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BEFORE THE
SURFACE TRANSPORTATION BOARD

E.I. DUPONT DE NEMOURS & COMPANY Complainant v. NORFOLK SOUTHERN RAILWAY COMPANY Defendant	)	Docket No. NOR 42125

OPENING EVIDENCE AND ARGUMENT OF

E.I. DU PONT DE NEMOURS AND COMPANY

Volume I:
Counsel's Argument and Summary of Evidence

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CASE GLOSSARY

AEP Texas 2006	*AEP Texas Northern Co v. BNSF Ry.*, STB Docket No. 41191 (Sub-No. 1) (served Nov. 8, 2006)
AEP Texas	*AEP Texas Northern Company v. BNSF Railway,* STB Docket No. 41191 (Sub-No. 1) (served Sept. 10, 2007)
AEPCO	*Arizona Electric Power Cooperative, Inc. v. BNSF Railway Company and Union Pacific Railroad Company,* STB Docket No. 42113 (served Nov. 22, 2011)
APS	*Arizona Pub. Serv. Co. and Pacificorp. v. The Atchison, T. and Santa Fe Ry.*, 2 S.T.B. 367 (1997)
Bottleneck Decision	*Central Power & Light Company v. Southern Pac. Transp. Co, et al.*, 1 STB 1059 (1996), aff'd sub nom. *MidAmerican Energy Company v. Surface Transportation Board,* 169 F.3d 1099 (8th Cir. 1999)
Coal Rate Guidelines or Guidelines	*Coal Rate Guidelines, Nationwide,* 1 I.C.C. 2d 520 (1985), aff'd sub nom. *Consolidated Rail Corp. v. United States*, 812 F.2d 1444 (3rd Cir. 1987)
Coal Trading Corp.	*Coal Trading Corp. v. The Baltimore & Ohio R.R., et al.*, 6 I.C.C. 2d 361 (1990)
Consolidated Papers	*Consol. Papers, Inc. v. Chi.& Nw. Transp., Inc.*, 7 I.C.C.2d 330 (1991)
CP&L	*Carolina Power & Light Co. v. Norfolk Southern Ry,* STB Docket No. 42072 (served Dec. 23, 2003)
DMIR I and II	*Minnesota Power, Inc. v. Duluth, Missabe & Iron Range Ry.*, 4 S.T.B. 64 (1998), on reconsideration, 4 S.T.B. 288 (1999)
Duke/CSXT	*Duke Energy Corp. v. CSX Transportation Inc.,* STB Docket No. 42070 (served Feb. 4, 2004)
Duke/NS	*Duke Energy Corp. v. Norfolk Southern Railway,* STB Docket No. 42069 (served Nov. 6, 2003)

CASE GLOSSARY

DuPont (Nitrobenzene)	*E.I. du Pont de Nemours and Company v. CSX Transportation, Inc.*, STB Docket No. 42101 (served June 30, 2008)
DuPont (Plastics)	*E.I. du Pont de Nemours and Company v. CSX Transportation, Inc.*, STB Docket No. 42099 (served June 30, 2008)
FMC	*FMC Wyo. Corp. v. Union Pacific Railroad Company*, 4 S.T.B. 699 (2000)
General Electric	*Gen. Elec. Co. v. Balt.& Ohio R.R.*, No. 38125S, 1984 ICC LEXIS 206 (ICC served Oct. 12, 1984)
General Procedures	*General Procedures for Presenting Evidence in Stand-Alone Cost Rate Cases*, STB Ex Parte No. 347 (Sub-No. 3) (served March 12, 2001).
IPA	*Intermountain Power Agency v. Union Pacific Railroad Company*, STB Docket No. 42127 (Public Version of UP Reply dated Nov. 10, 2011)
KCPL	*Kansas City P & L Co. v. Union Pac. R.R. Co.*, STB Docket No. 42095 (served May 19, 2008)
Major Issues	*Major Issues in Rail Rate Cases*, STB Ex Parte No. 657 (Sub-No. 1) (served Oct. 30, 2006)
Market Dominance Determinations	*Mkt. Dominance Determinations & Consideration of Prod. Competition*, 365 I.C.C. 118 (1981)
McCarty Farms	*McCarty Farms v. Burlington N., Inc.*, 3 I.C.C.2d 822 (1987)
Nevada Power II	*Bituminous Coal – Hiawatha, Utah to Moapa, Nevada*, 10 I.C.C.2d 259 (1994)
OG&E	*Oklahoma Gas & Electric Co., v. Union Pacific Railroad Company*, STB Docket No. 42111 (served July 24, 2009)
Otter Tail	*Otter Tail Power Co., v. BNSF Ry.*, STB Docket No. 42071 (served Jan. 27, 2006)

CASE GLOSSARY

PP&L	*PPL Montana, LLC v. The Burlington Northern and Santa Fe Ry. Co.*, 6 S.T.B. 286 (2002)
PSCo/Xcel	*Public Service Co. of Colorado d/b/a Xcel Energy v. Burlington Northern and Santa Fe Railway,* STB Docket No. 42057 (served June 8, 2004)
PSCo/Xcel II	*Public Service Co. of Colorado d/b/a Xcel Energy v. Burlington Northern and Santa Fe Railway,* STB Docket No. 42057 (served Jan. 19, 2005)
Special Procedures	*Special Procedures for Making Findings of Mkt. Dominance as Required by the R.R. Revitalization and Regulatory Reform Act of 1976,* 353 I.C.C. 874 (1976)
TMPA	*Texas Municipal Power Agency v. Burlington Northern and Santa Fe Railway,* 6 S.T.B. 573 (2003)
WFA/Basin	*Western Fuels Ass'n, Inc. and Basin Electric Power Coop. v. BNSF Railway,* STB Docket No. 42088 (served Sept. 10, 2007)
WFA/Basin II	*Western Fuels Ass'n, Inc. and Basin Electric Power Coop. v. BNSF Railway,* STB Docket No. 42088 (served Feb. 18, 2009)
Wisconsin P&L	*Wisconsin Power and Light Co., v. Union Pacific Railroad,* 5 S.T.B. 955 (2001)
West Texas Utilities	*West Texas Utilities Co. v. Burlington Northern Railroad,* 1 STB 638 (1996), aff'd sub nom. *Burlington Northern Railroad v. STB,* 114 F.3d 206 (D.C. Cir. 1997)

