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AUTH.NAME AUTHOR AFFILIATION
FIELDS,J.S. Pennsylvania Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
PATEL,B.H. Pennsylvania, Commonwealth of,

SUBJECT: Forwards updated application for plan approval/permit for concrete batch plant originally submitted on 840213,in response to 840217 telcon.

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Pennsylvania Power & Light Company
Two North Ninth Street • Allentown, PA 18101 • 215/770-5151

February 22, 1984

Mr. Babu H. Patel, Chief
Air Quality Control
Pennsylvania Department of Environmental Resources
90 E. Union Street, Second Floor
Wilkes-Barre, PA 18701-3296

SUSQUEHANNA STEAM ELECTRIC STATION
CONCRETE BATCH PLANT
APPLICATION FOR PLAN APPROVAL/PERMIT
CCN 741326 FILE 012
PLE-4550

Dear Mr. Patel:

In response to our telephone conversation of February 17, 1984, the Pennsylvania Power and Light Co. is updating an Application for Plan Approval/Permit for a Concrete Batch Plant submitted to the Pennsylvania Department of Environmental Resources (Pa. DER) on February 13, 1984. Two completed copies of an Air Permit Application form, Section C - Control Equipment, are attached.

If you have any questions, please call me at (215) 770-7889.

Respectfully yours,

Jerome S. Fields
Sr. Environmental Specialist-Nuclear

JSF:mp

jsfltb000552a

Attachments

cc:
[redacted]
A. Snelson
P. J. Koval
[redacted]
Pa. DER
Pa. DER

Cool
1/1

Section C — Control Equipment

1. POTENTIAL PROCESS EMISSIONS (OUTLET FROM PROCESS, BEFORE ANY CONTROL EQUIPMENT)

A. Outlet particulate loading (lbs/hr or gr/SCF Dry)

TRACE

B. Specific gravity of particulate (not bulk density) 3.1

C. Attach outlet particle size distribution information Portland Cement dust - 34% 0-10 microns; 52% 10-50 microns; 14% 50+ microns

D. Specify gaseous contaminants and concentration

N/A - vented air with no gaseous contaminants

	Contaminant	Concentration			VOC Contaminants	Concentration	
(1)	SOx	____ ppm (Vol.)	____ lbs/hr	(4)	____	____ ppm (Vol.)	____ lbs/hr
(2)	NOx	____ ppm (Vol.)	____ lbs/hr	(5)	____	____ ppm (Vol.)	____ lbs/hr
(3)	CO	____ ppm (Vol.)	____ lbs/hr	(6)	____	____ ppm (Vol.)	____ lbs/hr

2. GAS CONDITIONER (IF APPLICABLE) N/A

A. Water quenching ☐ Yes ☐ No

Water injection rate ____ GPM

B. Radiation and convection cooling ☐ Yes ☐ No

C. Air dilution ☐ Yes ☐ No

____ CFM

D. Gas conditioner outlet

____ ACFM @ ____ °F

3. SETTLING CHAMBERS (IF APPLICABLE) N/A

A. Manufacturer

B. Volume of gas handled ____ ACFM @ ____ °F	C. Gas velocity
D. Length of expansion chamber (ft)	E. Width of expansion chamber (ft)
F. Height of expansion chamber (ft)	G. Number of trays

H. Inlet concentration (lbs/hr or gr/SCF Dry)	I. Outlet concentration (lbs/hr or gr/SCF Dry)	J. Overall efficiency (%)
K. Water injection ☐ Yes ☐ No	L. Water injection rate (GPM)	M. Attach particle size Efficiency curve

Section C — Control Equipment, Continued

4. INERTIAL AND CYCLONE COLLECTORS (IF APPLICABLE)

N/A

A. Manufacturer	B. Type	C. Model Number
D. Pressure Drop (water gage)	E. Inlet Gas Volume (ACFM)	F. Inlet Gas Temperature (°F)
G. Design inlet volume (ACFM)		
H. Inlet concentration (lbs/hr or gr/SCF Dry)	I. Outlet concentration (lbs/hr or gr/SCF Dry)	J. Overall efficiency (%)

K. Attach particle size efficiency curve	L. Number of individual cyclone(s)
M. Inlet diameter (ft) or duct area (ft^2) of cyclone(s)	N. Outlet diameter (ft) or duct area (ft^2) of cyclone(s)
O. Length of cyclone(s) cylinder (ft)	P. Length of cyclone(s) cone (ft)
Q. Diameter of cyclone(s) cylinder	R. Outlet straightening vanes used? ☐ Yes ☐ No

