Fernald Environmental

FERMCO
Restoration Management Corporation

(now renamed Fluor Daniel Fernald)
P. O. Box 538704 Cincinnati, Ohio 45253-8704 (513) 648-3000

July 21, 1997

Fernald Environmental Management Project
Letter No. C:FCDP:97-0023

Mr. Peter Sturdevant, Compliance Specialist
Air Quality Management
Hamilton County Department of Environmental Services
1632 Central Parkway
Cincinnati, Ohio 45210

Dear Mr. Sturdevant:

PERMIT TO OPERATE APPLICATION FOR THE RADIOLOGICALLY CONTAMINATED LAUNDRY SYSTEM AND THE NON-RADIOLOGICALLY CONTAMINATED LAUNDRY SYSTEM AT THE FEMP OEPA PREMISE NO. 1431110128/P274, P275

Enclosed are Permit to Operate (PTO) applications for the two Natural Gas Fired Dryer Systems.

The PTO Terms and Conditions of the radiologically contaminated clothes dryer system (P274) currently list a stack monitoring system for radionuclide and particulate emissions. Since the monitor was installed to comply with only the FEMP's internal monitoring requirements which have since changed and not due to regulatory requirements, we request that the stack monitoring requirement be deleted from the renewed PTO for source P274.

Continuous monitoring of P274 has not detected radiological emissions of any significance. Uranium emissions from P274 for 1996 were 2.75E-08 Ci and 8.81E-12 Ci for 1995. The analytical results used in estimating these emissions were often below the detection limit of the analytical method. A Method 5 stack sample performed in July 1995 had particulate emissions of 0.026 lb/hr and a Total Uranium emission that was below the analytical detection limit. Air Dispersion Modeling using CAP88PC estimates an EDE to the maximally exposed individual of 1.0E-05 mrem.

We will continue to include the radiologically contaminated clothes dryers stack in periodic confirmatory measurements to comply with the NESHAP subpart H regulations listed in 40 CFR 61.

If you have any questions concerning this application, please contact Tim Miller of my staff at (513) 648-4198.

Sincerely,

Woodrow B. Jameson
Vice President
Facility Closure & Demolition Projects

WBJ:TEM:mhv
Enclosure

c: With Enclosure

J. C. McDonald, FDF/MS59
M. S. Hundley, FDF/MS67
E. P. Skintik, DOE-FEMP/MS45
T. J. Walsh, FDF/MS65-2
AR Coordinator/MS78
File Record Storage Copy 108.6
PSI(EC) Files

Without Enclosure

L. C. Goidell, FDF/MS65-2
E. Pasko, DOE-FEMP/MS45
P. B. Spotts, FDF/MS65-2
C. L. Turner, FDF/MS44

FOR OHIO EPA USE ONLY: - 882
DATE APPLICATION RECEIVED: _____
FACILITY ID: _____
EMISSIONS UNIT(s) ID(s): _____

OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA)
APPLICATION FOR STATE PERMIT(S) TO OPERATE AN EMISSIONS UNIT (S)

(Do not complete application without reading instructions.)

1. Facility Information:

   a. Applicant Name: U.S. Dept. of Energy

   b. Facility Name: Fernald Environmental Management Project

   c. Facility Location:

      Street: 7400 Willey Road

      City/Village/Township: Fernald

      County: Hamilton Zip Code: 45030

   d. Primary Facility Contact Name: Lewis C. Goidell

   e. Primary Facility Contact Mailing Address/Phone Number:

      Street: P.O. Box 538704

      City/Village/Township: Cincinnati

      State: Ohio Zip Code: 45239-8704

      Phone Number: (513) 648-4124

   f. OEPA Facility Identification (ID) Number (10-digit number): 1431110128

   g. Facility Primary Standard Industrial Classification (SIC) Code Number (4-digit number): 4953

   h. Authorized Individual Signature:

      I, being the individual specified in Ohio Administrative Code (OAC) rule 3745-35-02(B), hereby apply for Permit(s) to Operate (PTO) the emissions unit(s) described herein.