ACRONYMS

The following acronyms are used:

AAR	Association of American Railroads
AASHTO	American Association of State Highway Officials
AEI	Automatic Equipment Identification
AEO	EIA's Annual Energy Outlook Forecast
AHM	Anhydrous Methylamines
AII-LF	All-Inclusive Less Fuel Index, published by AAR
AQM	Aqueous Methylamines
AREMA	American Railway Engineering and Maintenance-of-Way Assoc.
ARRA	American Reinvestment and Recovery Act of 2009
ATC	Average Total Cost
ATF	Across-the-Fence
ATV	All-Terrain Vehicle
B&B	Bridge and Building
BNSF	Burlington Northern Santa Fe Railway Company
C&S	Communications and Signals
CAGR	Compound Annual Growth Rate
CFS	2007 Commodity Flow Survey
cmp	Corrugated Aluminized Metal Pipe
CMP	Constrained Market Pricing
CN	Canadian National Railway
CNW	Chicago & NorthWestern
COBRA	Consolidated Omnibus Budget Reconciliation Act
CPI	Consumer Price Index
CSXT	CSX Transportation, Inc.
CTC	Central Traffic Control
CWR	Continuous Welded Rail
CY	Cubic Yards
DCF	Discounted Cash Flow
DFE	Difluoroethane
DME	Dimethyl Ether
DMF	Dimethyl Formamide
DMS	Dimethyl Sulfate
DOT	U.S. Department of Transportation
DP	Distributed Power
DRR	DuPont Stand-Alone Railroad
DTL	Direct to Locomotive Fueling
EDI	Electronic Data Interchange
EEO	Equal Employment Opportunity
EIA	Energy Information Administration
EOTD	End of Train Device
FED	Failed-equipment Detector
FRA	Federal Railroad Administration
FSC	Fuel Surcharges

G&A	General and Administrative
GDP-IPD	Gross Domestic Product – Implicit Price Deflator
GWR	Gross Weight on Rail
HCl	Hydrochloric Acid (a/k/a Muriatic Acid)
HDF	On-Highway Diesel Fuel Index
HR	Human Resources
ICC	Interstate Commerce Commission
IDC	Interest During Construction
IDS/IPS	Intrusion Detection System/Intrusion Prevention System
ISS	Interline Settlement System
IT	Information Technology
KCS	Kansas City Southern Lines
LAN	Local Area Network
MACRS	Modified Accelerated Cost Recovery System
MIT	Massachusetts Institute of Technology
MGT	Million Gross Tons
MLO	Manager of Locomotive Operations
MMF	Monomethyl Formamide
MMM	Maximum Markup Methodology
MOW	Maintenance of Way
MTO	Manager of Train Operations
NCREIF	National Council of Real Estate Investment Fiduciaries
NDGPS	Nationwide Differential GPS
NPI	NCREIF Property Index
NS	Norfolk Southern Railway Company
NT/PC	Network Personal Computer
O/D	Origin/Destination
OS	Operating Station
OSHA	Occupational Safety and Health Administration
PDO	Bio-Propanediol
Pet Coke	Calcined Petroleum Coke
PPI	Producer Price Index
PTC	Positive Train Control
R/VC	Revenue to Variable Cost
RCAF-A	Rail Cost Adjustment Factor, adjusted for productivity
RCAF-U	Rail Cost Adjustment Factor, unadjusted for productivity
RMI	A GE Transportation Company
RMS	RMI's Revenue Management Services System
ROW	Right of Way
RSIA	Rail Safety Improvement Act of 2010
RTC	Rail Traffic Controller Model
SAC	Stand-Alone Cost
SARR	Stand-Alone Railroad
SEC	Securities Exchange Commission
SO3	Sulfur Trioxide
SPLC	Standard Point Location Code
STB	Surface Transportation Board

STCC	Standard Transportation Commodity Code
STEO	Short-Term Energy Outlook
T&E	Train and Engine
TCS	Triple Crown Services
TDIS	Thoroughbred Direct Intermodal Services
TiCl4	Titanium Tetrachloride
TiO2	Titanium Dioxide
TMS	RMI's Transportation Management Services System
TRN	NS Train Event Train Symbol
UP	Union Pacific Railroad
UPS	Uninterruptible Power Supply
URCS	Uniform Railroad Costing System
WAN	Wide Area Network
WFL	Waste, Flammable Liquid
WTI	West Texas Intermediate

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Part I

PUBLIC VERSION

PART I

COUNSEL'S ARGUMENT AND SUMMARY OF EVIDENCE

Pursuant to the procedural schedule served by the Surface Transportation Board ("Board" or "STB") in this docket on January 13, 2012, E.I. du Pont de Nemours and Company ("DuPont") hereby submits its Opening Evidence and Argument on both market dominance and stand-alone costs ("SAC").[1] DuPont challenges the reasonableness of common carrier rail rates established by Norfolk Southern Railway Company ("NS") for 138 issue movements involving the transportation of the following 26 commodities:

1. Acid, Glycolic
2. Acid, Sulfuric
3. Acid, Spent Sulfuric
4. Acid, Fuming Sulfuric ("Oleum")
5. Acid, Muriatic ("Hydrochloric Acid")
6. Aniline Oil
7. Bio-Propanediol ("PDO")
8. Caustic, Potassium ("Caustic Potash")
9. Caustic, Sodium ("Caustic Soda")
10. Chlorine
11. Dimethyl Ether ("DME")
12. Difluoroethane ("DFE")
13. Dimethyl Formamide ("DMF")
14. Dimethyl Sulfate ("DMS")
15. Lime
16. Methylamines, Anhydrous ("AHMs")
17. Methylamines, Aqueous ("AQMs")
18. Monomethyl Formamide ("MMF")
19. Petroleum Coke ("Pet Coke")
20. Polyethylene
21. Sodium Methylate
22. Sulfur Trioxide
23. Titanium Dioxide
24. Titanium Tetrachloride ("TiCl")
25. Waste, Flammable Liquid ("WFL")
26. Zircon Sand

[1] Throughout DuPont's Opening Evidence, all text within single brackets is {CONFIDENTIAL} and all text within double brackets is {{HIGHLY CONFIDENTIAL}} pursuant to the Protective Order adopted in the Board's decision served on January 11, 2011 in this proceeding.

The 17 movements identified in Exhibit A to DuPont's Third Amended Complaint, filed December 5, 2011, are single line NS movements from origin to destination. The 121 movements identified in Exhibit B to that Complaint are joint line movements for which DuPont has challenged just the NS bottleneck segment rate. DuPont has lawfully challenged just the NS portion of the through movement rates, pursuant to the "contract exception" to the Board's "bottleneck" rule. See Cent. Power & Light Co. v. S. Pac. Transp. Co. (Bottleneck Decision), 1 S.T.B. 1059, 1078 (1996), aff'd sub nom MidAmerican Energy Co. v. STB, 169 F.3d 1099 (8th Cir. 1999). DuPont has entered into contracts with the connecting line-haul carriers.[2]

DuPont's Opening Evidence follows the format set forth in General Procedures for Presenting Evidence in Stand-Alone Cost Rate Cases, STB Ex Parte No. 347 (Sub-No. 3) (served March 12, 2001) [hereinafter General Procedures]. As shown in Part II of this Opening Evidence, NS possesses market dominance over each of the issue movements, pursuant to 49 U.S.C. §§ 10701(d)(1) and 10707. Part II-A establishes that the challenged rates exceed 180% of variable costs. Part II-B establishes the absence of effective competition from alternative transportation providers. Part III of this Opening Evidence demonstrates that the challenged rates are unreasonable because they exceed the SAC rate. In Part IV, DuPont sets forth the qualifications of its witnesses for both the market dominance and SAC evidence.

The remainder of this Part I presents the legal argument and a summary of DuPont's Opening Evidence in the following structure:

Part I-A.1 addresses quantitative market dominance
Part I-A.2 addresses qualitative market dominance
Part I-B summarizes the SAC evidence
Part I-C summarizes DuPont's request for relief

[2] See Dup. Op. Workpaper "Rail Contracts" folder.

A. MARKET DOMINANCE EVIDENCE AND ARGUMENT.

"Market dominance" is defined as "an absence of effective competition from other rail carriers or modes of transportation for the transportation to which a rate applies." 49 U.S.C. § 10707(a). "Effective competition" means that, "if a carrier raises the rate for such traffic, then some or all of that traffic will be lost to other carriers or modes." CF Indus., Inc. v. STB, 255 F.3d 816, 821 (D.C. Cir. 2001) (quoting Mkt. Dominance Determinations & Consideration of Prod. Competition, 365 I.C.C. 118, 129 (1981) [hereinafter Market Dominance Determinations], aff'd en banc sub nom. W. Coal Traffic League v. United States, 719 F. 2d 772 (5th Cir. 1983)). There is both a quantitative and a qualitative component to market dominance. Market Dominance Determinations, 365 I.C.C. at 131-32. First, the Board must find that the challenged rate is at least 180% of the carrier's variable cost of providing the service. 49 U.S.C. § 10707(d)(1)(A). Second, the Board must determine that neither other rail carriers nor other modes are effective competitive constraints upon the challenged rates. DuPont has satisfied both of these requirements in this Opening Evidence.

1. NS Possesses Quantitative Market Dominance.

A rail carrier has the burden of proof to establish the absence of quantitative market dominance (*i.e*, its revenue/variable cost ratio is below 180%). 49 U.S.C. § 10707(d)(1)(B). DuPont has established NS's quantitative market dominance in Part II-A, which calculates R/VC ratios for the issue movements that exceed 180% and are as high as 1043%. See Exhibits II-A-1 through 12.

On December 22, 2011, DuPont and NS filed their "Joint Submission of Operating Characteristics" in this proceeding. See Exhibit II-A-13. Although they were able to agree upon six of the nine traffic and operating inputs to calculate the variable cost of each issue movement, they were not able to agree upon loaded miles, tons per car, and car type (for just three

movements). In this Opening Evidence, DuPont now accepts the NS car type (*e.g.* tank car > 22,000 gallons) for the three movements that were in dispute, which leaves mileage and tons per car still in dispute.

DuPont has used the predominant route miles to calculate the variable cost for all but 20 of the issue movements. DuPont adopted the predominant route convention in order to address significant anomalies in the NS traffic data. For any given movement, the NS data frequently contained miles that ranged from zero miles to many multiples of the predominant route mileage. Exhibit II-A-14 provides examples of these anomalies. The NS traffic data contained so many of these mileage variations and other data anomalies that DuPont adopted the predominant route convention as the best means to address these problems. The justification for using the predominant route mileage is that the route followed most often by NS for each issue movement represents the most efficient route. For consistency, DuPont also has used the predominant route analysis to calculate the weighted average tons per car.