5. CATALYTIC AND THERMAL AFTERBURNERS (IF APPLICABLE)

N/A

A. Manufacturer	B. Type	C. Model No.
D. Minimum temperature maintained (°F)	E. Retention time at this temperature (sec)	F. Volume of gases handled (ACFM @ °F)

G. Design inlet volume (ACFM)	H. No. and capacity (BTU/hr) of burners
I. Catalyst used	J. Expected temperature rise across catalyst

K. Are temperature sensing devices being provided to measure the temperature rise across the catalyst? ☐ Yes ☐ No

L. Is a heat exchanger system used for heat recovery? ☐ Yes ☐ No

M. Inlet concentration ppm (Vol.)	N. Outlet concentration ppm (Vol.)	O. Overall efficiency (%)

P. Attach dimensioned diagram of afterburner and stack

Q. Describe any temperature sensing and/or recording devices (including specific location of temperature probe).

Section C — Control Equipment, Continued

6. FABRIC COLLECTORS (IF APPLICABLE)

A. Manufacturer: Griffin Environmental Company, Inc.

B. Model No.: 36IS
☐ Pressurized design
☒ Suction design

C. Air to cloth ratio (actual conditions): 2.8:1

D. Type of Fabric
Material: Cotton Sateen ☒ Felted
Weight: 16 oz/sq yd ☐ Woven
Thickness: -- in ☐ Felted-Woven

E. Fabric Permeability (clean) @ 1/2" w.g. Δ P: not available CFM/ sq. ft.

F. Pressure drop across collector (in. wg.): 5

G. Volume of gases handled (ACFM): 350

H. Inlet gas temperature (F): Ambient

I. Design inlet volume (ACFM): 350 max

J. Inlet concentration (lbs/hr or gr/SCF Dry): 10 lbs/hr.

K. Outlet concentration (lbs/hr or gr/SCF Dry): TRACE

L. Overall efficiency (%): 99.9 + %

M. No. of compartments: 1

N. No. of bags per compartment: 36

O. Can each compartment be isolated for repairs and/or bag replacement? NO

P. Bag dimensions: Length 38" Diameter (or width if envelope type bag) 4"

Q. If multiple walled bags provide detail: N/A

R. Method of bag cleaning
☒ Shaker
☐ Reverse compartmental pulse
☐ Reverse bag pulse
☐ Reverse jet (blow ring)
☐ Reverse flow
☐ Other

S. Cleaning initiated by
☒ Timer — Frequency if timer actuated: Bags are cleaned after every silo loading operation
☐ Pressure drop _____ psig

T. Shaker cleaning
☒ Mechanical
☐ Manual
☐ One compartment shaken at a time
☒ All compartments shaken at once

U. Reverse flow cleaning air supply
Source: N/A
CFM: _____

V. Others
Flushing pressure (psig): N/A

W. Are temperature controls provided? (Describe in detail)
NO

X. Is baghouse insulated: NO

Y. Maximum temperature bags can withstand (F): 250

Z. Dew point at maximum Moisture (F): N/A

Section C — Control Equipment, Continued

7. PARTICULATE MATTER SCRUBBERS (IF APPLICABLE)

N/A

A. Manufacturer	B. Type	C. Model No.

D. Pressure drop (water gage) across scrubber only. Do not include duct or demister losses

E. Gas temperatures (°F)

at inlet _____ outlet _____

F. Volume of gases handled at inlet temperature (ACFM)	G. Design inlet volume (ACFM)

H. Water flow rate (GPM)	I. Relative particulate/gas velocity (ejector scrubbers)

J. Inlet concentration (lbs/hr or gr/SCF Dry)	K. Outlet concentration (lbs/hr or gr/SCF Dry)	L. Overall efficiency (%)

M. Attach particle size efficiency curve

N. Describe equipment provided to measure pressure drop and water flow rate to scrubber

O. Describe scrubber water supply system (amount of make-up and recirculating water, capacity of recirculating water system, etc.)

