R-6

DSE-007-88-

COMMONWEALTH of VIRGINIA

State Air Pollution Control Board

ROOM 801, NINTH STREET OFFICE BUILDING
POST OFFICE BOX 10089
RICHMOND, VIRGINIA 23240
(804) 786-2378

January 7, 1988

Mr. Howard B. Phillips
President
Dominion Terminal Associates
P. O. Box 967A
Newport News, VA 23607

Location: Newport News, Virginia
Registration No: 60997
County-Plant No: 2120-0074

Dear Mr. Phillips:

Attached is an amended page 2 of your November 24, 1987 permit letter. Specific Condition Number 6 has been changed to omit the requirement for a surfactant to be used with the water in the wet suppression system for the coal storage piles.

This requirement was inadvertently included in your permit. The remainder of the permit is unchanged and fully enforceable.

For questions concerning this amendment, contact the Director, Region VI at (804) 446-4994.

Sincerely,

Richard L. Cook

Richard L. Cook
Executive Director

RLC/edb

Attachment

cc: Director, Division of Source Evaluation, CCT
Director, Division of Computer Services

State Air Pollution Control Board
Old Greenbrier Village - Suite A
2010 Old Greenbrier Road
Chesapeake, VA 23320-2168

Superceded

PART I - SPECIFIC CONDITIONS - the regulatory reference and authority for each condition is listed in parenthesis () after each condition.

1. Dominion Terminal Associates is located in Newport News, Virginia.

2. Construction and operation shall be conducted as proposed in the permit application dated August 17, 1981 and amended on August 25, 1981. The permit application and supporting documents (see Document List) are a part of this permit.
(Section 120-02-11 of State Regulations)

3. The equipment to be installed consists of:

   - rotary rail car dumper and other coal handling and storage equipment.

   - a permanent wet suppression system which can completely wet all coal storage piles

4. The yearly throughput of coal shall not exceed 25 x 10^6 tons.
(Section 120-02-11 of State Regulations)

5. The maximum quantity of coal in storage at any one time shall not exceed 1.0 x 10^6 tons.
(Section 120-02-11 of State Regulations)

6. Fugitive coal dust emissions from the storage piles shall be controlled by a wet suppression system capable of wetting the entire coal storage area.
(Section 120-08-01 F of State Regulations)

7. Coal dust emissions from the rotary dumper and transfer points shall be controlled by wet suppression which shall include the use of a surfactant.
(Section 120-08-01 F of State Regulations)

8. Coal dust emissions from the surge silos shall be controlled by baghouses at least 99 percent efficient.
(Section 120-05-04 of State Regulations)

9. Stack testing shall not be required due to the existence of adequate data to allow the SAPCB staff to make the technical assessment that the source can operate in compliance. An opacity test shall be conducted on all emission points. The details of the test shall be arranged with the Director, Region VI.
(Section 120-08-01 H5 of State Regulations)

10. Opacity at all emission points shall be limited to less than 5 percent.
(Section 120-02-11 of State Regulations)

DSE-048-87

COMMONWEALTH of VIRGINIA

State Air Pollution Control Board

ROOM 801, NINTH STREET OFFICE BUILDING
POST OFFICE BOX 10089
RICHMOND, VIRGINIA 23240
(804) 786-2378

November 24, 1987

Mr. Howard B. Phillips, President
Dominion Terminal Associates
P. O. Box 967A
Newport News, VA 23607

Location: Newport News, Virginia
Registration No: 60997
County-Plant No: 2120-0074

Dear Mr. Phillips:

Attached is a revised permit to construct and operate a coal storage and export facility at your terminal in Newport News, Virginia in accordance with the provisions of the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution.

In the course of evaluating the application and arriving at a final decision to approve the project, the Virginia State Air Pollution Control Board (SAPCB) deemed the application complete on August 28, 1981. This revised permit replaces any pre-existing Virginia State Air Pollution Control Board (SAPCB) permits.

In the course of evaluating the application and arriving at a final decision to approve the project, the SAPCB deemed the application complete on August 28, 1981.

This approval to construct and operate shall not relieve Dominion Terminal Associates of the responsibility to comply with all other local, State and Federal air pollution control regulations.

If you have any questions concerning this permit, please contact the Director, Region VI, at (804) 466-4994.

Sincerely,

for John A. Daniel, Jr.
Richard L. Cook
Executive Director

RLC/da
Attachment

cc: Director, Division of Source Evaluation, CCT
Director, Division of Computer Services

State Air Pollution Control Board
Old Greenbrier Village - Suite A
2010 Old Greenbrier Road
Chesapeake, VA 23320-2168

DSE-048-87

COMMONWEALTH of VIRGINIA

State Air Pollution Control Board

ROOM 801, NINTH STREET OFFICE BUILDING
POST OFFICE BOX 10089
RICHMOND, VIRGINIA 23240
(804) 786-2378

PERMIT TO CONSTRUCT AND OPERATE

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

Dominion Terminal Associates
P. O. Box 967A
Newport News, Virginia 23607
Registration No. 60997
County-Plant No. 2120-0074

is authorized to construct and operate

a coal storage and export facility

located at

Pier 11, Harbor Road
Newport News, Virginia

in accordance with the Specific Conditions (emission limitations, monitoring and testing requirements) and the General Conditions set forth in Parts I and II herein.

Approved this twenty-fourth day of November, 1987.

for John M. Daniel
Richard L. Cook
Executive Director

Permit Consists of 17 pages. Including Appendix A.
Part I - Specific Conditions 1 to 19.
Part II - General Conditions 1 to 16.
Part III - Document List, 3 items.

PART I - SPECIFIC CONDITIONS - the regulatory reference and authority for each condition is listed in parenthesis () after each condition.

1. Dominion Terminal Associates is located in Newport News, Virginia.

2. Construction and operation shall be conducted as proposed in the permit application dated August 17, 1981 and amended on August 25, 1981. The permit application and supporting documents (see Document List) are a part of this permit.
(Section 120-02-11 of State Regulations)

3. The equipment to be installed consists of:

   - rotary rail car dumper and other coal handling and storage equipment.

   - a permanent wet suppression system which can completely wet all coal storage piles

4. The yearly throughput of coal shall not exceed 25 x 10^6 tons.
(Section 120-02-11 of State Regulations)

5. The maximum quantity of coal in storage at any one time shall not exceed 1.0 x 10^6 tons.
(Section 120-02-11 of State Regulations)

6. Fugitive coal dust emissions from the storage piles shall be controlled by a wet suppression system capable of wetting the entire coal storage area. The water utilized in this system shall include a surfactant.
(Section 120-08-01 F of State Regulations)

7. Coal dust emissions from the rotary dumper and transfer points shall be controlled by wet suppression which shall include the use of a surfactant.
(Section 120-08-01 F of State Regulations)

8. Coal dust emissions from the surge silos shall be controlled by baghouses at least 99 percent efficient.
(Section 120-05-04 of State Regulations)

9. Stack testing shall not be required due to the existence of adequate data to allow the SAPCB staff to make the technical assessment that the source can operate in compliance. An opacity test shall be conducted on all emission points. The details of the test shall be arranged with the Director, Region VI.
(Section 120-08-01 H5 of State Regulations)

10. Opacity at all emission points shall be limited to less than 5 percent.
(Section 120-02-11 of State Regulations)

11. The wet suppression system for the coal storage piles shall be implemented as specified in Appendix A or by any other procedure as may be approved by the Board prior to use. Such approval shall be contingent on adequate documentation that any alternative procedure shall achieve at least as high an efficiency as Appendix A. Requests for changes in procedure shall be accompanied by an explanation of the proposed changes and the anticipated effect they shall have. These requests, if approved by the State Air Pollution Control Board, shall be subject to a test and evaluation procedure prior to being accepted as permanent changes to the control procedures.
(Section 120-02-11 of State Regulations)

12. Each spray cycle shall attain 100 percent coverage of the coal storage area and shall consist of at least 20,000 gallons of water, except for assurance cycles as noted in Appendix A.
(Section 120-05-0403 of State Regulations)

13. One person each shift shall be designated as responsible for compliance with the procedures of Appendix A. Required actions in support of these procedures shall take precedence over routine coal handling procedures.
(Section 120-02-11 of State Regulations)