      Woodrow B. Jameson
      Authorized Individual's Name (Please type or print)

      Authorized Individual's Signature — Date Signed: 7/21/97

      Vice President Facilities Closure & Demolition Projects
      Title

Operation of an emissions unit without an effective permit to operate, variance to operate, or registration status is prohibited by OAC rule 3745-35-02 and Section 3704.05 of the Ohio Revised Code.

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I. Identification of Emissions Unit(s) at Facility (Identify the following information for each emissions unit(s) for which this application is being completed. List each emissions unit on a separate line. Mark "NE" (not established) if no OEPA ID (Identification) has been assigned to an emissions unit):

NOTE: Do not list emissions units that have been registered by the Ohio EPA in accordance with OAC rule 3745-35-05(B).

4-Digit OEPA ID	Company ID for Emissions Unit
P274	DRYERS FOR RADIOLOGICALLY CONTAMINATED CLOTHING
P275	DRYERS FOR NON-RADIOLOGICALLY CONTAMINATED CLOTHING

(If additional entries for emissions units are needed, copy this page and attach the additional page(s) with additional emissions units entered and indicate below.)
Check here if additional copies of this page are attached: _____

2. Emissions Unit Information (make a copy of pages 3-6 and attach for each emissions unit listed on page 2):

a. OEPA Emissions Unit ID (4-digit) number: P274

b. Company ID for Emissions Unit: P274 Radiologically contaminated clothes dryer

c. Emissions Unit Activity Description: Fuel burning operations and laundry operations

d. Equipment Description: Three 0.37 MMBTU Gas fired cloths dryers

e. Initial Installation Date (month/year): 02/89
Initial Startup Date (month/year): 09/89
Most Recent Modification Date (if applicable)
(as defined in OAC rule 3745-31-01(J)) (month/year): 06/93

f. Emissions Information:

Complete the following table for each criteria air pollutant proposed to be emitted from the emissions unit at a rate greater than one ton/year (list each pollutant on a separate line), and for any pollutant for which an emissions limit has been established (per a state or federal regulation or Permit to Install) which limits air emissions of the pollutant to less than one ton/year.

Pollutant Name	Proposed Maximum Hourly Emissions (pounds/hour)	Proposed Maximum Annual Emissions (tons/year)
Particulate	0.177 lb/hr for 3 dryers	Total for 3 dryers 0.78 tons/yr
Uranium	1.5E-07 lb/hr	Total for 3 dryers 6.5E-07 tons/yr

(If additional pollutants need to be identified, copy this page and attach the additional page(s). Check here ___ if additional copies of this page are attached.)

g. Proposed Operating Schedule:

Average: Hours/Day: 24 Hours/Year: 8760

Maximum: Hours/Day: 24 Hours/Year: 8760

h. Control Equipment Information:

Provide the following for each add-on emissions control device to be employed for the emissions unit:

Check here _____ if no emissions control device is proposed to be employed for the emissions unit and proceed to item "I" below.

Control Equipment Type Codes:

A.	Fabric Filter/Baghouse	G.	Condenser
B.	Electrostatic Precipitator	H.	Carbon Adsorber
C.	Catalytic Incinerator	I.	Concentrator
D.	Thermal Incinerator	J.	Cyclone/Multiclone
E.	Flare	K.	Settling Chamber
F.	Wet Scrubber	L.	Other, describe: HEPA filtration System

Item	Control Device #1	Control Device #2	Control Device #3
i. Type (see above codes)	L		
ii. Configuration	tertiary		
iii. Manufacturer's Name	C.S.C.		
iv. Company ID	3H3W-012P-1FB-35		
v. Month/Year Installed	06/93		
vi. Pollutant(s) Controlled	Part./radio.		
vii. Operating Capture Efficiency (%)	99.9		
viii. Design Control Efficiency (%)	99.97		
ix. Operating Control Efficiency (%)	99.9		
x. Inlet Gas Flow (acfm)	6750		
xi. Inlet Gas Temperature (°F)	N/A		
xii. Maximum Controlled Emissions Rate for Each Pollutant Controlled (lb/hr, grain/dscf, or ppmv)	0.033 lb/hr		

xiii. Supplemental control device information (see instructions)

Control Device #1 Pressure drop of 9.5" W.G.