DuPont applied one exception to the predominant route analysis for 20 issue movements in order to address extraordinarily long back-haul movements in the NS traffic data. In this case, DuPont is using the term "back-haul" in reference to movements where a rail car travels in the opposite direction of the destination and then doubles back to reach the destination (*e.g.*, a point B to C movement that first travels to points A and/or D before ending at point C). Although DuPont understands that some back-hauls are an inherent part of a network system, and has included back-haul miles in the predominant route analysis, there are 20 issue movements that have such extraordinarily long back-hauls, either in absolute miles or as a proportion of total distance, that there was no obvious network efficiency justification for them and NS has not provided any other justification.

In Exhibits II-A-17 through 36, for each of the 20 issue movements with extraordinarily long back-haul miles, DuPont identifies the back-haul miles, provides an overview of the impact of including these miles on NS variable costs, provides a schematic of the NS route, and explains how it determined the miles that it used for the variable cost calculation. DuPont used the following alternative methodologies to determine miles for these 20 issue movements:

- If the NS car event data contained instances where NS had handled the issue movement on routes without back-haul miles, DuPont used those miles.
- If the NS car event data did not contain any instances of the issue movement without back-haul miles, DuPont subtracted the back-haul segment miles from the predominant route miles.

2. NS Possesses Qualitative Market Dominance.

Qualitative market dominance has two components: intramodal and intermodal competition. As the party with the burden of proof on this issue, DuPont must make a *prima facie* showing and NS "then must rebut that showing or suffer the consequence." McGraw Edison Co. v. Alton & S. Ry., 2 I.C.C. 2d 102, 106 (1986). DuPont has made a *prima facie* showing that there is no effective intramodal or intermodal competition for any of the issue movements.

a. Intramodal competition does not exist for the issue movements.

Because "[i]ntramodal competition refers to competition between two or more railroads transporting the same commodity between the same origin and destination," there can be no intramodal competition where NS is the sole rail carrier at either the origin or destination. Ariz. Pub. Serv. Co. v. Atchison, Topeka & Santa Fe Ry., 2 S.T.B. 367, 373 (1997) [hereinafterAPS]; see also, Market Dominance Determinations, 365 I.C.C. at 132; W. Tex. Utils. Co. v. Burlington N. R.R.., 1 S.T.B. 638, 645 (1996) [hereinafter West Texas Utilities]; Consol. Papers, Inc. v.

Chi.& Nw. Transp., Inc., 7 I.C.C.2d 330, 341 (1991) [hereinafter Consolidated Papers] ("In analyzing the possible presence of intramodal competition, we may eliminate movements from consideration on any of three bases: (1) the lack of more than one independent route. . . .").

For each of the 138 issue movements, NS is the only rail carrier that serves the origin, the destination, or both. All 17 issue movements in Exhibit A to DuPont's Third Amended Complaint are captive to NS at both the origin and destination. Eighty-four issue movements in Exhibit B to the Complaint involve origins where NS is the only railroad that can provide service. Thirty-seven issue movements in Exhibit B involve destinations where NS is the only railroad that can provide service. There is no intramodal competition possible for any of these lanes because NS is the sole railroad that serves either the origin or destination, or both. Therefore, it is impossible to use rail transportation for any of the issue movements without obtaining a portion of that service from NS.

b. Intermodal Competition either does not exist or is not an effective competitive constraint upon the challenged rates.

Intermodal competition "refers to competition between rail carriers and other modes for the transportation of a particular product between the same origin and destination." Market Dominance Determinations, 365 I.C.C. at 133. To the extent intermodal transportation alternatives exist for the issue movements, they are mostly in the form of direct truck transportation, rail-to-truck transloading, or in a very small number of lanes, barges. The fact that alternative transportation modes may be possible, however, does not make such modes feasible "—a test of feasibility must include considerations of economic and physical practicality, as well as safety." Gen. Elec. Co. v. Balt.& Ohio R.R., No. 38125S, 1984 ICC LEXIS 206, at *5 (ICC Oct. 12, 1984) [hereinafter General Electric]. Even though such alternatives may exist, the Board must determine whether they are an "effective" constraint upon

NS's pricing. West Texas Utilities, 1 S.T.B. at 646. Although the Board will consider potential competition, in addition to actual or historical competition, the potential competition must be "sufficiently realistic to effectively constrain the rail rates." Dayton P&L Co. v. Louisville & Nashville R.R., 1 I.C.C. 2d 375, 383 (1985).

The Board has provided guidance in the form of a non-exclusive list of evidence that the parties may present to address market dominance. Among the factors relevant to determining whether effective competition from trucks exists are: (i) the physical characteristics of the product in question that may preclude transportation by motor carrier; (ii) the amount of the product in question that is transported by motor carrier where rail alternatives are available; (iii) the amount of the product that is transported by motor carrier under transportation circumstances (*e.g.*, shipment size and distance) similar to rail; and (iv) the transportation costs of the rail and motor carrier alternatives. Market Dominance Determinations, 365 I.C.C. at 133. For water carriage, those factors include: (i) the number of alternatives involving different carriers; (ii) feasibility, as evidenced by pertinent physical characteristics, for the product in question, of the transportation or routing associated with each alternative; (iii) feasibility as evidenced by the access of both the shipper and receiver to each alternative; and (iv) the transportation costs of each alternative. Id.

The Board has also noted that:

> If a market is to be truly competitive, shippers must be able to respond quickly to changes in transportation charges. They must be in a position to shift their demand from one rail carrier to other rail carriers or carriers of other modes. Such a shift in demand requires not only the availability of carriers ready to provide a comparable service, but also the ability of shippers to take advantage of that service.