14. Operating personnel at Dominion Terminal Associates shall be informed of their company's responsibilities under this permit. With respect to compliance with the permit, operating personnel shall be informed by their supervisors that they, as individuals, as well as their employer are responsible for compliance with the conditions of this permit to the extent that their failure to perform their individual duties and responsibilities lead to noncompliance with the conditions of this permit. The following actions are considered as detrimental to the control of coal emissions, but are not limited to:

a. Failure to stop any coal movement operation when it becomes known that installed air pollution control systems are inoperative and would cause excess emissions.

b. Failure to stop a coal movement operation when it becomes known that pieces of coal handling equipment needed for that operation are malfunctioning or operating significantly below designated specifications.

c. Failure of equipment operators to take immediate precautions to preclude fugitive dust emissions from the operation of bulldozers, front-end loaders, automobiles or trucks (i.e., through the use of water suppressant to control the dust, or limiting the speed of movement to below 10 miles per hour).

d. Failure of personnel to give precedence to controlling fugitive dust emissions over routine coal operations to personnel designated with the responsibility of controlling fugitive emissions.
(Section 120-02-11 of State Regulations)

15. Whenever Dominion Terminal Associates is using a particular piece of coal handling equipment (e.g. a dumper, a conveyor, etc.), it shall utilize the wet suppression controls for that piece of equipment unless the use of such equipment would cause a safety hazard or damage to the equipment from freezing.
(Section 120-02-11 of State Regulations)

16. Any significant malfunction of equipment that significantly affects the operation of the wet suppression system shall be reported to the State Air Pollution Control Board by telephone as soon as practicable. In the event of such malfunctions, auxiliary watering devices shall be used until such time as the regular equipment is repaired. A log of such action and corrective action shall be maintained for evaluation of impact.
(Section 120-02-11 of State Regulations)

17. All coal storage piles shall be truncated and compacted so as to minimize fugitive coal dust emissions.
(Section 120-05-0403 of State Regulations)

18. The representatives of Dominion Terminal Associates shall meet on a regular basis to discuss the implementation of the conditions of this permit.
(Section 120-02-11 of State Regulations)

19. Copies of this permit shall be available for reference at the facility and operating personnel shall be apprised and trained in the portions of the permit related to their duties and the need to control coal emissions.
(Section 120-02-11 of State Regulations)

PART II - GENERAL CONDITIONS

1. Within 10 days after receiving this permit the permittee shall notify the Board (Director, Region VI) in writing of the estimated start-up date of the permitted facility. This notification is for administrative purposes only and need not be a firm date.
(Section 120-02-11 of State Regulations)

2. Quarterly reports on the progress of construction shall be submitted to the Director, Region VI, beginning December 30, 1981.
(Section 120-02-11 of State Regulations)

3. The permittee shall furnish written notification to the Board (Director, Region VI) of:

   a. The actual date on which construction commenced within 30 days after such date.

   b. The anticipated start-up date postmarked not more than 60 days nor less than 30 days prior to such date.

   c. The actual start-up date within 15 days after such date.
   (Section 120-05-05 of State Regulations)

4. The permitted facility shall be designed and constructed so as to allow emissions testing using the methods prescribed upon reasonable notice at any time.
   (Sections 120-05-03 and 120-06-03 of State Regulations)

5. The permittee shall retain records of all emission data and operating parameters required by the terms of this permit including Appendix A. These records shall be maintained by the source for a period of at least two years. These records shall include coal in storage for each day, and the annual throughput.
   (Sections 120-05-05 and 120-06-05 of State Regulations)

6. All wet suppression equipment operators shall be trained and certified in the proper operation of all such equipment. Dominion Terminal Associates shall maintain records of the required training and certification. Certification of training shall consist of a statement of time, place and nature of training provided.
   (Section 120-02-11 of State Regulations)

7. The company shall develop, maintain, and have available to all operators good written operating procedures for all wet suppression equipment. A maintenance schedule for all such equipment shall be established and made available to the State Air Pollution Control Board for review. Records of service and maintenance shall be maintained on file by the source for a period of two years.
   (Section 120-02-11 of State Regulations)

8. The Board reserves the right to modify and, if appropriate, to reissue or to rescind this permit if prior to operation there is a substantive change to the design capacity or the fundamental nature of the process or control equipment such that the potential to emit of any facility is increased.
   (Section 120-02-11 of State Regulations)

9. The Board reserves the right to modify and, if appropriate, to reissue or to rescind this permit if prior to operation there is a substantive change in any of the data upon which the decision to approve this permit was based.
(Section 120-02-11 of State Regulations)

10. All local zoning and building requirements must be met before commencing construction.
(Section 120-02-11 of State Regulations)

11. If, for any reason, the permittee does not comply or shall not be able to comply with the emission limitations or other conditions specified in this permit, the permittee shall provide in writing to the Board (Director, Region VI) the following information as soon as possible but no later than five days after such conditions become known to the permittee:

    a. description of noncompliance;

    b. cause of noncompliance;

    c. anticipated time the noncompliance is expected to continue or, if corrected, the actual duration of noncompliance;

    d. steps taken by the permittee to minimize or eliminate the noncompliance; and

    e. steps taken by the permittee to prevent recurrence of the noncompliance.

    Submittal of this report does not constitute a waiver of the emission limitations or other conditions of this permit nor does it in any way restrict the SAPCB's authority to enforce the permit conditions pursuant to Section 113 of the Clean Air Act.
    (Section 120-02-11 of State Regulations)

12. The permitted facility is to be constructed and operated as represented in the permit application referenced in Condition 2 of Part I. No changes in the permit application specifications or any existing facilities shall be made which alter the emissions into the ambient air or alter the impact of the facility on air quality without the prior written approval of the Board.
(Section 120-02-11 of State Regulations)

13. The facility shall operate in compliance with Rules 4-3 and 5-3, Non-Criteria Pollutants. No changes in the facility that cause the emission of additional non-criteria pollutants shall be made without the prior written approval of the Board.
(Sections 120-04-0305 and 120-05-0305 of State Regulations)

14. In the event of any change in control of ownership of the permitted source, the permittee shall notify the succeeding owner of the existence of this permit by letter and send a copy of that letter to Director, Region VI.
(Section 120-02-11 of State Regulations)

15. The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of that provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
(Section 120-02-11 of State Regulations)

16. This permit approval is only applicable to the permit requirements of the State Air Pollution Control Board and does not alter permit requirements by any other local, state, or federal government agency. Dominion Terminal Associates is cautioned that approval of this permit should not be construed to mean its operation is automatically in compliance with all aspects of the Regulations for the Control and Abatement of Air Pollution. State Air Board personnel shall be constantly evaluating all sources for compliance with Part V, Section 120-05-0103 - Standard for Visible Emissions, Section 120-05-0104 - Standard for Fugitive Dust/Emissions, and Section 120-05-0203 - Standard for Odorous Emissions. Compliance with all air pollution regulations must be a continuing, full time effort.
(Section 120-02-11 of State Regulations)

Annual requirements to fulfill legal obligations to maintain current stationary source emissions data shall necessitate your response to requests for information to include, as appropriate: fuel consumption by type, heat value, sulfur and ash content; process and production data; refuse disposal by incineration including auxiliary fuels burned; storage, handling and use of liquid organic compounds; and, changes in stack data, control equipment, and operating schedules. Such requests for information from the Regional Office shall either be in writing or by personal contact of field enforcement personnel. Emissions data provided to the Board by a source must be made available to the public upon request; process data for individual facilities and plants shall be made available to the public upon request unless the source claims, in writing, the information is proprietary and that it should be held as confidential.
(Section 120-02-31 of State Regulations)

PART III - DOCUMENT LIST

1. Permit application signed by Mr. F. J. Manusco, dated July 29, 1981.

2. State Air Pollution Control Board, Region VI engineering analysis, dated September 10, 1981.

3. Mathematical Supplement to: "Control of Fugitive Emissions from Open Coal Storage in Newport News, Virginia," page 67 "Control Methodology."

APPENDIX A

This appendix is to be considered a part of the State Air Pollution Control Board permit to operate the Dominion Terminal Associates (Dominion) coal terminal. All procedures outlined in this appendix are enforceable as a condition of operating.