Control Device #2 _____

Control Device #3 _____

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l. Emissions Egress Point(s) Information: (Provide the following information for each point at which emissions are released into the ambient air from the emissions unit and list each individual egress point on a separate line.)

Egress point description codes:

A. Vertical stack (unobstructed)
B. Horizontal/downward stack
C. Vertical stack (obstructed)
D. Fugitive

Company ID for Egress Point	Description Code
EP-P274-01	A

j. A Process or Activity Flow Diagram must be submitted for each emissions unit included in the application. Include the OEPA Emission Unit ID and company identification for the emissions unit on each process or activity flow diagram submitted. Show entry and exit points of all raw materials, intermediate products, by-products and finished products. Label all materials, including air pollution emissions and other waste materials and identify material and exhaust gas flow rates. Label the process equipment, emissions control equipment, and emissions egress points utilized.

k. Continuous emissions monitoring equipment: (Provide the following information if any continuous emission monitoring equipment is employed for any egress point(s) associated with this emissions unit.)

NOTE: See explanation in

Company ID for Egress Point	Type of Monitor	Manufacturer/ Model No.	Serial No.	Pollutant(s) Monitored

FOR OHIO EPA USE ONLY
DATE APPLICATION RECEIVED:_____
FACILITY ID:_____

EMISSIONS ACTIVITY CATEGORY FORM
PROCESS OPERATION

OEPA EMISSIONS UNIT ID _P274_____ (if established)

[Note: If there is more than one end product for this process, copy and complete this page for each additional product (see instructions).]

1. End product of this process: __Dried Contaminated Clothing_____

2. Hourly production rates (indicate appropriate units):

   Average production: _104 #/hr_____
   Maximum production: _450 #/hr_____

3. Projected maximum annual production (indicate appropriate units):_1971 tons/yr_____

4. Actual annual production (indicate appropriate units): __1971 tons/yr_____

5. Type of operation:

   ☐ continuous

   X batch; if batch indicate:
   minimum cycle time _60 _____ minutes
   minimum time between cycles___varies minutes

6. Materials used in process at maximum hourly production rate:

Material	Physical State at Standard Conditions	Principle Use	Amount (lbs/hr)
washed contaminated clothing	solid	dry contaminated clothing	450

FOR OHIO EPA USE ONLY 883
DATE APPLICATON RECEIVED: _____
FACILITY ID: _____

EMISSIONS ACTIVITY CATEGORY FORM
FUEL BURNING OPERATION

OEPA EMISSIONS UNIT ID _P274_____ (if established)

1. Input capacities (million btu/hr): Rated: 1.11 _____ Note: Indicate units if different
   Maximum: _1.11_____
   Normal: __1.11_____
   Output capacities (lbs steam/hr): Rated: __N/A_____
   Maximum: _N/A_____
   Normal: _N/A_____

   Note: Only provide output capacities for steam producing operations.

2. Percent used for: Space heat _____% Process __100____% Power _____%

3. Type of fuel fired (check one or more): ☐ coal ☐ oil X natural gas
   ☐ wood ☐ LPG ☐ other (specify) _____

4. Type of draft (check one): X natural ☐ induced ☐ forced

5. Type of combustion monitoring (check one or more):
   ☐ fuel/air ratio ☐ oxygen ☐ opacity ☐
   X other (describe) _NONE_____

COAL-FIRED UNITS

6. Type of coal firing (check one):
   ☐ hand-fired ☐ underfeed stoker
   ☐ traveling grate ☐ chain grate
   ☐ spreader stoker ☐ cyclones
   ☐ pulverized-dry bottom ☐ pulverized-wet bottom
   ☐ other (describe) _____

