Memorandum To : Director, Division of Compliance

From : Director, Region VI

Subject : Application for a Permit to Construct and Operate a Coal Terminal by:

DOMINION TERMINAL ASSOCIATES
c/o Utah International, Inc.
550 California Street
San Francisco, California 94104

McKee	
Hay	Hay
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Briggs	

Enclosure : (1) The Subject Permit Application

(2) Calculations

(3) Draft Approval Letter

Date : September 10, 1981

Serial : 0597-81

INTRODUCTION & BACKGROUND: Dominion Terminal Associates proposes to construct and operate a coal terminal on part of the old Chessie System railyard located between the Chessie System Coal Terminal and the proposed Massey Coal Terminal in Newport News, Virginia. The property is zoned M-2 (heavy industrial). The subject permit is forwarded as enclosure (1).

PERMIT APPLICATION: The proposed coal terminal will consist of a 5150 tons per hour (TPH) rotary car dumper, two 5900 TPH stacker/reclaimers, a 6500 TPH shiploader, two 1000 ton surge bins, 2.5 x 10^6 tons of open coal storage plus the conveyor belts, transfer towers and rail tracks necessary to operate the terminal. The coal will arrive at the terminal in 150-200 car trains and will be dumped 2 cars at a time. All coal will initially go to storage although the terminal does have the capability to transfer coal directly from the dumper to the ship. After dumping, the coal is transferred to an enclosed surge bin and from there to one of two stacker/reclaimers where it is stored in open piles. The coal is retrieved from the piles by either of two stacker/reclaimers and transferred to a surge bin at the foot of the pier. From the surge bin it is transferred by conveyor to the shiploader. Although the car dumper has a theoretical maximum capacity rate of 5150 TPH, it seldom if ever will be able to achieve that rate because of rail car configurations, cycle time, etc. Therefore, the rate that coal goes to storage will be considerably below 5150 TPH and will average approximately 2874 TPH during a years time. A much higher transfer rate of 6200 TPH is possible from the reclaimer to the pier surge bin and an even higher rate of 6500 TPH is possible from the surge bin to the ship. However, practical considerations will dictate a transfer rate from storage to the ship of approximately 3614 TPH.

The terminal will operate in one of six modes as follows:

MODE	DESCRIPTION	HOURS PER YEAR
1	Dumper to S/R #1	921
2	Dumper to S/R #2	921
3	S/R #1 to Ship	31
4	S/R #2 to Ship	31
5	Dumper to S/R #1 S/R #2 to Ship	3428
6	Dumper to S/R #2 S/R #1 to Ship	3428

Fugitive coal dust emissions will be controlled by wet suppression at each transfer point and by a baghouse filter installation on each surge bin. The spray system will utilize water treated with special wetting agents. In addition, all conveyor transfer points will be totally enclosed chutes and all conveyors will be protected from wind action by dust hoods. Where traveling trippers are used on the conveyors, the belt will be protected by wind guards. The stacker/reclaimers will have spray headers at the boom tip and, when stacking, will maintain the minimum practical drop distance for the coal. Similarly, the shiploader, which has an articulated material lowering chute, as well as a loader boom designed to raise and lower, will maintain a minimum drop distance for the coal entering the ships hole.

A more detailed discription of the facility is available in Sections 3 and 4 of enclosure (1) and a flow diagram showing emission points, controls and capacities is available in Section 9.

Dominion proposes to start construction February 1, 1982 and plans to be completed by November 1, 1983.

DISCUSSION: Mr. F. L. Daniel has inspected the site several times within the last few weeks and considers it satisfactory with regard to air pollution considerations.

ENGINEERING EVALUATION: The proposed controls for suppression of fugitive emissions are considered to represent BACT for a facility of this type. Coal going from the railcar dumper to storage will be subject to 8 spraying if stacked by S/R #1 and 9 sprayings if stacked by S/R #2. From storage to ship the coal will be subject to 6 more sprayings. In addition, both surge bins will be enclosed and controlled by a baghouse. The height of the adjustable chute (on the shiploader) and the stacker/reclaimers above the pile could be critical to the formation of fugitive dust and must be maintained at the minimum practical drop distance.

The formulae for the emission factors used to estimate fugitive emissions, Section 4 of enclosure (1), were obtained from various EPA reports and represent

the latest information on this subject. Control efficiencies of 90% for enclosed transfer with wet suppression, 75% for open discharge with wet suppression, 90% for open storage using periodic spraying, and 50% for bucket-wheel stacker/reclaimers in the reclaiming mode have been recognized by EPA as being valid.

As noted in table II of enclosure (1) the maximum hourly emissions occur in mode 6; therefore, the potential emissions listed below are based on mode 6 at maximum capacity. Under extremely favorable conditions it is theoretically possible to maintain mode 6 at maximum rate for only 3 hours because coal is being removed from the surge bin faster than it is being replenished. Therefore, the potential emissions for 24 hours has been estimated using a shiploading rate of 6500 TPH for first 3 hours and 6200 for the remaining 21 hours. (See enclosure (2)). In computing the potential annual emissions, a max throughput of 25 x 10^6 tons was utilized, which is the same as the estimated actual throughput, so the annual emissions for potential and actual are the same. As noted below it is theoretically possible, in mode 6, to operate such that the emission rate would be 41.1 lbs/hr and 889.4 lbs/day. Actual emissions are based on the projected throughputs and the hours listed in tables I, III and IV. In addition, to fugitive TSP emissions there will be some VOC and CO emissions from the coal pile; however, these emissions are 3 orders of magnitude below the TSP emissions and are considered insignificant.