Dominion shall record the following parameters on an hourly basis:

Average hourly temperature (T) in degrees Fahrenheit

Average hourly relative humidity (RH)

Average hourly wind speed in miles per hour (SP)

Average hourly wind direction (DIR)

Hourly rain in inches

Hourly occurrence of fog (visibility of 4 miles or less)

Density of air P from the equation $P = -0.0001478(T) + 0.0853$

Viscosity of air (1.68u) from the following equations

$-24.88 < T \leq 32$	$1.68u = 0.0001207(T) + 0.0655479$
$32.00 < T \leq 64.40$	$1.68u = 0.0001493(T) + 0.0646353$
$64.40 < T \leq 104$	$1.68u = 0.0001344(T) + 0.0655899$

K as determined by the equation: $K = SP(T/RH)\ (P/u\ 1.68)$

Dominion shall use the data listed above for a computerized spreadsheet in a format as described below, maintaining the records to be submitted to the Board upon request.

Column 1. Records the time (TM) starting with 1 (1:00 am) and ending with (12:00 pm) to represent the hourly values of a 24 hour day.

Column 2. Records the RAINBIRD cycles (RBC) as they occur, on the hour that they occur from the computer controlled water suppression system. The sum of all cycles are carried forward to each succeeding hour. Rain less than 0.03 inches as recorded from the rain gauge is counted as a suppression cycle when SUMIR < 0.03 and $F_r = 1$.

Column 3. Records the hourly inches of rain (IR) on the hour.

Column 4. Records the post rainfall hours (HRS) as consecutive starting at 1 after the rain gauge reads 0 inches for 1 hour and the SUMIR ≥ 0.03. Otherwise, (HRS) equals 0.

If: TM = 24 and Fr < 0.90 and HRS < 48, then HRS and SUMIR are carried forward to the next day.

When: HRS = 48 or Fr ≥ 0.90, the post rain effect has reached its limit. On the next hour, Fr = 1, HRS = 0 and SUMIR/a = 0.

Column 5. Computes and records the effective sum of the hourly rainfall (SUMIR) as follows:

consecutive rainfall

$$SUMIR = IR_1 + IR_2 + IR_3 \cdots \text{ETC.}$$

If: SUMIR ≥ 0.03, then Fr=0 and HRS=0

If: SUMIR < 0.03 and IR > 0, then $F_r = 1$ and HRS = 0 and RBC is increased by 1.

non-consecutive rainfall

If: $SUMIR_{n-1} \geq 0.03$ and $(F_r)_{n-1} < 0.9$ and $HRS_{n-1} < 48$

and $IR_n \geq 0.01$, then $SUMIR_n = SUMIR_{n-1/a} + IR_n$

where: $SUMIR_{n-1/a} = SUMIR_{n-1}/HRS_n$

If: $SUMIR_{n-1} \geq 0.03$ and $(F_r)_{n-1} < 0.9$ and $HRS_{n-1} < 48$

and $IR_n = 0$, then $SUMIR_n = SUMIR_{n-1}$

If: $0 < SUMIR_{n-1} < 0.03$ and $IR_n = 0$, then $SUMIR_n = 0$

and $SUMIR_{n/a} = 0$

Note: $SUMIR_{n-1/a}$ is the amount of rainfall left in inches after HRS_n hrs. of post rainfall effect.

If: TM = 24 and Fr < 0.90 and HRS < 48, then HRS and SUMIR are carried forward to the next day.

When: HRS = 48 or Fr ≥ 0.90, the post rain effect has reached its limit. On the next hour, Fr = 1, HRS = 0 and SUMIR/a = 0.

Column 6. Computes and records the post rainfall effect factor F_r.

F_r = 0 when IR ≥ 0.03

= 0 when $0.01 \leq IR \leq 0.03$ and SUMIR ≥ 0.03

= 1 when $0 \leq IR \leq 0.03$ and SUMIR < 0.03

= $10^{(-215.66 \cdot 24 \cdot SUMIR/(KT \cdot HRS))}$ when IR = 0

and SUMIR ≥ 0.03

When: HRS = 48 or Fr ≥ 0.90, the post rain effect has reached its limit. On the next hour, Fr = 1, HRS = 0 and SUMIR/a = 0.

Column 7. Computes and records the hourly value of K from:

$K = SP(T°F/RH)(P/1.68\mu)$

Column 8. Computes and records the hourly value of the demand control K (K_D) from:

$K_D = K \cdot F_r$ when $F_r < F_{r/check}$ and $HRS \leq 24$

$K_D = K \cdot F_c$ when $F_r \geq F_{r/check}$ or $HRS > 24$

where: K = the value in Column 7

F_r = the value in Column 6

F_c = 0 for visibility ≤ 4 miles (FOG)

F_c = 0.5 for temperatures ≤ 29°F

F_c = 1 otherwise

$F_{r/check} = 1$

when $(1-EFF) < 0$ or

when $K_{pr}T3 = 0$ and $K_{pr}T2 = 0$ and $K_{pr}T1 = 0$

$$F_{r/check} = [30(KT/(CE_{uc}T(1-EFF)))-K_{dy}T-\sum_{i=1}^{2}(K_{pr}T_i \cdot F_{r/hold^i})]/K_{pr}T3$$

when $K_{pr}T3 > 0$

$$F_{r/check} = [30(KT/(CE_{uc}T(1-EFF)))-K_{dy}T-(K_{pr}T1)(F_{r/hold^1})]/K_{pr}T2$$

when $K_{pr}T3 = 0$ and $K_{pr}T2 > 0$

$$F_{r/check} = [30(KT/(CE_{uc}T\cdot(1-EFF)))-K_{dy}T]/K_{pr}T1$$

when $K_{pr}T3 = 0$ and $K_{pr}T2 = 0$ and $K_{pr}T1 > 0$

See Columns 9, 12, 15, 18, 21, 22, 23 and 24.

Column 9. Computes the projected ΣK_t (KT) for the day as follows:

$$KT_n = K_1 + K_2 + K_3 + \cdots + K_n + K_n(24 - TM)$$

where TM is the end of the hour for which the calculations are intended.

Example: $K_1 = 10$

$K_2 = 10$

$K_3 = 20$

$K_3 (24 - TM) = 420$

$KT = 460$

Column 10. Records the value of K DRY (K_{dy}) as follows:

$K_{dy} = K \cdot F_c$ when $F_r = 1$

where: $F_c = 0$ for visibility ≤ 4 miles (FOG)

$F_c = 0.5$ for temperatures ≤ 31°F

$F_c = 1$ otherwise

$K_{dy} = 0$ when $F_r < 1$

Column 11. Computes and records the value of the sum of the K DRY ($SUMK_{dy}$) on the hour as follws:

$$(SUMK_{dy})_n = (K_{dy})_1 + (K_{dy})_2 + (K_{dy})_3 + \cdots + (K_{dy})_n$$

Column 12. Computes and records the projected sum of the K_{dy} ($K_{dy}T$) for the day as follows:

$$(K_{dy}T)_n = (K_{dy})_1 + (K_{dy})_2 + \cdots + (K_{dy})_n + [(K_{dy})_n(24-TM)]$$

Column 13. Records the value of K Post Rain ($K_{pr}1$) each hour as follows:

$K_{pr}1 = K$

when HRS > 0 and $(K_{pr}1)_{n-1} > 0$ or

when HRS > 0 and $(K_{pr}1)_{n-1} = 0$ and $(SUMK_{pr}1)_{n-1} = 0$

$K_{pr}1 = 0$ otherwise

Column 14. Computes and records the sum of the $K_{pr}1$ ($SUMK_{pr}1$) on the hour as follows:

$$(SUMK_{pr}1)_n = (K_{pr}1)_1 + (K_{pr}1)_2 + (K_{pr}1)_3 + \cdots + (K_{pr}1)_n$$

Column 15. Computes and records the projected sum of the $K_{pr}1$ ($K_{pr}T1$) for the day as follows:

$$(K_{pr}T1)_n = (K_{pr}1)_1 + (K_{pr}1)_2 + \cdots + (K_{pr}1)_n + [(K_{pr}1)_n(24-TM)]$$

Column 16. Records the value of the second K Post Rain ($K_{pr}2$) each hour as follows:

$K_{pr}2 = K$

when $K_{pr}1 = 0$ and HRS > 0 and $(K_{pr}2)_{n-1} > 0$ or

when $K_{pr}1 = 0$ and HRS > 0 and $(K_{pr}2)_{n-1} = 0$ and

$(SUMK_{pr}2)_{n-1} = 0$

$K_{pr}2 = 0$ otherwise

Column 17. Computes and records the sum of the $K_{pr}2$ ($SUMK_{pr}2$) on the hour as follows:

$$(SUMK_{pr}1)_n = (K_{pr}2)_1 + (K_{pr}2)_2 + (K_{pr}2)_3 + \cdots + (K_{pr}2)_n$$