7. Fly ash reinjection (check one): ☐ yes ☐ no

OIL-FIRED UNITS

8. Type of oil (check one or more): ☐ no. 2 ☐ no. 6
   ☐ other (describe) _____

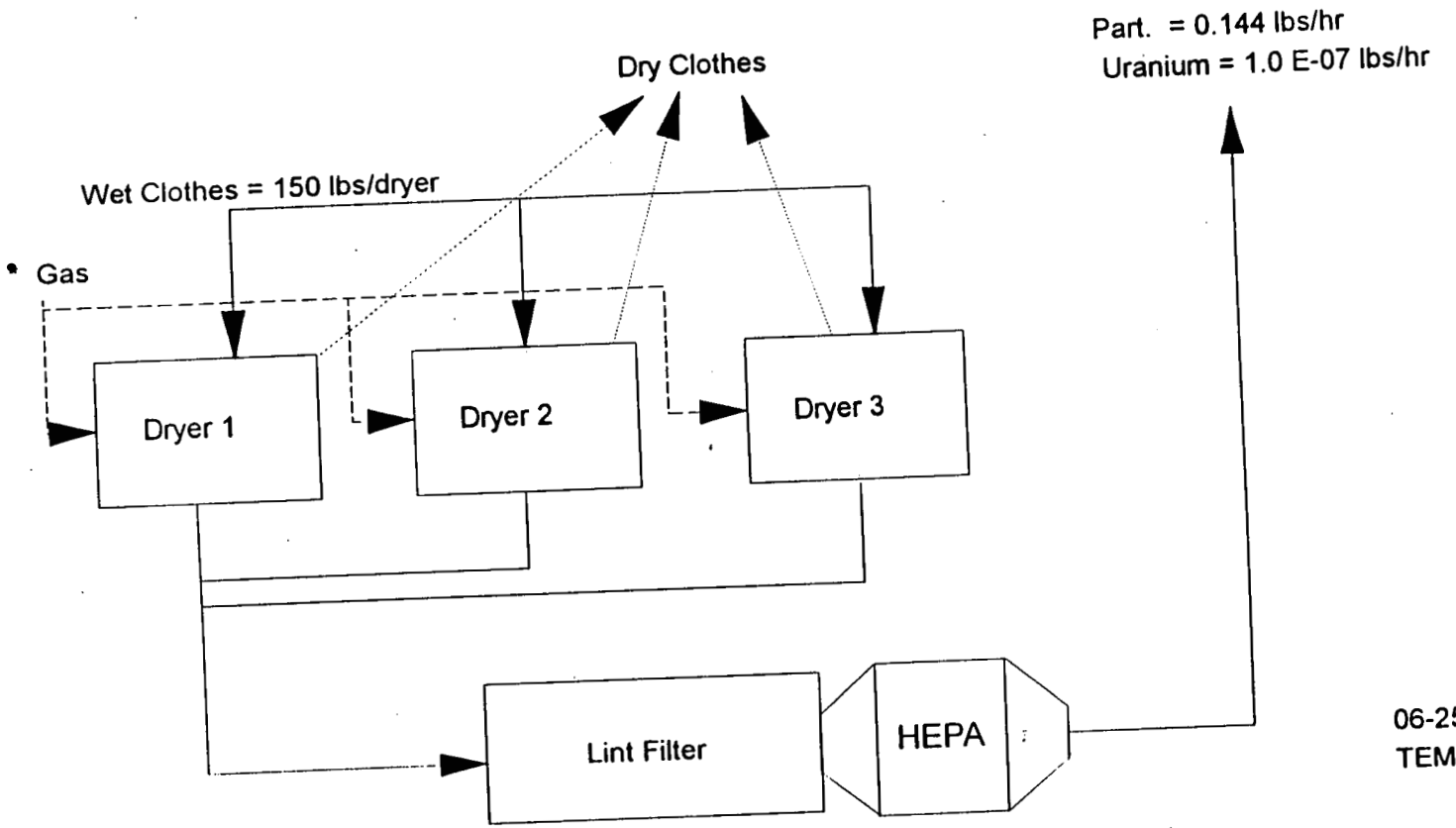
9. Type of atomization (check one or more): ☐ oil pressure ☐ steam pressure
   ☐ compressed air ☐ rotary cup
   ☐ other (describe) _____