P. Describe mist eliminator or separator (configuration, backflush capability, frequency)

Q. pH monitoring and adjustment? Describe if yes

☐ Yes ☐ No

Section C — Control Equipment Continued

E. ELECTROSTATIC PRECIPITATOR (IF APPLICABLE)

N/A

A. Manufacturer	B. Model No.	C. ☐ Wet ☐ Dry ☐ Single-Stage - ☐ Multi-Stage

D. Pressure drop (water gage)
Across collector only

E. Design inlet volume (ACFM) _____
Actual volume handled (ACFM) _____

F. Maximum operating temp. (°F) _____
Actual operating temp. (°F) _____

G. Maximum Dust Inlet Conc. (gr/DSCF) _____
Maximum Dust Outlet Conc. (gr/DSCF) _____

H. Dust resistivity (ohm/cm)

I. Gas Distribution Grids
☐ Yes ☐ No

J. Total collecting surface area _____ sq. ft.
Collector plates size length _____ ft x width _____ ft
No. of fields _____ no. of collector plates/field _____
Spacing between collector plates _____ inches
Maximum gas velocity _____ ft/sec
Minimum gas treatment time _____ sec

K. Total discharge electrode length _____ ft
Number of discharge electrodes _____

L. Number And Size of Transformer Rectifier Sets By Electrical Field

Field No.	No. of Sets	Each Transformer KVA	Each Rectifier KVAve/Peak	Each Rectifier Ma DC

M. Current density	N. Corona power	O. Corona power density
_____ Micro amperes/ft.^{2}	_____ Watts/1000 ACFM	_____ Watts/ft.^{2}

P. Number collecting electrode rappers _____
Minimum acceleration rating for rappers _____ g's

Q. Flue gas conditioning equipment used? ☐ Yes ☐ No
Describe (If Yes)

Section C — Control Equipment

9. ADSORPTION EQUIPMENT N/A

A. Manufacturer	B. Type	C. Model No.

D. Volume of gases handled ACFM	E. Inlet temperature (°F)

F. Design inlet volume (ACFM)	G. Percent concentration of solvent in exhaust gases

H. Carbon charge per adsorber vessel and number of adsorber vessels	I. Adsorbent type, density and property

J. Vapor pressure of solvents at the inlet temperature

K. Length of MTZ (supplied by the manufacturer based upon laboratory data)

L. Percent relative saturation of each solvent at the inlet temperature

M. Breakthrough capacity [lbs of solvent / 100 lbs of adsorbent]

N. Working capacity of adsorbent (%)	O. Heel percent or unrecoverable solvent weight % in the adsorbent after regeneratic

P. Adsorber diameter (ft) and area (ft^2)

Q. Adsorption bed depth (ft)

R. Available steam in pounds to regenerate carbon adsorber

S. Adsorption time per adsorption bed

T. Inlet concentration lbs/hr	U. Outlet concentration lbs/hr	V. Overall efficiency (%)

W. Please supply any additional data to thoroughly evaluate the control equipment.

Section C — Control Equipment, Continued

10. ABSORPTION EQUIPMENT (IF APPLICABLE)

N/A

A. Manufacturer	B. Type	C. Model No.

D. Volume of gases handled (ACFM)	E. Design inlet volume (ACFM)	F. Inlet temperature (°F)

G. Configuration
☐ Countercurrent ☐ Cross flow ☐ Cocurrent flow

H. Pressure drop (water gage)

I. Absorbent type and concentration

J. Retention time (sec)

K. Inlet concentration	L. Outlet concentration	M. Overall efficiency (%)

N. Describe pH and/or other monitoring and controls

O. Type packing and size (If applicable)	P. Height of packing (ft)	Q. No. of trays	R. Diameter of tower (ft)

S. Attach equilibrium data for absorption (If applicable)

11. OTHER CONTROL EQUIPMENT (IF APPLICABLE)

A. Manufacturer	B. Type	C. Model No.

D. Volume of gases handled (ACFM)	E. Design inlet volume (ACFM)	F. Inlet temperature (°F)

G. Inlet concentration (lbs/hr or gr/SCF Dry)	H. Outlet concentration (lbs/hr or gr/SCF Dry)	I. Overall efficiency (%)

J. Attach particle size efficiency curve or other efficiency information

K. Describe fully giving important parameters and method of operation

Section C — Control Equipment, Continued

11. COSTS

A. Cost of all control equipment including installation costs (List individual controls separately)

$800.00

B. Estimated annual operating costs of control equipment only

$1,000.00

12. Describe modifications to control equipment in detail

NONE

13. Describe in detail the method of dust removal from the air cleaning device and methods of controlling fugitive emissions from dust removal, handling and disposal.

Dust is not removed from system but bags are shaken and dust is emptied back into the silo.

14. Does air cleaning device employ hopper heaters, hopper vibrators or hopper level detectors? If so describe.

N/A

15. Attach manufacturer's performance guarantees and/or warrantees for each of the major components of the control system (or complete system).

N/A

16. Attach the maintenance schedule for the control equipment and any part of the process equipment that if in disrepair would increase the air contaminant emissions. Periodic maintenance reports are to be submitted to the Department.

N/A

17. Attach any and all additional information necessary to thoroughly evaluate the control equipment.

NONE