Column 18. Computes and records the projected sum of the $K_{pr}2$ ($K_{pr}T2$) for the day as follows:

$$(K_{pr}T2)_n = (K_{pr}2)_1 + (K_{pr}2)_2 + \cdots + (K_{pr}2)_n + [(K_{pr}2)_n(24-TM)]$$

Column 19. Records the value of the third K Post Rain ($K_{pr}3$) each hour as follows:

$K_{pr}3 = K$

when $K_{pr}1 = 0$ and $K_{pr}2 = 0$ and HRS > 0 and

$(K_{pr}3)_{n-1} > 0$ or

when $K_{pr}1 = 0$ and $K_{pr}2 = 0$ and HRS > 0 and

$(K_{pr}3)_{n-1} = 0$ and $(SUMK_{pr}3)_{n-1} = 0$

$K_{pr}3 = 0$ otherwise

Column 20. Computes and records the sum of the $K_{pr}3$ ($SUMK_{pr}3$) on the hour as follows:

$$(SUMK_{pr}3)_n = (K_{pr}3)_1 + (K_{pr}3)_2 + (K_{pr}3)_3 + \cdots + (K_{pr}3)_n$$

Column 21. Computes and records the projected sum of the $K_{pr}3$ ($K_{pr}T3$) for the day as follows:

$$(K_{pr}T3)_n = (K_{pr}3)_1 + (K_{pr}3)_2 + \cdots + (K_{pr}3)_n + [(K_{pr}3)_n(24-TM)]$$

Column 22. Computes and records the end of the day's projected coal loading ($CE_{uc}T$) on the hour as follows:

$CE_{uc}T = (0.460679KT - 2.8759842)$ when $(KT < 288)$

$= (0.255568KT + 56.216517)$ when $(KT \geq 288)$

Column 23. Computes and records the uncontrolled Hi Vol coal loading (hvi_{unc}) to the hour as follows:

$$(hvi_{unc})_n = [(SUMK_{dy})_n + \sum_{i=1}^{3} (SUMK_{pr^i})_n (F_{r/hold^i})_n][(CE_{uc}T)_n/KT_n]$$

where: $(F_{r/hold^1})_n = (F_{r/hold^1})_{n-1}(10^{(1/KT_n - 1/KT_{n-1})})$

when $HRS_{n-1} = 48$ or

when $0.90 \leq (F_r)_{n-1} < 1$ or

when $HRS_{n-1} < 48$ and $(F_r)_{n-1} < 0.90$ and

$K_{pr}1 = 0$ and $SUMK_{pr}1 > 0$

$(F_{r/hold^1})_n = (F_r)_n$ otherwise

$(F_{r/hold^2})_n = (F_{r/hold^2})_{n-1}(10^{(1/KT_n - 1/KT_{n-1})})$

when $[(F_{r/hold^1})_n - (F_r)_n] \neq 0$ and

$HRS_{n-1} = 48$ or

when $[(F_{r/hold^1})_n - (F_r)_n] \neq 0$ and

$0.90 \leq (F_r)_{n-1} < 1$ or

when $[(F_{r/hold^1})_n - (F_r)_n] \neq 0$ and

$HRS_{n-1} < 48$ and $(F_r)_{n-1} < 0.90$ and

$K_{pr}2 = 0$ and $SUMK_{pr}2 > 0$

$(F_{r/hold^2})_n = (F_r)_n$ otherwise

$(F_{r/hold^3})_n = (F_{r/hold^3})_{n-1}(10^{(1/KT_n - 1/KT_{n-1})})$

when $[(F_{r/hold^1})_n - (F_r)_n] \neq 0$ and

$[(F_{r/hold^2})_n - (F_r)_n] \neq 0$ and

$HRS_{n-1} = 48$ or

when $[(F_{r/hold^1})_n - (F_r)_n] \neq 0$ and

$[(F_{r/hold^2})_n - (F_r)_n] \neq 0$ and

$0.90 \leq (F_r)_{n-1} < 1$ or

when $[(F_{r/hold^1})_n - (F_r)_n] \neq 0$ and

$[(F_{r/hold^2})_n - (F_r)_n] \neq 0$ and

$HRS_{n-1} < 48$ and $(F_r)_{n-1} < 0.90$ and

$K_{pr}3 = 0$ and $SUMK_{pr}3 > 0$

$(F_{r/hold^3})_n = (F_r)_n$ otherwise

Column 24. Computes and records the controlled Hi Vol coal loading (hvi) to the hour as follows:

$$(hvi)_n = (hvi_{unc})_n(1 - EFF_n)$$

where: $EFF_n = ((RBC_n)(\%EFF/C)_n/100)$

and: $(\%EFF/C)_n = 36.657299 \times 10^{-0.00189215KT_n}$

when $KT_n < 288$

$(\%EFF/C)_n = -0.0146913KT_n + 14.650259$

when $KT_n \geq 288$

Column 25. Computes and records the projected controlled Hi Vol coal loading (hvT) for the day as follows:

$(hvT)_n = (hvi)_n$ when $(F_rT)_n = 0$

$(hvT)_n = [(K_{dy}T)_n + (K_{pr}T1)_n(F_rT)_n][(CE_{uc}T)_n/KT_n][1-EFF_n]$

when $K_{pr}T3 = 0$ and $K_{pr}T2 = 0$ and $K_{pr}T1 > 0$

$(hvT)_n = [(K_{dy}T)_n + (K_{pr}T1)_n(F_{r/hold^1})_n + (K_{pr}T2)_n(F_rT)_n]$ X

$[(CE_{uc}T)_n/KT_n][1-EFF_n]$

when $K_{pr}T3 = 0$ and $K_{pr}T2 > 0$

$$(hvT)_n = [(K_{dy}T)_n + \sum_{i=1}^{2}(K_{pr}T_i)_n (F_{r/hold^i})_n + (K_{pr}T3)_n(F_rT)_n] \text{ X}$$

$[(CE_{uc}T)_n/KT_n][1-EFF_n]$

when $K_{pr}T3 > 0$

where: $(F_rT)_n = 10^{(-215.66 \cdot 24 \cdot SUMIR_n/(KT_n \cdot (24-TM+HRS_n)))}$

when $IR = 0$ and $SUMIR \geq 0.03$

$= (F_rT)_{n-1}(10^{(1/KT_n - 1/KT_{n-1})})$

when IR = 0 and SUMIR = 0 and

$0 < (F_rT) < 1$

= 0 when IR $\geq$ 0.03 or

when $0 < IR < 0.03$ and SUMIR $\geq$ 0.03

= 1 otherwise

GOOD LUCK !!!!

When the value of "KD" is equal to or greater than 11, Dominion shall commence a full coverage "DEMAND I" water spray suppression cycle of at least 20,000 gallons of water on its respective metallurgical coal piles.

This "DEMAND I" cycling of the suppression water shall be repeated as long as the value of "KD" remains above 11, with one hour delays between cycles. Such times for commencement to be on the hour as dictated by the computed value of "KD."

When the value of "KD" equals or exceeds 17 as computed on the hour, a "DEMAND II" cycle shall commence on all coal piles with no less than 24,000 gallons of water administered on the hour and continue each hour on the hour until the value drops below the value of 17. The normal one hour delay between cycles shall then be resumed as a "DEMAND I" cycle until a value for "KD" is lower than 11.

When the value of "KD" equals or exceeds 34 as computed on the hour, a "DEMAND III" cycle shall commence on all coal piles with no less than 48,000 gallons of water. A "DEMAND III" cycle is defined as a double cycle or a back to back cycle. This endeavor will continue on the hour until the "KD" value drops below the value of 34. The "DEMAND II" sequence will then commence until the value drops below the 17 and subsequently the normal one hour delay between cycles shall then be resumed as a "DEMAND I" cycle until a value for "KD" is lower than 11.

When the value of "KD" equals or exceeds 51 as computed on the hour, continuous cycling will commence until this value of "KD" drops below 51, when DEMAND III, II or I shall commence as previously outlined.

Each day will have at least four "ASSURANCE" cycles on all metallurgical coal piles regardless of the values of "KD". On days when the hourly values of "KD" are all below 11 prior to 4:00 a.m. an "ASSURANCE" cycle shall be conducted at that time. If the hourly values of "KD" continue below 11 until 9:00 a.m. a second "ASSURANCE" cycle shall be conducted at that time. Similarly again at 1:00 p.m. and 4:00 p.m. "DEMAND I" cycle requirements or a trace of rain prior to or between 4:00 a.m. and 4:00 p.m. shall count as one or more of these four "ASSURANCE" cycles required per day.