Special Procedures for Making Findings of Mkt. Dominance as Required by the R.R. Revitalization and Regulatory Reform Act of 1976, 353 I.C.C. 874, 929 (1976) [hereinafter

Special Procedures]. All of the above considerations strongly demonstrate NS's market dominance over the issue movements.

(1) Trucking of hazardous materials is undesirable as a matter of public policy when rail is a viable option.

Safety concerns are a relevant factor in determining the feasibility of an alternative transportation mode. See General Electric, 1984 ICC LEXIS 206, at *4-5 (stating that "[s]afety considerations also contribute to the unfeasibility of the motor carriage alternative" and "a test of feasibility must include considerations of economic and physical practicality, as well as safety"). For example, the agency has considered whether a "significant diversion of traffic to motor carriers would result in substantial highway movement, loading, and unloading of a hazardous commodity" to be a factor that undermines the feasibility of truck alternatives. Id. Such considerations are consistent with the rail transportation policy "to operate transportation facilities and equipment without detriment to the public health and safety." 49 U.S.C. § 10101(8).

Of the 26 issue commodities, 19 are regulated as hazardous materials by the U.S. Department of Transportation ("DOT"), and of those, 5 are toxic inhalation hazards ("TIHs"). Those commodities fall within the following DOT hazard classes:

Class 2.1: Flammable Gases
Anhydrous Methylamines
Difluoroethane
Dimethyl Ether

Class 2.3: Poisonous Gas
Chlorine**

Class 3: Flammable and Combustible Liquid
Aqueous Methylamines
Dimethyl Formamide
Liquid Flammable Waste
Sodium Methylate

Class 6.1: Poisonous Materials
Aniline Oil
Dimethyl Sulfate**

Class 8: Corrosive Material
Fuming Sulfuric Acid**
Glycolic Acid
Hydrochloric (Muriatic) Acid
Potassium Caustic
Sodium Caustic
Spent Sulfuric Acid
Sulfuric Acid
Sulfur Trioxide**
Titanium Tetrachloride**

**Indicates a TIH Material

The hazardous nature of these commodities makes bulk truck transportation particularly undesirable. Because rail cars hold 4-5 times more volume than bulk trucks, truck transportation requires 4-5 times more handling than rail transportation in the form of more connections for loading and unloading. Transloading adds 1-2 more connections at the bulk terminal, which increases the total number of additional connections to 5-7. Each connection increases the potential for a release of these hazardous materials. Moreover, 4-5 times more truck than rail shipments means 4-5 times more risk of an accidental release on the nation's highways. Therefore, DuPont, its suppliers, and its customers greatly prefer to ship and receive hazardous materials by rail.

In addition, with respect to TIH commodities, the DOT has stated that "[t]he public interest would be ill served if there were a significant shift to the transportation of these commodities by truck."[3] According to the DOT, because four tank trucks are needed to transport the equivalent volume of a single rail tank car, "and trucks operate in close proximity with

[3] See Comments of the U.S. Dep't of Transp. 6 (filed May 12, 2012 in Union Pac. R.R.—Pet. for Declaratory Order, Finance Docket No. 35504). At page 12, DOT also declared that "[d]iversion of TIH materials traffic from rail to the highways is neither practicable nor consistent with public safety."

passenger vehicles[,] [s]hifting the movement of the TIH commodities to highways would lead to increased fuel consumption, air pollution, and costs of essential goods, and would likely result in more deaths and injuries since trucks are involved in many more accidents than rail tank cars."[4] While TIH materials pose greater risks than many other hazardous materials, the concerns expressed by DOT also are relevant to other hazardous materials. Indeed, the Board itself has noted that "[f]or many hazardous materials . . . , rail is the safest and most efficient mode of transportation."[5]

Consistent with these conclusions, DuPont attempts to minimize truck shipments for most of the issue commodities that are hazardous, if it ships by trucks at all, and it never transloads any of the TIH commodities or most of the hazardous materials. To the extent that DuPont uses trucks to transport the issue commodities that are hazardous materials, it does so primarily over short distances, to serve non-rail customers, or to expedite a shipment to a rail-served customer. DuPont uses the greatest caution when shipping by trucks—historically at greater cost than rail shipments, until recently when extraordinary NS rate increases actually have made trucks a lower-priced alternative for many of the hazardous material issue movements. However, even after NS rates became higher (in some cases dramatically higher) than truck rates for some of the issue movements, DuPont has not switched to trucks because rail is safer.

DuPont's use of trucks for mostly shorter distance movements is consistent with national shipping patterns for hazardous materials, as reflected in the federal government's 2007

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[4] Id. See also, Office of Freight Mgmt. and Operations, Fed. Highway Admin., Freight Facts and Figures 200853 (2008), available at http://www.ops.fhwa.dot.gov/freight/freight_analysis/nat_freight_stats/docs/08factsfigures/table5_3.htm. The number of large truck accidents was 367,920 in 2006 vs. 2962 for rail; less than one percent of truck.

[5] Common Carrier Obligation of Railroads—Transportation of Hazardous Materials, 73 Fed. Reg. 32,786 (June 10, 2008).

Commodity Flow Survey ("CFS").[6] The CFS shows a dramatic difference in the average miles per hazardous material shipment by truck versus rail.[7] Trucks averaged 59 miles per hazardous material shipment, while rail averaged 578 miles. This is consistent with two facts: (1) trucks compete with rail almost exclusively at distances of just a few hundred miles, and (2) shippers attempt to minimize truck shipments of hazardous materials over long distances.

