fuel Flow(s) based on Lower Heating Value

Typical Process Flow Diagram

Figure 2

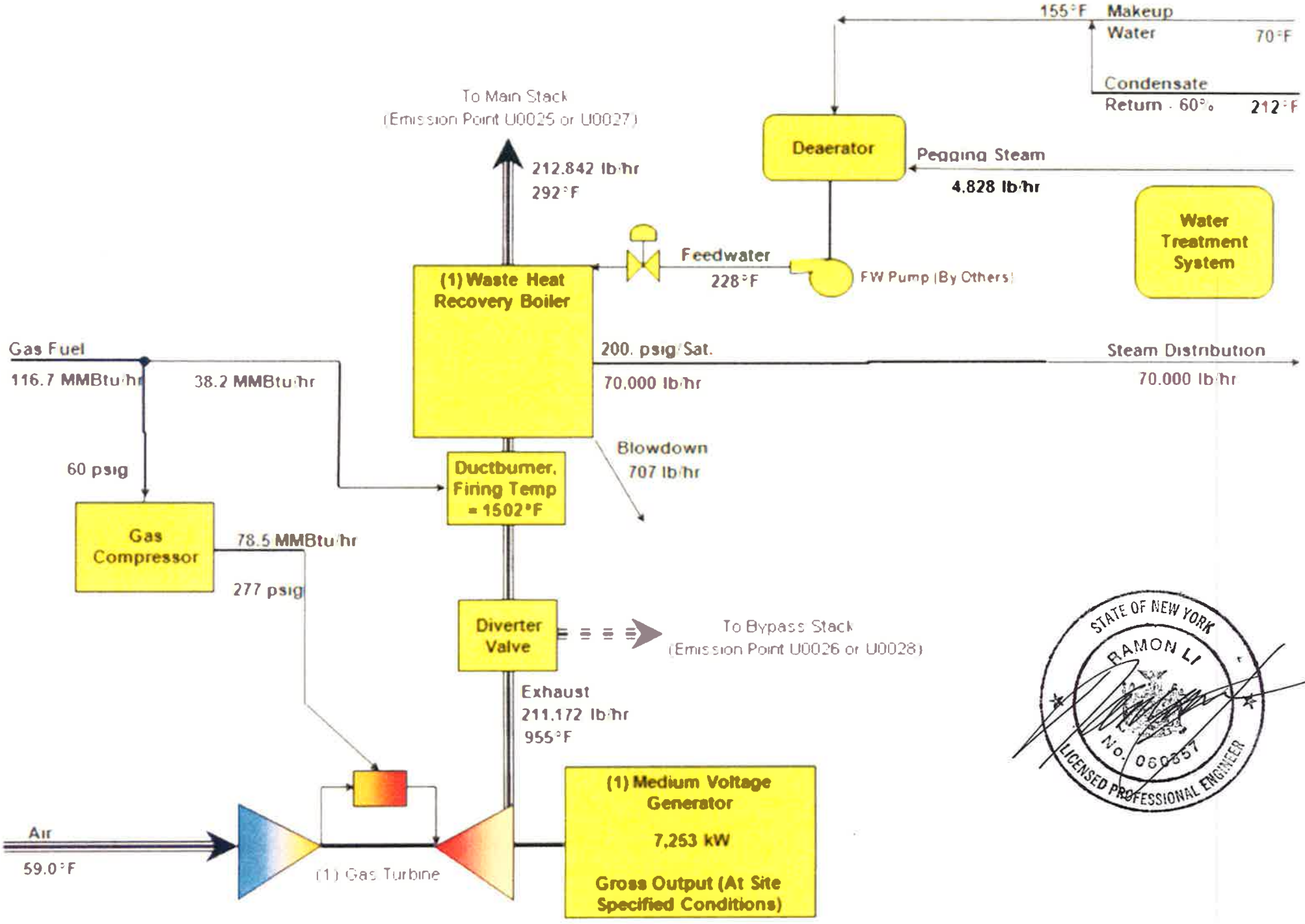


CHP Efficiency = 89.8%

Fuel Flow(s) based on Lower Heating Value

Typical Process Flow Diagram

Figure 2

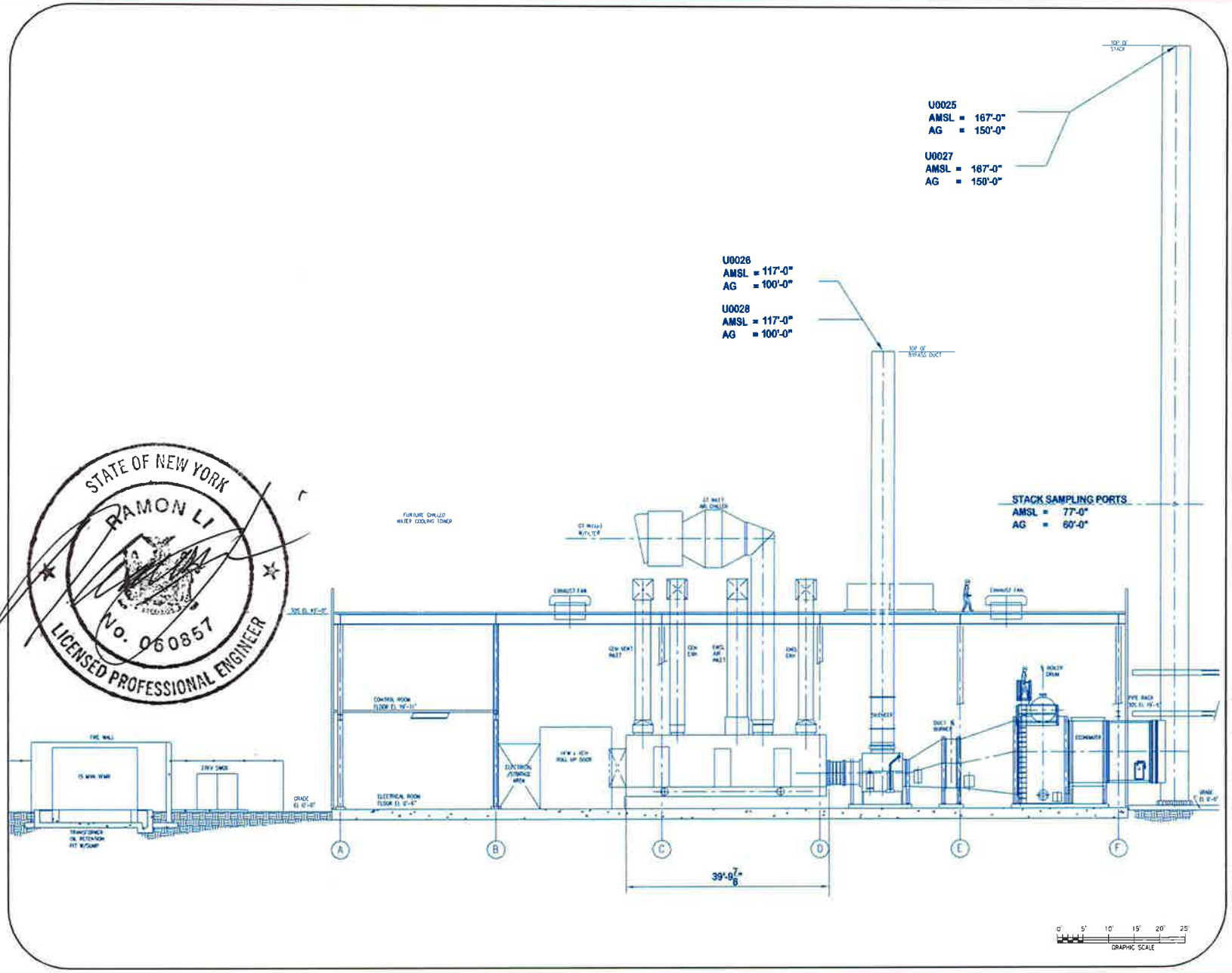


CHP Efficiency = 89.8%

Fuel Flow(s) based on Lower Heating Value

Typical Process Flow Diagram

Figure 2



New York Power Authority

20 Exchange Place, New York NY 10005

NEW YORK CITY
DEPARTMENT OF CORRECTION

REVISIONS

NO.	DATE	DESCRIPTION	BY	APPD
A	12-12-08	30% SUBMITTAL		
B	06-30-09	30% SUBMITTAL		

THESE PLANS ARE A SERVICE PROVIDED EXCLUSIVELY TO THE OWNER, AND ARE THE SOLE PROPERTY OF THE ENGINEER. ANY UNAUTHORIZED RE-USE OF THIS WORK WITHOUT THE ENGINEER'S WRITTEN PERMISSION WILL BE CONSIDERED AN INFRINGEMENT OF THE ENGINEER'S WORK.

"IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY. UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AS APPLICABLE, THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION."