POTENTIAL TSP EMISSIONS:

Maximum Rated Capacity	Car Dumper	5150 TPH
	Conveyor Belts	
	(C1/C2)	5150 TPH
	(C3/C5)	5900 TPH
	(C4/C6/C7/C8/C9)	6200 TPH
	(C10)	6500 TPH
	Stacker	5900 TPH
	Reclaimer	6200 TPH
	Shiploader	6500 TPH
Emission Factors (Uncontrolled)	Dumper	.0021 lbs/ton
	90% Transfer (belt)	.0014 lbs/ton
	50% Stacker	.0035 lbs/ton
	Shiploader	.0095 lbs/ton
References	EPA Reports	
Operating Schedule	Mode 1	921 hrs/year
	Mode 2	921 hrs/year
	Mode 3	31 hrs/year
	Mode 4	31 hrs/year
	Mode 5	3428 hrs/year
	Mode 6	3428 hrs/year
Estimated Throughput	25 x 10^6 tons/year	

Total Potential TSP Emissions:

41.1	lbs/hour	(Mode 6)
968.6	lbs/day	(Mode 6)
90.3	tons/year	(25 x 10^6 tons/year throughput)

ACTUAL TSP EMISSIONS:

Normal Feed Input	Car Dumper	2874	TPH
	Conveyor Belts		
	(C1/C2)	2874	TPH
	(C3/C5)	2874	TPH
	(C6-C10)	3614	TPH
	Stacker	2874	TPH
	Reclaimer	3614	TPH
	Shiploader	3614	TPH
Emission Factors and References	Same as above		
Control Efficiencies	Enclosed transfer with wet suppression	90%	
	Open transfer with wet suppression	75%	
	Coal Pile with periodic spraying	90%	
	Reclaimer	50%	
	Baghouses	99%	

Total Actual TSP Emissions:

23.9	lbs/hour	(Mode 6)
572.5	lbs/day	(Mode 6)
90.3	tons/year	(All modes; 25 x 10^6 tons/year)

ALLOWABLE PARTICULATE EMISSIONS: NSPS for coal terminals are not applicable; however, the proposal is considered to meet BACT criteria.

The ambient air quality for particulate in the area is considered satisfactory. Up until July 1979 Region VI had a HiVol monitor at the Marine Resources Bldg., a short distance away from the proposed terminal, and the last annual geometric mean observed there was 63 ug/m^3. During the last 12 months that the Marine Resources HiVol was in operation the highest recorded 24 hour concentration was 124 ug/m^3. The closest monitor is now located at the Virginia Schools, approximately 5 miles to the northeast. By correlating the observed readings at both stations it appears that the ambient levels haven't changed appreciably since the Marine Resource Station was terminated. Therefore, it is estimated that the annual geometric mean for particulate in the area is approximately 60-65 ug/m^3 and the highest 24 hour concentration approximately 120 ug/m^3.

With regard to the effect of the terminal on this air quality, mode #6 operations were evaluated inasmuch as mode #6 causes the highest emission rate

of any of the 6 modes. Such evaluation of necessity must be a value judgement since all the emissions are fugitive emissions with no definitive point of origin. In reality, fugitive emission originate from multiple sources in an area approximately 3000 feet long and 1800 feet wide. Some of the sources are underground while others are as much as 112 feet above the ground. Depending on the wind direction much of the particulate will probably fall on company property or in the water. Unlike the usual point source, emissions from the subject terminal are not concentrated at the source and consequently are widely dispersed down wind. For this reason, and because the total worse case emissions are comparatively small, the impact of the proposed terminal on the ambient air is not considered to be significant.

PSD, NSPS, NESHAPS and Emission Offset are not applicable. Inasmuch as the subject terminal is not a major stationary source (Section 1.02 of the Regulations) and there is no known public interest a public hearing does not appear necessary.

In summary, it appears that the standard for granting a permit, as defined in Section 2.33 (d) of the Regulations, can be met in that:

(1) The proposed terminal will not cause a violation of the applicable provisions of the Regulations.

(2) The proposed terminal will represent "Best Available Control Technology".

(3) The proposed source will not emit hazardous air pollutants.

(4) The proposed source will not prevent or interfere with the attainment or maintenance of any applicable ambient air quality standard.

RECOMMENDATION: In view of the above and, since the subject application does not require a public hearing, it is recommended that this permit be approved subject to the conditions included in enclosure (3).

Prepared By: _____
Robert X. McKee
Regional Engineer

Reviewed By: _____
Lorin W. Hay
Assistant Regional Director - Engineering

L. B. McDonald
Director, Region VI

LBM/RXM/LWH/cf

cc: Executive Director

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

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References EPA Reports

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(0/0) 2874 TPH
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Emission Factors and References Same as above

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