10. Oil preheater (check one): ☐ yes ☐ no If yes, indicate temperature _____°F

1. Complete the following table for fuels identified in item 3:

Fuel	Heat Content (BTU/unit)	% Ash	% Sulfur	Fuel Usage		
				Estimated Maximum Per Year	Normal Per Hr.	Max. Per Hr.
Coal	BTU/lb			tons	lbs	lbs
Gas	1050 BTU/cu ft	0.01	0.05	9.26 MM cu ft	1057 cu ft	1057 cu ft
Oil	BTU/gal			gal	gal	gal
Wood	BTU/lb			tons	lbs	lbs
LPG	BTU/gal			gal	gal	gal
Other						

PROCESS FLOW DIAGRAM
EU-P274-96
RADIOLOGICAL CONTAMINATED DRYERS



* indirect gas firing results in 0.005 lbs/hr particulate. Total to atmosphere (gas + HEPA exhaust) = 0.149 lbs/hr part.

2. Emissions Unit Information (make a copy of pages 3-6 and attach for each emissions unit listed on page 2):

a. OEPA Emissions Unit ID (4-digit) number: P275

b. Company ID for Emissions Unit: P275 Non-radiologically contam. clothes dryer

c. Emissions Unit Activity Description: Fuel burning operations and laundry operations

d. Equipment Description: Three 2.00 MMBTU Gas fired cloths dryers

e. Initial Installation Date (month/year): 02/89
Initial Startup Date (month/year): 09/89
Most Recent Modification Date (if applicable)
(as defined in OAC rule 3745-31-01(J)) (month/year): _____

f. Emissions Information:

Complete the following table for each criteria air pollutant proposed to be emitted from the emissions unit at a rate greater than one ton/year (list each pollutant on a separate line), and for any pollutant for which an emissions limit has been established (per a state or federal regulation or Permit to Install) which limits air emissions of the pollutant to less than one ton/year.

Pollutant Name	Proposed Maximum Hourly Emissions (pounds/hour)	Proposed Maximum Annual Emissions (tons/year)
Particulate	0.24 lb/hr for 3 dryers	Total for 3 dryers 1.05 tons/yr

(If additional pollutants need to be identified, copy this page and attach the additional page(s). Check here ___ if additional copies of this page are attached.)

g. Proposed Operating Schedule:

Average: Hours/Day: 24 Hours/Year: 8760

Maximum: Hours/Day: 24 Hours/Year: 8760

h. Control Equipment Information:

Provide the following for each add-on emissions control device to be employed for the emissions unit:

Check here _____ if no emissions control device is proposed to be employed for the emissions unit and proceed to item "I" below.

Control Equipment Type Codes:

A. Fabric Filter/Baghouse	G. Condenser
B. Electrostatic Precipitator	H. Carbon Adsorber
C. Catalytic Incinerator	I. Concentrator
D. Thermal Incinerator	J. Cyclone/Multiclone
E. Flare	K. Settling Chamber
F. Wet Scrubber	L. Other, describe: lint filter

Item	Control Device #1	Control Device #2	Control Device #3
i. Type (see above codes)	L		
ii. Configuration	primary		
iii. Manufacturer's Name	Milner		
iv. Company ID	N/A		
v. Month/Year Installed	02/89		
vi. Pollutant(s) Controlled	Particulate		
vii. Operating Capture Efficiency (%)	~75		
viii. Design Control Efficiency (%)	~75		
ix. Operating Control Efficiency (%)	~75		
x. Inlet Gas Flow (acfm)	5200		
xi. Inlet Gas Temperature (^{o}F)	N/A		
xii. Maximum Controlled Emissions Rate for Each Pollutant Controlled (lb/hr, grain/dscf, or ppmv)	0.211 lb/hr		

xiii. Supplemental control device information (see instructions)

Control Device #1 Pressure drop of 1.5" W.G.