The CFS also broke out truck shipments by "for-hire" and "private" truck. The average distance of "for-hire" truck shipments was 214 miles, while the average distance of private truck shipments was just 32 miles. Because private trucks also accounted for 59% of the total truck tons, it is clear that the distribution of total truck shipments was heavily weighted with more shipments below the average total truck distance of 59 miles, offset by a smaller number of outlier distances above the average. This is consistent with most truck movements being short distances, except for shipments to non-rail customers and a few expedited shipments to rail customers at longer distances.

Another informative point from the survey is the mileage differential between all commodities and just hazardous materials.[8] Across all commodities, the average distance per shipment was 580 miles, in contrast to just 96 miles for hazardous materials, which is an 83% decline. This reflects greater reluctance to transport hazardous materials over long distances. More striking, however, is this differential when broken out by truck and rail. For just trucks, the average distance per shipment for all commodities was 187 miles, in contrast to 59 miles for hazardous materials, which is a reduction of 68%. For just rail, the average distance per shipment for all commodities was 691 miles, in contrast to 578 miles for just hazardous

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[6] See Bureau of Transp. Statistics, Commodity Flow Survey, http://www.bts.gov/publications/commodity_flow_survey/index.html (last visited April 22, 2012).
[7] See Dup. Op. Workpaper "CFS_2007-00H01.pdf" in the "CFS" folder.
[8] Compare Dup. Op. Workpapers "CFS_2007-00H01.pdf" and "CFS_2007-00P1.pdf" in the "CFS" folder.

materials, which is a reduction of 16%. It is notable that there is a much sharper decline in average truck miles than average rail miles, which is consistent with a much greater reluctance to ship hazardous materials long distances by truck.[9]

The hazardous characteristics of a commodity are highly relevant factors that should be carefully considered among the market dominance factors. Most hazardous material shippers like DuPont still choose rail whenever it is a viable option, even if truck rates are lower, because rail is the safer mode. The Board, therefore, should carefully consider the consequences of concluding that market dominance is lacking for hazardous materials solely on the basis of lower transportation rates for trucks or transloading. If a shipper were to select trucks solely on the basis of a lower price, that would be contrary to a public policy that favors rail over truck transportation of hazardous materials in order to minimize the risk to the general public of an accident and release of those materials. The Board should not send a message to shippers that trucking of hazardous materials is acceptable solely to obtain a better price. Furthermore, the Board should not signal rail carriers who may not want to handle a particular hazardous material that they can increase their rates to levels that would provide incentives to shippers to use lower-priced truck alternatives and avoid regulatory scrutiny of those higher rail rates.

(2) Alternative transportation for joint line movements must be between the origin or destination served by NS and the interchange point with the connecting carrier.

Congress has required the Board to determine "whether the rail carrier proposing the [challenged] rate has market dominance over the transportation to which the rate applies."[10] For each of the Complaint Exhibit B movements, because DuPont has challenged "bottleneck" rates,

[9] An alternative way to analyze the CFS data is to compare just "Basic Chemicals" with all commodities. For Basic Chemicals, the average truck miles declined by 37 % versus average truck miles for all commodities. But average rail miles increased by nearly 16% versus average rail miles for all commodities, which reflects an overall smaller reliance upon trucks and a greater reliance upon rail for these hazardous shipments. See Dup. Op. Workpaper "Commodity Flow Survey.pdf," Table 7, in the "CFS" folder.

[10] 49 U.S.C. § 10707(b).

market dominance is to be evaluated solely between the origin and destination covered by the bottleneck rate.

In Minnesota Power, Inc. v. Duluth, Missabe & Iron Range Ry., 4 S.T.B. 64 (1998), on reconsideration, 4 S.T.B. 288 (1999) [hereinafter "DMIR I" and "DMIR II"], the complainant challenged the defendant rail carrier's rate for the transportation of coal from the interchange with BNSF at Keenan, Minnesota to a power plant at Laskin, Minnesota.[11] BNSF transported the coal from the origin mines to the Keenan interchange pursuant to a contract.[12] The defendant sought discovery of an alleged intermodal alternative to its rail service that involved rerouting the complainant's traffic on BNSF to a different location than the Keenan interchange and transloading from rail-to-truck at that location for final delivery to Laskin, thereby by-passing the interchange altogether.[13] The Board denied the defendant's motion to compel discovery regarding this alternative because the alternative represented geographic, not intermodal, competition.[14] In explaining its decision, the Board observed that:

> The position advocated by DMIR is contrary to both our *Bottleneck* and *Product and Geographic II* decisions. Under 49 U.S.C. 10707, our market dominance inquiry is limited to whether there are effective competitive alternatives "for the transportation to which [the rate at issue] applies." In the *Bottleneck* decisions, the Board concluded that, where there is a contract over the non-bottleneck segment of a through movement, a rate challenge must necessarily be confined to the bottleneck segment. Thus, the transportation to which the separately challengeable bottleneck-segment rate applies is not the full through movement (from the mines to Laskin), but rather only DMIR's movement (from Keenan to Laskin). Accordingly, under the circumstances presented here, the fact that the coal MPI receives at Laskin comes from the Montana and Wyoming mines served by BNSF is irrelevant. Because the transportation to which the rate at issue applies is limited to the movement between Keenan and Laskin,

[11] DMIR I, 4 S.T.B. at 64.
[12] DMIR II, 4 S.T.B. at 291.
[13] Id.
[14] DMIR I, 4 S.T.B. at 66; DMIR II, 4 S.T.B. at 291-92.