Each day on other than metallurgical coal piles (i.e., steam coal) at least one "ASSURANCE" cycle shall be administered at 9:00 a.m., of no less than 8,000 gallons of water unless the stipulations for "DEMAND II" have been reached prior to this time, then the "DEMAND II" requirements shall count as this "ASSURANCE" requirement.

"ASSURANCE" cycles may be applied to the metallurgical coal piles with quantities of water less than 20,000 gallons per cycle in accordance with the following:

When: Projected value of "KT" at the end of the specified hour for application is equal to or less than 150, i.e., KT $\leq$ 150, 12,000 gallons of water per cycle can be used.

When: Projected value of KT at the end of the specified hour for application is greater than 150 but equal to or less than 500, i.e., 150 $\leq$ KT $\leq$ 500, 17,000 gallons of water per cycle can be used.

When: Projected value of KT at the end of the specified hour for application is greater than 500, i.e., "KT" $\geq$ 500, 20,000 gallons of water must be used.

OCR

The following pages contain the Optical Character Recognition text of the preceding scanned images.

DSE-007-83-
ELIZABETH H. HASKELL, CHAIRMAN
MARTINSVILLE
CARL C. REDINGER, VICE CHAIRMAN
ALEXANDRIA
TIMOTHY E. BARROW
VIRGINIA BEACH
MANUEL DEESE RICHARD L. COOK
Ix
RICHMOND COMMONWEALTH of VI"GINIA EXECUTIVE DIRECTOR
WALLACE E. REED
CHARLOTTESVILLE State Air Pollution Control Board
ROOM 801, NINTH STREET OFFICE BUILDING
POST OFFICE BOX 10089
RICHMOND, VIRGINIA 23240
(804) 786-2378

@ r4d
January 7, 1988

Mr. Howard B. Phillips
President
Dominion Terminal Associates
P. 0. Box 967A
Newport News, VA 23607
Location: Newport News, Virginia
Registration No: 60997
County-Plant No: 2120-0074
Dear Mr. Phillips:

Attached is an amended page 2 of your November 24, 1987 permit letter. Specific Condition Number 6 has been changed to omit the requirement for a surfactant to be used with the water in the wet suppression system for the coal storage piles.

This requirement was inadvertently included in your permit. The remainder of the permit is unchanged and fully enforceable.

For questions concerning this amendment, contact the Director, Region VI at (804) 446-4994.

Si erely,

Ri hard L. Cook
Ex cutive Director

RLC/edb

Attachment

cc: Director, Division of Source Evaluation, CCT State Air Pollution Control B oard
Director, Division of Computer Services Old Greenbrier Village - Suite A
2010 Old Greenbrier Road
Chesapeake, VA 23320-2168

An Equal Opportunl'ty Employer

PART I - SPECIFIC CONDITIONS - the regulatory reference and authority for each condition is listed in parenthesis () after each condition.

1. Dominion Terminal Associates is located in Newport News, Virginia.

2. Construction and operation shall be conducted as proposed in the permit application dated August 17, 1981 and amended on August 25, 1981. The permit application and supporting documents (see Document List) are a part of this permit.
(Section 120-02-11 of State Regulations)

3. The equipment to be installed consists of:

- rotary rail car dumper and other coal handling and storage equipment.

- a permanent wet suppression system which can completely wet all coal storage piles

x 106
4. The yearly throughput of coal shall not exceed 25 tons.
(Section 120-02-11 of State Regulations)

5. The maximum quantity of coal in storage at any one time shall not exceed 1.0 x 106 tons.
(Section 120-02-11 of State Regulations)

6. Fugitive coal dust emissions from the storage piles shall be controlled by a wet suppression system capable of wetting the entire coal storage area.
(Section 120-08-01 F of State Regulations)

7. Coal dust emissions from the rotary dumper and transfer points shall be controlled by wet suppression which shall include the use of a surfactant.
(Section 120-08-01 F of State Regulations)

8. Coal dust emissions from the surge silos shall be controlled by baghouses at least 99 percent efficient.
(Section 120-05-04 of State Regulations)

9. Stack testing shall not be required due to the existence of adequate data to allow the SAPCB staff to make the technical assessment that the source can operate in compliance. An opacity test shall be conducted on all emission points. The details of the test shall be arranged with the Director, Region VI.
(Section 120-08-01 H5 of State Regulations)

10. Opacity at all emission points shall be limited to less than 5 percent.
(Section 120-02-11 of State Regulations)

November 24, 1987

Mr. Howard B. Phillips, President
Dominion Terminal Associates
P. 0. Box 967A
Newport News, VA 23607
Location: Newport News, Virginia
Registration No: 60997
County-Plant No: 2120-0074
Dear Mr. Phillips:

Attached is a revised permit to construct and operate a coal storage and export facility at your terminal in Newport News, Virginia in accordaace with the provisions of the Commonwealth of Virginia Regulations for the Control and

Abatement of Air Pollution.

In the course of evaluating the application and arriving at a final decision to approve the project, the Virginia State Air Pollution Control Board (SAPCB)

deemed the application complete on August 28, 1981. This revised permit repla ces
any pre-existing Virginia State Air Pollution Control Board (SAPCB) permits.

In the course of evaluating the application and arriving at a final decision to approve the project, the SAPCB deemed the application complete on August 28 ,
1981.

This approval to construct and operate shall not relieve Dominion Terminal Associates of the responsibility to comply wifh all other local, State and Federal air pollution control regulations.

If you have any questions concerning this permit, please contact the Director, Region VI, at (804) 466-4994.

Sincerely,

A",
Richard L. Cook
Executive Director
RLC/da
Attachment

cc: Director, Division of Source Evaluation, CCT State Air Pollution Control B oard
Director, Division of Computer Services Old Greenbrier Village - Suite A

RIO Old Greenbrier Road
hesapeake, VA 23320-2168

-111 01)1)or1wi'1v Emplol,er"

PERMIT TO CONSTRUCT AND OPERATE

In compliance with the Federal Clean Air Act and the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution,

Dominion Terminal Associates
P. 0. Box 967A
Newport News, Virginia 23607
Registration No. 60997
County-Plant No. 2120-0074

is authorized to construct and operate

a coal storage and export facility
('11. 01

located at

Pier 11, Harbor Road
Newport News, Virginia

in accordance with the Specific Conditions (emission limitations, monitoring a nd
testing requirements) and the General Conditions set forth in Parts I and II herein.

Approved this twenty-fourth day of November, 1987.

chard L. Cook
Executive Director

Permit Consists of 17 pages. Including Appendix A.
Part I - Specific Conditions 1 to 19.
Part II - General Conditions 1 to 16.
Part III - Document List, 3 items.

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PART I - SPECIFIC CONDITIONS - the regulatory reference and authority for each condition is listed in parenthesis () after each condition.

1. Dominion Terminal Associates is located in Newport News, Virginia.

2. Construction and operation shall be conducted as proposed in the permit application dated August 17, 1981 and amended on August 25, 1981. The permit application and supporting documents (see Document List) are a part of this permit.
(Section 120-02-11 of State Regulations)

3. The equipment to be installed consists of:

- rotary rail car dumper and other coal handling and storage equipment.