Control Device #2 _____

Control Device #3 _____

i. Emissions Egress Point(s) Information: (Provide the following information for each point at which emissions are released into the ambient air from the emissions unit and list each individual egress point on a separate line.)

Egress point description codes:

A. Vertical stack (unobstructed)
B. Horizontal/downward stack
C. Vertical stack (obstructed)
D. Fugitive

Company ID for Egress Point	Description Code
EP-P275-01	C

j. A Process or Activity Flow Diagram must be submitted for each emissions unit included in the application. Include the OEPA Emission Unit ID and company identification for the emissions unit on each process or activity flow diagram submitted. Show entry and exit points of all raw materials, intermediate products, by-products and finished products. Label all materials, including air pollution emissions and other waste materials and identify material and exhaust gas flow rates. Label the process equipment, emissions control equipment, and emissions egress points utilized.

k. Continuous emissions monitoring equipment: (Provide the following information if any continuous emission monitoring equipment is employed for any egress point(s) associated with this emissions unit.)

Company ID for Egress Point	Type of Monitor	Manufacturer/ Model No.	Serial No.	Pollutant(s) Monitored

FOR OHIO EPA USE ONLY
DATE APPLICATION RECEIVED: [redacted] 883
FACILITY ID: _____

EMISSIONS ACTIVITY CATEGORY FORM
PROCESS OPERATION

OEPA EMISSIONS UNIT ID _P275_____ (if established)

[Note: If there is more than one end product for this process, copy and complete this page for each additional product (see instructions).]

1. End product of this process: __Dried Non-Contaminated Clothing_____

2. Hourly production rates (indicate appropriate units):

   Average production: _660 #/hr_____
   Maximum production: _660 #/hr_____

3. Projected maximum annual production (indicate appropriate units): _2891 tons/yr_____

4. Actual annual production (indicate appropriate units): __2891 tons/yr_____

5. Type of operation:

   ☐ continuous

   X batch; if batch indicate:
   minimum cycle time _60 _____ minutes
   minimum time between cycles___varies minutes

6. Materials used in process at maximum hourly production rate:

Material	Physical State at Standard Conditions	Principle Use	Amount (lbs/hr)
washed non-contaminated clothing	solid	dry non-contaminated clothing	660

FOR OHIO EPA USE ONLY
DATE APPLICATON RECEIVED:_____
FACILITY ID: _____

EMISSIONS ACTIVITY CATEGORY FORM
FUEL BURNING OPERATION

OEPA EMISSIONS UNIT ID _P275_____ (if established)

1. Input capacities (million btu/hr): Rated: 6.00 _____ Note: Indicate units if different
   Maximum: _6.00_____
   Normal: __6.00_____
   Output capacities (lbs steam/hr): Rated: __N/A_____
   Maximum: _N/A_____
   Normal: _N/A_____

   Note: Only provide output capacities for steam producing operations.

2. Percent used for: Space heat _____% Process __100____% Power _____%

3. Type of fuel fired (check one or more): ☐ coal ☐ oil X natural gas
   ☐ wood ☐ LPG ☐ other (specify) _____

4. Type of draft (check one): X natural ☐ induced ☐ forced

5. Type of combustion monitoring (check one or more):
   ☐ fuel/air ratio ☐ oxygen ☐ opacity ☐
   X other (describe) _NONE_____

COAL-FIRED UNITS

6. Type of coal firing (check one):
   ☐ hand-fired ☐ underfeed stoker
   ☐ traveling grate ☐ chain grate
   ☐ spreader stoker ☐ cyclones
   ☐ pulverized-dry bottom ☐ pulverized-wet bottom
   ☐ other (describe) _____