KEY PLAN

RIKERS ISLAND

17-25 HAZEN STREET
E. ELMHURST N.Y. 11370

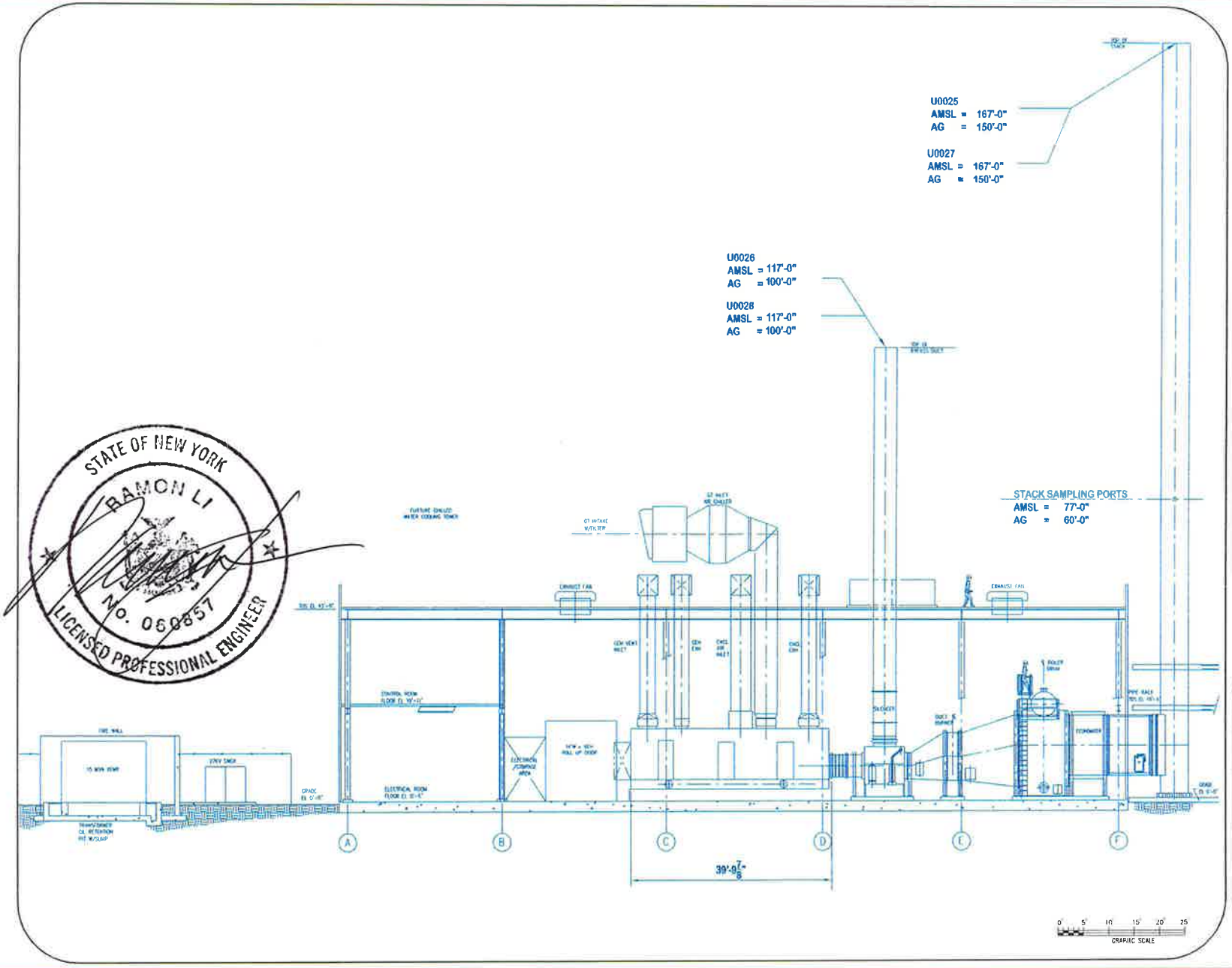
COGENERATION PLANT

MECHANICAL

GENERAL ARRANGEMENT
GAS TURBINE BUILDING
ELEVATION

A. LIBERMAN	1/8"=1'-0"
JS ZAFFOS	09-25-2009
P. TALLOURS	60020717

FIGURE 3



New York Power Authority

NEW YORK CITY
DEPARTMENT OF CORRECTION

KEY PLAN

RIKERS ISLAND

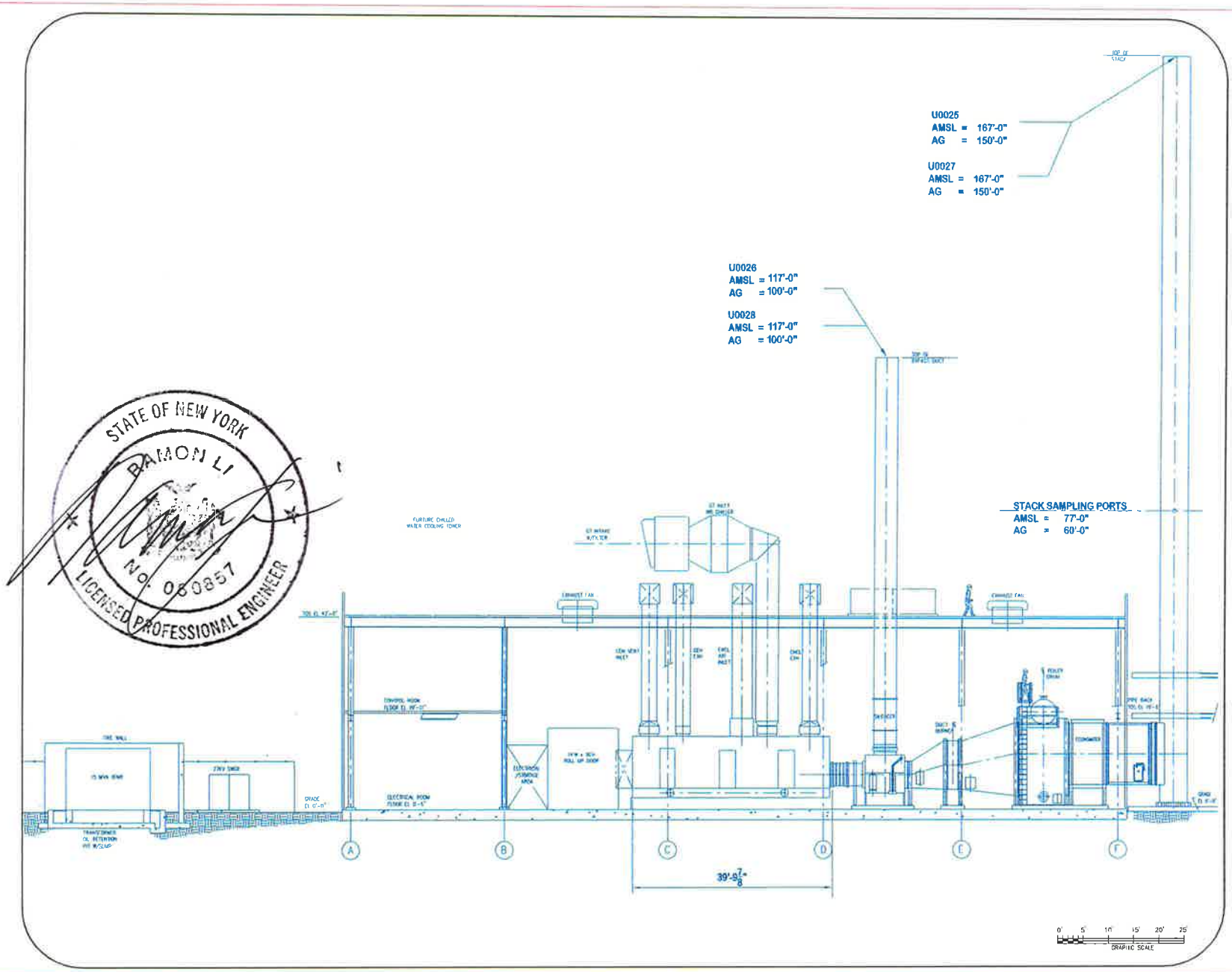
COGENERATION PLANT

MECHANICAL

GENERAL ARRANGEMENT
GAS TURBINE BUILDING
ELEVATION

60020717

FIGURE 3



New York Power Authority

20 Exchange Place, New York NY 10005

NEW YORK CITY
DEPARTMENT OF CORRECTION

REVISIONS

NO.	DATE	DESCRIPTION	DR	APPD
A	[illegible]	[illegible]		
B	[illegible]	[illegible]		

THESE PLANS ARE A SERVICE PROVIDED EXCLUSIVELY TO THE OWNER, AND ARE THE SOLE PROPERTY OF THE ENGINEER. ANY UNAUTHORIZED RE-USE OF THIS WORK WITHOUT THE ENGINEER'S WRITTEN PERMISSION WILL BE CONSIDERED AN INFRINGEMENT OF THE ENGINEERS WORK.

IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THIS DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AS APPLICABLE. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION.

KEY PLAN

RIKERS ISLAND

COGENERATION PLANT

MECHANICAL

GENERAL ARRANGEMENT
GAS TURBINE BUILDING
ELEVATION

A. LIBERMAN	1/8"=1'-0"
	09-25-2009
JS ZAFFIS	60020717
P. KALLIARIS	

FIGURE 3