- a permanent wet suppression system which can completely wet all coal storage piles

4. The yearly throughput of coal shall not exceed 25 x 106 tons.
(Section 120-02-11 of State Regulations)

5. The maximum quantity of coal in storage at any one time shall not exceed 1.0 x 106 tons.
(Section 120-02-11 of State Regulations)

6. Fugitive coal dust emissions from the storage piles shall be controlled by a wet suppression system capable of wetting the entire coal storage area. The water utilized in this system shall include a surfactant.
(Section 120-08-01 F of State Regulations)

7. Coal dust emissions from the rotary dumper and transfer points shall be controlled by wet suppression which shall ir,1ude the use of a surfactant.
(Section 120-08-01 F of State Regulations)

8. Coal dust emissions from the surge silos shall be controlled by baghouses at least 99 percent efficient.
(Section 120-05-04 of State Regulations)

9. Stack testing shall not be required due to the existence of adequate data to allow the SAPCB staff to make the technical assessment that the source can operate in compliance. An opacity test shall be conducted on all emission points. The details of the test shall be arranged with the Director, Region VI.
(Section 120-08-01 H5 of State Regulations)

10. Opacity at all emission points shall be limited to less than 5 percent.
(Section 120-02-11 of State Regulations)

11. The wet suppression system for the coal storage piles shall be implemented as specified in Appendix A or by any other procedure as may be approved by the Board prior to use. Such approval shall be contingent on adequate documentation that any alternative procedure shall achieve at least as high an efficiency as Appendix A. Requests for changes in procedure shall be accompanied by an explanation of the proposed changes and the anticipated effect they shall have. These requests, if approved by the State Air Pollution Control Board, shall be subject to a test and evaluation procedure prior to being accepted as permanent changes to the control procedures.
(Section 120-02-11 of State Regulations)

12. Each spray cycle shall attain 100 percent coverage of the coal storage area and shall consist of at least 20,000 gallons of water, except for assurance cycles as noted in Appendix A.
(Section 120-05-0403 of State Regulations)

13. One person each shift shall be designated as responsible for compliance with the procedures of Appendix A. Required actions in support of these procedures shall take precedence over routine coal handling procedures.
(Section 120-02-11 of State Regulations)

14. Operating personnel at Dominion Terminal Associates shall be informed of their company's responsibilities under this permit. With respect to compliance with the permit, operating personnel shall be informed by their supervisors that they, as individuals, as well as their employer are responsible for compliance with the conditions of this permit to the extent that their failure to perform their individual duties and responsibilities lead to noncompliance with the conditions of this permit. The following actions are considered as detrimental to the control of coal emissions, but are not limited to:

a. Failure to stop any coal movement operation when it becomes known that installed air pollution control systems are inoperative and would cause excess emissions.

b. Failure to stop a coal movement operation when it becomes known that pieces of coal handling equipment needed for that operation are malfunctioning or operating significantly below designated specifications.

C. Failure of equipment operators to take immediate precautions to preclude fugitive dust emissions from the operation of bulldozers, front-end loaders, automobiles or trucks (i.e., through the use of water suppressant to control the dust, or limiting the speed of movement to below 10 miles per hour).

d. Failure of personnel to give precedence to controlling fugitive dust emissions over routine coal operations to personnel designated with the responsibility of controlling fugitive emissions.
(Section 120-02-11 of State Regulations)

15. Whenever Dominion Terminal Associates is using a particular piece of coal handling equipment (e.g. a dumper, a conveyor, etc.), it shall utilize the wet suppression controls for that piece of equipment unless the use of such equipment would cause a safety hazard or damage to the equipment from freezing.
(Section 120-02-11 of State Regulations)

16. Any significant malfunction of equipment that significantly affects the operation of the wet suppression system shall be reported to the State Air Pollution Control Board by telephone as soon as practicable. In the event of such malfunctions, auxiliary watering devices shall be used until such time as the regular equipment is repaired. A log of such action and corrective action shall be maintained for evaluation of impact.
(Section 120-02-11 of State Regulations)

17. All coal storage piles shall be truncated and compacted so as to minimize fugitive coal dust emissions.
(Section 120-05-0403 of State Regulations)

18. The representatives of Dominion Terminal Associates shall meet on a regular basis to discuss the implementation of the conditions of this permit.
(Section 120-02-11 of State Regulations)

19. Copies of this permit shall be available for reference at the facility and operating personnel shall be apprised and trained in the portions of the permit related to their duties and the n:-...---.d to control coal emissions.
(Section 120-02-11 of State Regulations)

PART II GENERAL CONDITIONS

1. Within 10 days after receiving this permit the permittee shall notify the Board (Director, Region VI) in writing of the estimated start-up date of the permitted facility. This notification is for administrative purposes only and need not be a firm date.
(Section 120-02-11 of State Regulations)

2. Quarterly reports on the progress of construction shall be submitted to the Director, Region VI, beginning December 30, 1981.
(Section 120-02-11 of State Regulations)

3. The permittee shall furnish written notification to the Board (Director, Region VI) of:

a. The actual date on which construction commenced within 30 days after such date.

b. The anticipated start-up date postmarked not more than 60 days nor less than 30 days prior to such date.

C. The actual start-up date within 15 days after such date.
(Section 120-05-05 of State Regulations)

4. The permitted facility shall be designed and constructed so as to allow emissions testing using the methods prescribed upon reasonable notice at any time.
(Sections 120-05-03 and 120-06-03 of State Regulations)

5. The permittee shall retain records of all emission data and operating parameters required by the terms of this permit including Appendix A. These records shall be maintained by the source for a period of at least two years. These records shall include coal in storage for each day, and the annual throughput.
(Sections 120-05-05 and 120-06-05 of State Regulations)

6. All wet suppression equipment operators shall be trained and certified in the proper operation of all such equipment. Dominion Terminal Associates shall maintain records of the required training and certification. Certification of training shall consist of a statement of time, place and nature of training provided.
(Section 120-02-11 of State Regulations)

7. The company shall develop, maintain, and have available to all operators good written operating procedures for all wet suppression equipment. A maintenance schedule for all such equipment shall be established and made available to the State Air Pollution Control Board for review. Records of service and maintenance shall be maintained on file by the source for a period of two years.
(Section 120-02-11 of State Regulations)

8. The Board reserves the right to modify and, if appropriate, to reissue or to rescind this permit if prior to operation there is a substantive change to the design capacity or the fundamental nature of the process or control equipment such that the potential to emit of any facility is increased.
(Section 120-02-11 of State Regulations)

9. The Board reserves the right to modify and, if appropriate, to reissue or to rescind this permit if prior to operation there is a substantive change in any of the data upon which the decision to approve this permit was based.
(Section 120-02-11 of State Regulations)

10. All local zoning and building requirements must be met before commencing construction.
(Section 120-02-11 of State Regulations)

11. If, for any reason, the permittee does not comply or shall not be able to comply with the emission limitations or other conditions specified in this permit, the permittee shall provide in writing to the Board (Director, Region VI) the following information as soon as possible but no later than five days after such conditions become known to the permittee:

a. description of noncompliance;

b. cause of noncompliance;

C. anticipated time the noncompliance is expected to continue or, if corrected, the actual duration of noncompliance;

d. steps taken by the permittee to minimize or eliminate the noncompliance; and .1

e. steps taken by the permittee to prevent recurrence of the noncompliance.

Submittal of this report does not constitute a waiver of the emission limitations or other conditions of this permit nor does it in any way restrict the SAPCB's authority to enforce the permit conditions pursuant to Section 113 of the Clean Air Act.
(Section 120-02-11 of State Regulations)

12. The permitted facility is to be constructed and operated as represented in the permit application referenced in Condition 2 of Part I. No changes in the permit application specifications or any existing facilities shall be made which alter the emissions into the ambient air or alter the impact of the facility on air quality without the prior written approval of the Board.
(Section 120-02-11 of State Regulations)

13. The facility shall operate in compliance with Rules 4-3 and 5-3, Non-Criteria Pollutants. No changes in the facility that cause the emission of additional non-criteria pollutants shall be made without the prior written approval of the Board.
(Sections 120-04-0305 and 120-05-0305 of State Regulations)

14. In the event of any change in control of ownership of the permitted source, the permittee shall notify the succeeding owner of the existence of this permit by letter and send a copy of that letter to Director, Region VI.
(Section 120-02-11 of State Regulations)

15. The conditions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of that provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
(Section 120-02-11 of State Regulations)

16. This permit approval is only applicable to the permit requirements of the State Air Pollution Control Board and does not alter permit requirements by any other local, state, or federal government agency. Dominion Terminal Associates is cautioned that approval of this permit should not be construed to mean its operation is automatically in compliance with all aspects of the Regulations for the Control and Abatement of Air Pollution. State Air Board personnel shall be constantly evaluating all sources for compliance with Part V, Section 120-05-0103 - Standard for Visible Emissions, Section 120-05-0104 - Standard for Fugitive Dust/Emissions, and Section 120-05-0203 - Standard for Odorous Emissions. Compliance with all air pollution regulations must be a continuing, full time effort.
(Section 120-02-11 of State Regulations)

Annual requirements to fulfill legal obligations to maintain current stationary source emissions data shall necessitate your response to requests for information to include, as appropriate: fuel consumption by type, heat value, sulfur and ash content; process and production data; refuse disposal by incineration including auxiliary fuels burned; storage, handling and use of liquid organic compounds; and, changes in stack data, control equipment, and operating schedules. Such requests for information from the Regional Office shall either be in writing or by personal contact of field enforcement personnel. Emissions data provided to the Board by a source must be made available to the public upon request; process data for individual facilities and plants shall be made available to the public upon request unless the source claims, in writing, the information is proprietary and that it should be held as confidential.
(Section 120-02-31 of State Regulations)

PART III - DOCUMENT LIST

1. Permit application signed by Mr. F. J. Manusco, dated July 29, 1981.

2. State Air Pollution Control Board, Region VI engineering analysis, dated September 10, 1981.

3. Mathematical Supplement to: "Control of Fugitive Emissions from Open Coal Storage in Newport News, Virginia," page 67 "Control Methodology."