> transportation alternatives involving service to or from other points would constitute geographic competition.[15]

Thus, the Board held that "evidence as to a trucking alternative from any point other than Keenan may not be considered."[16]

Therefore, for the joint line issue movements in Complaint Exhibit B, the Board should evaluate market dominance only for the NS segment of the movement. Where the NS segment is from the origin to an interchange, the alternative transportation must be from the same origin to the same interchange, as opposed to being from the origin to the final destination or to an alternate interchange. Similarly, where the NS segment is from an interchange to the destination, the alternative transportation must be from the same interchange to the same destination, as opposed to being from an alternate interchange to the destination. While this may not always be the most efficient or lowest cost alternative for the entire through movement, this is the analysis required by both the Board's Bottleneck Decision[17] and Product and Geographic II[18] decision.

(3) Higher-Priced transportation alternatives provide conclusive evidence of NS's market dominance.

If a transportation alternative charges rates that are substantially more than the issue rail rates, that alone is sufficient to demonstrate that the alternative transportation is not an effective competitive constraint. FMC Wyo. Corp. v. Union Pac. R.R., 4 S.T.B. 699, 719 (2000) [hereinafter FMC] ("Given the substantial rate disparity between the two modes, we are satisfied that trucking is not an effective competitive alternative for those shipments that can be received

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[15] DMIR II, 4 S.T.B. at 292 (footnotes omitted) (emphasis added).
[16] Id.
[17] Cent. Power & Light Co. v. S. Pac. Transp. Co. (Bottleneck Decision), 1 S.T.B. 1059, 1074 (1996) ("[W]hen one of the components of service over the through route is embodied in a transportation contract, we cannot assess the reasonableness of the through rate in its entirety. . . . In a complaint against a bottleneck proportional rate that operates in combination with a contract rate, . . . we may consider **only** the reasonableness of the bottleneck rate.") (emphasis in original).
[18] Mkt. Dominance Determinations—Prod. & Geographic Competition, 3 S.T.B. 937, 950 (1998) (declaring that the Board will not consider geographic competition in its market dominance determinations).

by rail."); Ariz. Pub. Serv. Co. v. United States, 742 F.2d 644, 650-51 (D.C. Cir. 1984) [hereinafter Arizona] (holding that, because of the significant rate difference, complainants receipt of oil by both trucks and railroad did not make trucks an effective competitive alternative); Atchison, Topeka & Santa Fe Ry. v. ICC, 580 F.2d 623, 636 (D.C. Cir. 1978) ("Shippers must be able to make the choice to use an alternative service without absorbing substantial economic loss."). Although the Board has not defined the term "substantial rate disparity," it has concluded that a 10% rate disparity after a substantial rail rate increase was sufficient to demonstrate a lack of effective competition. E.I. du Pont de Nemours & Co. v. CSX Transp., Inc., STB Docket No. 42099, slip op. at 7 (served June 30, 2008) [hereinafter DuPont (Plastics)].

Indeed, NS itself has provided some of the most compelling evidence of its market dominance over the issue movements through its extremely aggressive pricing. For almost every issue movement with a multi-year rate history, NS has increased the issue rate dramatically in just the past two years, in many cases taking back-to-back years of double- and even triple-digit rate increases since 2009.[19] For the Complaint Exhibit A single-line movements, the cumulative four-year impact of the NS rate increases is as high as 433%. For the joint line movements in Complaint Exhibit B, the double- and triple-digit NS rate increases in the two years since NS began Rule 11 pricing {{[redacted]}}. DuPont has evaluated each lane where this occurs in greater detail in the discussion of each commodity in Part II-B. See also infra Part I-A.2.b.(4).

[19] See Exhibit II-B-3 (Dup. Op. Workpaper "Case Lane Rate History" in the "Rates" folder). Of the 138 case lanes, 26 lack at least two years of rate history to evaluate.

In the following subsections, DuPont provides an overview of the issue movements where the alternative transportation options charge rates that are at least 10% more than the rail rates even after substantial rate increases by NS. DuPont has compared its direct rail transportation costs with the costs of direct truck alternatives, truck-rail transload alternatives, and where physically possible, barge alternatives. Where available, DuPont has used the rates from its contracts with motor carriers and other railroads. Otherwise, DuPont requested rates from the service provider.

(a) Higher-cost direct trucking alternatives.

In Exhibit II-B-1 (Dup. Op. Workpaper "Direct Truck Costs," in the "Rates" folder), DuPont has estimated the rates for trucking directly from the origin to the destination for each issue movement and compared those rates with its direct rail rates. As noted in Part I-A.2.b.(2), supra, direct trucking from the origin to the destination is not alternative transportation for the NS bottleneck segment of the joint line issue movements in Complaint Exhibit B. Rather, direct trucking may only be considered for the NS-direct movements in Complaint Exhibit A. In principle, direct trucking for a bottleneck segment is in fact a transload at the rail interchange point. Nevertheless, DuPont has evaluated direct trucking alternatives for all of the issue movements where trucking is possible, because that option may be the most efficient, and thus lowest cost, alternative regardless if it conforms to the DMIR and Bottleneck Decision.[20]

[20] In the interest of being complete, DuPont also has calculated direct trucking rates to or from the NS interchange locations, consistent with the DMIR and Bottleneck Decision. See Dup. Op. Workpaper "Alternate Truck Cost Analysis" in the "Rates" folder. In that analysis of the Complaint Exhibit B lanes (which are all bottleneck segments), DuPont calculated the cost of trucking directly to/from bulk terminals served by the connecting rail carriers in the vicinity of the current rail interchange. The total number of issue movements evaluated by the "Alternate Truck Cost Analysis" is 63. Of those 63 movements, DuPont was able to identify only 16 with a bulk terminal served by the connecting carrier within the vicinity (*i.e.*, a 25 mile radius) of the rail interchange with NS. Consequently, DuPont concluded that there is no direct truck option that complies with DMIR for the other 47 movements to/from the interchange, because of the inability to transload to/from the connecting carrier in the vicinity of the rail interchange location.
The remaining 58 Complaint Exhibit B movements were excluded altogether from the "Alternate Truck Cost Analysis" for one of two reasons. First, 54 lanes were excluded because the issue commodity cannot be transloaded