7. Fly ash reinjection (check one): ☐ yes ☐ no

OIL-FIRED UNITS

8. Type of oil (check one or more): ☐ no. 2 ☐ no. 6
   ☐ other (describe) _____

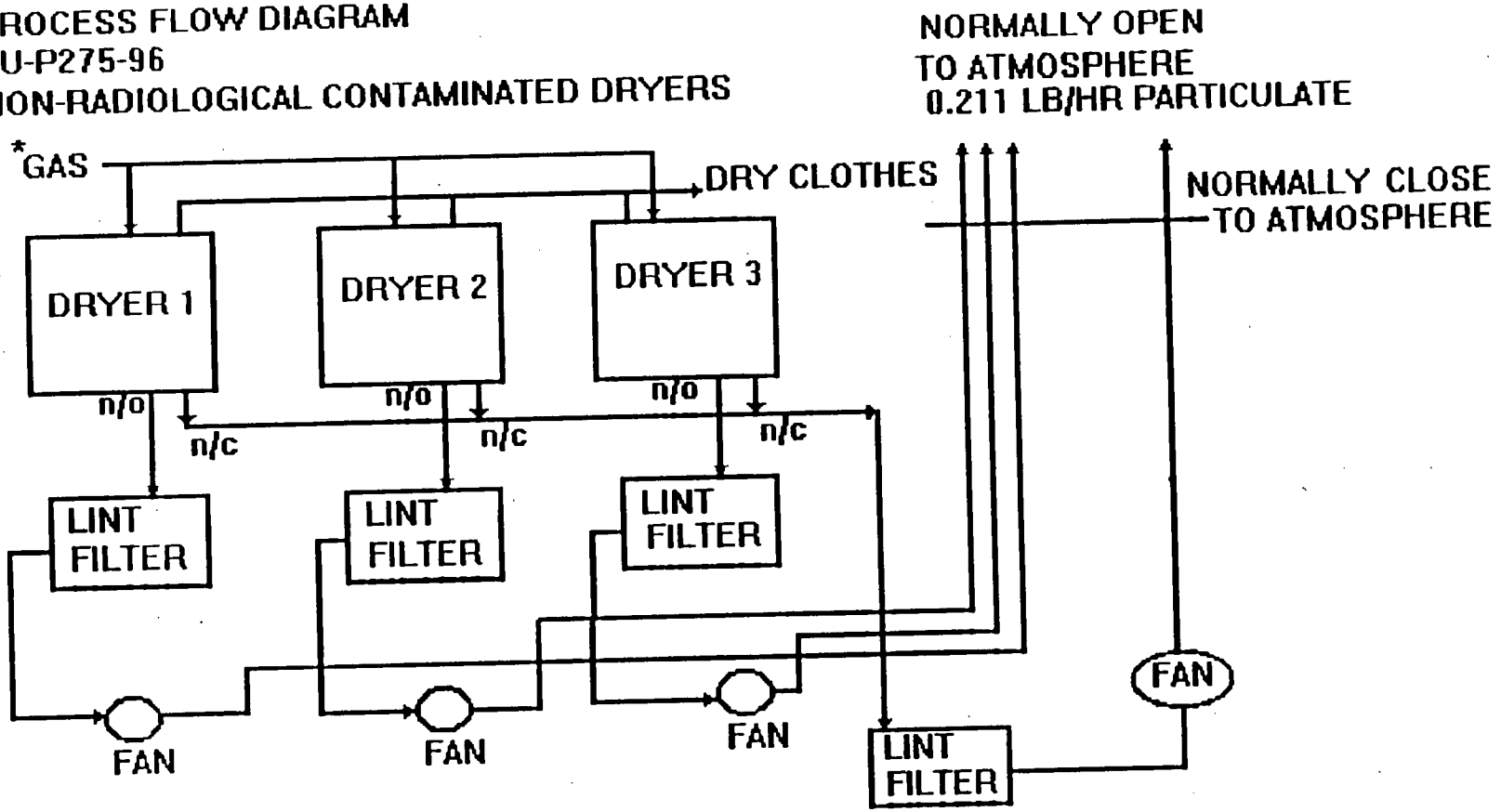
9. Type of atomization (check one or more):
   ☐ oil pressure ☐ steam pressure
   ☐ compressed air ☐ rotary cup
   ☐ other (describe) _____