APPENDIX A

This appendix is to be considered a part of the State Air Pollution Control Board permit to operate the Dominion Terminal Associates (Dominion) coal terminal. All procedures outlined in this appendix are enforceable as a condition of operating.

Dominion shall record the following parameters on an hourly basis:

Average hourly temperature (T) in degrees Fahrenheit

Average hourly relative humidity (RH)

Average hourly wind speed in miles per hour (SP)

Average hourly wind direction (DIR)

Hourly rain in inches

Hourly occurrence of fog (visibility of 4 miles or less)

Density of air P from the equation P = -0.0001478(T) + 0.0853

Viscosity of air (1.68u) from the following equations

-24.88 < T < 32 1.68u = (',,,0001207(T) + 0.0655479
32.00 < T Z 64.40 1.68u = 0.0001493(T) + 0.0646353
64.40 < T Z 104 1.68u = 0.0001344(T) + 0.0655899

K as determined by the equation: K = SP(T/RH) (P/u 1.68)

Dominion shall use the data listed above for a computerized spreadsheet in a format as described below, maintaining the records to be subr-itted to the Boa rd
upon request.

Column 1. Records thi@@ time (T11-1) starting with 1 (1:00 am) and ending with (12:00 pm) to represent the hourly values of a 24 hour day.

Column 2. Records the R11INTBIRD cycles (RBC) as they occur, on -.-he hour that they occur from the computer controlled water suppression system. The sum of all cycles are carrilz-d fcrward to c!ach succeeding hour. Rain 1E:ss than 0.031 inch@U-s as recorded from the rain gauge is counted as a suppression cyci,@ @iher, SU14IR < 0.03 and F = 1.

Column 3. Records the hourly inches of rain (IR) on thc- hour.

Column 4. Records the post rainfall hours (HRS) as consecutive starting at I after the rain gauge reads- 0 inchi--:s for 1 hour and the SMAIR > 0.03. Cth,.;rwise, (HRS) equal-_- 0.

If: "I'll = 24 and Fr < 0.90 and HaS < 4101, zh@@n Hil,_O and SU11IF.

arl_-- carr4ed forward to the day.

T
@,Then: HRS = 410, or Fr >_ 0.90, uh,.@ post rain cffc@cz has reacLE:d

ir-s- lim,ir_ Or, thE! next hour, Fr = 1, HRS = 0 at-id M-IIR/a = 0.

C o 1 umn 5, Computes and rucords th,@ eff,@cLiv_- sui.:' of r-hc;

h:-,..-.rly rainfall (SUMIR) as follows;

cons--curive rainfall

SUHIR IR + R, + I,"'- --- ETC.

If: S UM I R 0 . 0 3 fi,:@ n F r = G 1z' n d ILTF@ S = 0

If: SUMIR < 0. 0-11 -,rid IR > 0, the.-.- Fr1 And 0

and RBC is incr1:-_as1_d 1:,-y 1.

non-consecutive rainfall

f SuNIR > C . 0 3 a F 0.9 "H-l"'S
n-1 r n - 1 n-1

and IR 0.01, then SUHIR SUMIR + IR
n n n-1/a n
where: SUMIR SUMIR /HRS
n-1/a n-1 n
 If: SUMIR n-1 0.03 and (F r)n-1 < 0.9 and HRS n-1 < 48
and IR n 0, then SUMIR n = SUMIR n-1
 If: 0 < SUMIR n-1 < 0.03 and IR n = 0, then SUMIR n = 0
and SUMIR n/a. = 0
Note: SUMIR n-1/a is the amount of rainfall left in inches
after HRS n hrs. of post rainfall effect.
If: TM = 24 and Fr < 0.90 and HRS < 48, then HRS and SUMIR
are carried forward to the next day.
When: HRS 48 or Fr ;-> 0.90, the post rain effect has reached
its limit. On the next hour, Fr = 1, HRS = 0 and SUMIR/a = 0.
Column 6. Computes and records the post rainfall effect
factor F
r
0 when IR > 0.03
0 when 0.01 < IR :5 0.03 and SUMIR @: 0.03
Fr 1 when 0 < IR < 0.03 and SUMIR < 0.03
10 (-215.@66. - 24 - SUMIR/(KT - HRS)) when IR = 0
and SUMIR > 0.03
When: HRS 48 or Fr > 0.90, the post rain effect has reached
its limit. On the next hour, Fr = 1, HRS = 0 and SUMIR/a = 0.
Column 7. Computes and records the hourly value of K from'.
K = SP(TOF/RH)(P/1.68p)
Column 8. Computes and records the hourly value of the
demand control K (K D) from:
KI3 = K Fr when F r < Fr/check and HRS< 24
KD = K FC when F r @-- Fr/check 0r HRS > 24

where: K = the value in Colu.-nin 7

Fr = the value in Column 6

Fc = 0 for visibility -< 4 miles (FOG)

Fc = 0.5 for temperatures < 29OF

F = 1 otherwise
C

Fr/check 1

when (1-EFF)< 0 or

when KPr T3 = 0 and K Pr T2 = 0 and KPr T1 = 0

2

Fr/check = [30(KT/(CE uc T(1-EFF)))-K dy T- E(K Pr Ti- Fr/hold')I/K pr T3

when K T3> 0
Pr

Fr/check = [30(KT/(CE uc T(1-EFF)))-K dy T-(K Pr T1)(F r/hcld 1)11K Pr T2

when K T3 = 0 and K T2> 0
Pr Pr

Fr/check = [30(KT/(CE uc T-(l-EFF)))-K dy TI/K Pr T1

when KPr T3 = 0 and K Pr T2 = 0 and KPr T1 >0

See Columns 9, 12, 15, 18, 0-1, -0-0, .2,3 and 214-

Column 9. Computes the projected EK t (KT) for rhe day as

follows:

KT n= K 1 + K2 + K 31 + ... + Kn + K (24 - TM)

where TM is the end of the hour for which the

calculations are intended.

Example: K 1 = 10

K2 = 10

K3)o

K3 (24 TM) = 420

KT 460

Column 10. Records the value of K DRY (K dy) as follows:

Kdy = K - Fc when F r = 1

where: F = 0 for visibility 4 miles (FOG)
 c

 FC = 0.5 for temperatures < 31OF

F = I otherwise
 c

Kdy = 0 when F r < 1

Column 11. Computes and records the value of the sum of the K

DRY (SUIAK dy) on the hour as follws:

(SUMK dy n = (K dy)1+ (K dy) 2 + (K dy 3 + ... + (K dy) n

Column 12. Computes and records the projected sum of the K dy

(K dy T) for the day as follows:

(K dy T) n=(K dy)1 +(K dy)I) + ... +(K dy r, + [(K dy)n(24-TI01

Colu,mn 13. Records the value of K Post Rain (K 1) each hour
pr

as follows:

Pr 1 K

when HRS > 0 and (K Pr 1) n-1 > 0 or

when HRS > 0 and (K Pr 1) n-1 @= 0 and (SUIIK Pr 1) n-1 =0

K 1 0 otherwise
Pr

Column 14. Computes and records the sum of the K pr 1 (SUMK Pr 1)

on the hour as follows: :

(SUMK 1) (K 1) + (K 1)") + (K 1) + ... + (K 1)
Pr n Pr 1 Pr L. Pr 3 Pr n

Column 15. Computes and records the projected sum of the K Pr1

(K Pr T1) for the day as follows:

(K T1) (K 1) +(K 1)-+ --- +(K 1) + ((K 1) (24-TM)]
 Pr n Pr Pr @ Pr n Pr n

Column 16. Records the value of the second K Post Rain (K Pr 2)

each hour as follows:

K 2 = K
Pr

when K Pr 1 = 0 and HRS > 0 and (K pr 2) n-I > 0 or

when K pr 1 = 0 and HRS > 0 and (K Pr 2) n-1 0 and

(SUMK Pr 2) n-1 = 0

K 2 = 0 otherwise
Pr

Column 17. Computes and records the sum of the K (SU14K 2)
Pr Pr

on the hour as follows:

(SUMK Pr 1) n = (K Pr 2) 1+ (K Pr 2)1) + (K Pr 2) 3+ ... + (K pr 2) n

Column 18. Computes and records the projected su.,u of the K Pr 2

(K Pr T2) for the day as follows:

(K T2) (K 2) +(K -),)+ .-. +(K + ((K 2) (24-TI-01
 Pr n Pr Pr Pr n Pr n

Column 19. Records the value of the third K Post Rain (K 3)
 .Pr

each hour as follows:

K 3 = K
Pr

when K 1 = 0 and K 0 and HRS > 0 and
Pr Pr

 (K Pr 3) n-1 > O or

when K 1 = 0 and K 2 = 0 and HRS > 0 and
Pr Pr

(K Pr 3) n-1 =0 and (SUMK Pr 3) n-1 0

K 3 = 0 otherwise
Pr

Column 20. Computes-and records the sum of the K pr 3 (SUPIK Pr 3)

on the hour as follows:

(SUMK 3) (F 3) + (K 3) + (K 3) + (K 3)
Pr n r 1 Pr 2 Pr 3 Pr n

Colunin 211. Computes and records the projected su.-m of the K Pr 3

(K Pr T3) for the day as follows:

(K T3) (K 3) +(K 3),+ --- +(K 3) + ((K (24-TH)l
Pr n Pr 1 Pr " Pr n Pr n

Column 22. Computes and records the end of the day's

projected coal loading (CE Uc T) on the hour as follows:

CE uc T = (0.460679KT - 2-1.11,759842.) when (KT < 21018)

= (0.-055568KT + 56.216517) when (KT ;-> .21.88)

Column '23. Computes and records the uncontrolled Hi Vol coal

loading (hvi unc) to the hour as follows:

3
(hvi unc) n [(SUMK dy)n + E (SUIIK pr') n (F r/hold') n][(CE Uc T)n/KT n]
i=1

where: (F r/hold 1) n = (F r/hold 1) n-1 (10 (I/KT n- 1/KT n-1

when HRS n-1 = 48 or

when 0.90 < (F r)n-1 < i or

when HRS n-1 < 48 and (F r) n-1 < 0.90 and

K 1 = 0 and SU14K 1 > 0
pr pr

(F r/hold 1) n (Fr)n otherwise

(F 2) (F 2) (10 (1/KT n- 1/KT n-1
r/hold n r/hold n-1

when [(F r/hold 1) n- (F r)n 0 and

HRS n-I = 43 or

when [(F r/hold 1) n- (F r)n 0 and

0.90 < (F r)n-1 <1 or

when [(F r/hold 1) n- (F r)n 0 and

HR"S n-1 < 48 and (F r n-I < 0.90 and

0 and SUI,,IK > O
pr pr

(F r/hold 2)n = (F r)n othc:rwise

(F r/hold 3) n = (F r/hold 3) n-1 (10 ("/KT I'l- 1/KT r,-I

when [(F r/hold l) n- (F rn 0 and

[(F r/hold 2) n- (F rn 0 and

HRS- = 410J or
n-1

when [(F r/hold 1) n- (F rn 0 and

[(F r/hold 2) n- (F rn 0 and

0.90 < (F r)n-1 < 1 or

when [(F 1) (F 0 and
r/hold n r II

[(F r/hold 2) n- (Frn 0 and

HRSn-1 < 48 and (F r) n-1 < U.90 and

K Pr 3 = 0 and SU11K Pr 3 > 0

(F r/hold 3) II =(Fr)n otherwise

Column 24. Computes and records the controlled Hi Vol coal

loading (hvi) to the hour as follows:

(hvi),, = (hvi unc)n (1 - EFF n)

where: EFF n = ((RBC n)(%EFFIC) II /100)

and: (%EFF/C) 36.657299 x 10- 0.001891"]15KT n

when KT < .2183
n

(%EFF/C) n -0.0146913KT n+ 14.650-259

when KT > 280Q
n

Column 25. Computes and records the projected conLrolled Hi

Vol coal loading (hvT) for the day as follows:

(hvT),, = (hvi) when (F T) = 0
n r n

(hvT) n = ((K dy T)n+ (K pr T1) II (FrT) n][(CE uc T) II /KTn][-L-EFF n

when K T3 - 0 and K T2 = 0 and K T1 > 0
Pr Pr Pr

(hvT) n = [(K dy T)n+ (K Pr T1)n (F r/hold 1) n + (K T2) (F T) x
 Pr n r n

((CE uc T)n/IKTn][1-EFFn

when K Pr T3 = 0 and K Pr T2 > 0

2
(hvT) n = [(K dy T) II + E (K Pr Ti) II (F r/hold') n+ (K Pr T3)n (FrT)nI x

[(CE uc T)n/KTn][1-EFFn

when K T3 > 0
Pr

where: (F T) 10 (-215.66-12114-SUNIRn/(KT n' (24-TI,I+HRS n
r n

wh-f-n IR = 0 and -11@'UIJIR > 0.031

= (F T) (10 (1/KT n- 1/KT n-1))
r I-1-1

when IR = 0 and SU14IR = 0 and

0 < (F rT) < 1

= 0 when IR > 0.03 or

when 0 < lR < 0.03 and SUMIR > 0.03

= 1 otherwise

GOOD LUCK !!!!

When the value of I-KD-- is equal to or greater than 11, Dominion shall commence a full coverage "DEMAND III water spray suppression cycle of at least 20,000 gallons of water on its respective metallurgical coal piles.

This "DEMAND I" cycling of the suppression water shall be repeated as long as the value of `KD11 remains above 11, with one hour delays between cycles. Such times for commencement to be on the hour as dictated by the computed value of 110.11

When the value of 11KD11 equals or exceeds 17 as computed on the hour, a "DEMAND III' cycle shall commence on all coal piles with no less than 24,000 gallons of water administered on the hour and continue each hour on the hour until the value drops below the value of 17. The normal one hour delay between cycles shall then be resumed as a "DEMAND I" cycle until a value for 11KD11 is lower than 11.

When the value of 11KD11 equals or exceeds 34 as computed on the hour, a "DEMAND III" cycle shall commence on all coal piles with no less than 48,000 gallons of water. A "DEMAND III" cycle is defined as a double cycle or a back to back cycle. This endeavor will continue on the hour until the 11KD11 value drops below the value of 34. The "DEMAND III' sequence will then commence until the value drops below the 17 and subsequently the normal one hour delay between cycles shall then be resumed as a "DEMAND I" cycle until a value for 11KD11 is lower than 11.

When the value of 11KD11 equals or exceeds 51 as computed on the hour, continuous cycling will commence until this value of 11KD11 drops below 51, when DEMAND III, II or I shall commence as previously outlined.

Each day will have at least four "ASSURANCE" cycles on all metallurgical coal piles regardless of the values of '1011. On days when the hourly values of 11KD11 are all below 11 prior to 4:00 a.m. an "ASSURANCE" cycle shall be conducted at that time. If the hourly values of 11KD11 continue below 11 until 9:00 a.m. a second "ASSURANCE" cycle shall be conducted at that time. Similarly again at 1:00 p.m. and 4:00 p.m. "DEMAND I" cycle requirements or a trace of rain prior to or between 4:00 a.m. and 4:00 p.m. shall count as one or more of these four "ASSURANCE" cycles required per day.

Each day on other than metallurgical coal piles (i.e., steam coal) at least one "ASSURANCE" cycle shall be administered at 9:00 a.m., of no less than 8,000 gallons of water unless the stipulationc, for "DEMAND III' have been reached prior to this time, then the "DEMAND III' requ-@,,ements shall count as this "ASSURANCE" requirement.

"ASSURANCE" cycles may be applied to the metallurgical coal piles with quantities of water less than 20,000 gallons per cycle in accordance with the following:

When: Projected value of '1KT11 at the end of the specified hour for application is equal to or less than 150, i.e., KT < 150, 12,000 gallons of water per cycle can be used.

When: Projected value of KT at the end of the specified hour for application is greater than 150 but equal to or less than 500, i.e., 150 < KT < 500, 17,000 gallons of water per cycle can be used.

When: Projected value of KT at the end of the specified hour for uplication is greater than 500, i.e., "KT" > 500, 20,000 gallons of water must

use .