10. Oil preheater (check one): ☐ yes ☐ no If yes, indicate temperature _____°F

1. Complete the following table for fuels identified in item 3:

Fuel	Heat Content (BTU/unit)	% Ash	% Sulfur	Fuel Usage		
				Estimated Maximum Per Year	Normal Per Hr.	Max. Per Hr.
Coal	BTU/lb			tons	lbs	lbs
Gas	1050 BTU/cu ft	0.01	0.05	50.1 MM cu ft	5714 cu ft	5714 cu ft
Oil	BTU/gal			gal	gal	gal
Wood	BTU/lb			tons	lbs	lbs
LPG	BTU/gal			gal	gal	gal
Other						

PROCESS FLOW DIAGRAM
EU-P275-96
NON-RADIOLOGICAL CONTAMINATED DRYERS



n/o - normally open
n/c - normally closed
* indirect gas firing results in 0.029 lbs/hr particulate. Total to atmophere (gas + HEPA exhaust) = 0.24 lbs/hr particulate.

2

l. Federally Enforceable Emissions Limits: (Provide the following information only if applying for federally enforceable limits, per OAC rule 3745-35-07, for the emissions unit.)

Check here _____ if applying, per OAC rule 3745-35-07, for federally enforceable limits as part of this permit issuance.

If applying for such limits, attach a separate piece of paper providing the following information:

i. identification of the proposed operation/production limitation(s) for the emissions unit(s);

ii. identification of the proposed short term emission limit for each pollutant, corresponding to the proposed operational/production limit;

iii. proposed method(s), including identification of applicable methods, including any contained within 40 CFR, Parts 51 and 60, which will be utilized to demonstrate compliance with the federally enforceable limits; and

iv. a summary of the total facility "potential to emit" (tons/year) for each applicable pollutant (PM, NO_x, SO_2, CO, VOC, HAPs, etc.) as of implementation of the proposed federally enforceable limits (include supporting calculations).

m. Confidentiality Claims:

Check here _____ if requesting any information included in this application for this emissions unit to be claimed as a trade secret per Ohio Revised Code (ORC) 3704.08:

If a claim is being made, attach a separate piece of paper to this application and include the following information to justify the claim:

i. identification of the specific information (item # and description) submitted within the application for the emissions unit which is being claimed as a trade secret;

ii. an explanation of why the information specified is indeed a trade secret;

iii. confirmation that the alleged trade secret is not revealed by inspection or analysis of any marketed product (example: "reverse chemistry"); and

iv. identification of security measures which have been adopted to ensure secrecy, and confirmation that reasonable or enforceable agreements or other confidential relationships prohibiting use or disclosure of the secret existed with those whom the secret was revealed (example: employee secrecy agreements and/or contractor agreements).

Finally, if a confidentiality claim is being submitted, two copies of the application need to be submitted, one completed version with all the information requested and one "sanitized" version containing all information requested except that information upon which a trade secret claim is being made.

n. Emissions Activity Category Forms:

The appropriate Emissions Activity Category (EAC) form(s) must be completed and attached for each emission unit. At least one complete EAC form must be submitted for each emission unit for the application to be considered complete. Please identify each EAC form completed and being submitted with this application for this emissions unit:

EAC form ID number (see instructions for list of EAC forms)

i. 3101 (P274)
ii. 3100 (P274)
iii. 3101 (P275)
iv. 3100 (P275)