Of the 138 issue movements, DuPont determined the direct truck costs for 134 movements. DuPont excluded the 4 chlorine movements because the distances were too great to seriously consider trucking alternatives for this TIH commodity. Of the 134 evaluated movements, 74 have direct truck alternatives that are at least 10% more costly than direct rail service. These movements include 3 of 19 anhydrous methylamine movements, 4 of 5 aqueous methylamine movements, 1 of 3 bio-propanediol movements, both difluoroethane movements, 2 of 7 dimethyl ether movements, 4 of 5 dimethylformamide movements, 1 of 3 dimethyl sulfate movements, the glycolic acid movement, the monomethyl formamide movement, 1 of 4 aniline oil movements, 4 of 5 petroleum coke movements, all 4 polyethylene movements, both sand zircon movements,[21] 6 of 9 sodium caustic movements, 16 of 26 sulfuric acid movements, 21 of 25 titanium dioxide movements, and 1 of 2 flammable waste movements.

Therefore, 78 of the issue movements (the 74 higher-priced truck movements plus 4 chlorine movements) do not have an effective direct truck alternative based upon the cost differential alone. As discussed in greater detail in the evidence for each commodity in Part II-B.2, even those issue movements with lower priced direct truck alternatives are not subject to effective competition due to a multitude of other factors that preclude direct trucking. Furthermore, as discussed in Part I-B.2.b.(4), infra, aggressive NS rate increases over the past few years show that comparable or lower truck rates are not an effective constraint upon NS rates, but actually are evidence of NS exercising its market power.

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due to various reasons that are described in the discussion of each commodity in Part II-B and summarized in Part I-A.2.b.(3)(b), infra. Second, in Exhibit II-B-2 (Dup. Op. Workpaper "Transload Cost Analysis," in the "Rates" folder), which is discussed in Part I-A.2.b.(3)(b), infra, DuPont has evaluated origin-to-destination transload alternatives for 4 of the issue movements (Lanes B-93, 99, 100, and 118) based upon the same routing (*e.g.*, truck to/from bulk terminal at rail interchange) as the "Alternate Truck Cost Analysis." Therefore, DuPont has not duplicated those lanes in the "Alternate Truck Cost Analysis."

[21] DuPont has calculated a rate for sand zircon in both bulk trucks and in bags. While only the bulk truck rate exceeds the rail rate, bags are not a practical option for this movement, as discussed in Part II-B.2.z., infra.

(b) Higher-cost truck transloading alternatives.

In Exhibit II-B-2 (Dup. Op. Workpaper "Transload Cost Analysis," in the "Rates" folder), DuPont has estimated the rates for alternative transportation involving a rail-truck transload combination from the origin to the destination for each issue movement and compared those rates with its direct rail rates. DuPont did not consider transloading alternatives for any of the Complaint Exhibit A movements because those lanes, which are captive to NS at both the origin and destination, would require at least two transloads in order to by-pass NS.

Nor did DuPont evaluate transload alternatives for every Complaint Exhibit B movement because several of the issue commodities have characteristics that make transloading difficult and/or highly undesirable. For example, DuPont does not transload any of the 5 TIH issue commodities (*e.g.* chlorine, DMS, Oleum (>30%), sulfur trioxide, and titanium tetrachloride). In addition, anhydrous methylamines, aqueous methylamines, aniline oil, and Oleum (<30%)[22] are not transloaded because few commercial terminals, if any, will handle them due to their hazardous traits and extremely noxious odor. DFE and DME require highly specialized transload facilities that are operated by DuPont distributors, which in fact are the destinations for most of those issue movements. Flammable liquid waste is not handled by most commercial bulk terminals because it is a highly flammable hazardous waste that is regulated by the Environmental Protection Agency. DuPont could not find bulk terminals within close proximity to the captive NS facilities that would or could handle the issue movements of caustic potash, lime, or DMF. Thus, DuPont's transload cost analysis is limited to joint line movements of 11 issue commodities: glycolic acid, Oleum (<30%),[23] sulfuric acid, spent sulfuric acid, petroleum

[22] DuPont initially was provided a transload rate for the Oleum (<30%) movement, Lane B-106, but subsequently was informed by the bulk terminal that it could not handle the commodity because of its hazardous traits. Nevertheless, DuPont has retained Lane B-106 in Exhibit II-B-2, with the original rate quote.

[23] Id.

coke, polyethylene, bio-propanediol, sand zircon, caustic soda, sodium methylate, and titanium dioxide.

As noted in Part I-A.2.b.(2), supra, transloading that bypasses the interchange point of the joint line issue movements in Complaint Exhibit B is not a true alternative for the transportation to which the NS bottleneck rate applies. For all but 20 joint line issue movements of the evaluated commodities, DuPont in fact has used the same rail interchange as the issue movement for its transload alternative, consistent with DMIR. For those 20 movements, DuPont could not use the issue movement rail interchange because either the alternative rail carrier could not physically interchange with the connecting carrier at the same location, or routing protocols of the alternative carrier would not permit DuPont to interchange with the connecting carrier at the same location.[24] DuPont submits that its inability to use the direct rail interchange for transloading alternatives precludes consideration of those alternatives in the market dominance analysis. Nevertheless, DuPont has evaluated transloading alternatives for those 20 lanes though they cannot conform to DMIR and the Bottleneck Decision.

Of the 68 issue movements included in DuPont's transload analysis, 41 have rates that are at least 10% higher than the direct rail rates between the origins and destinations. These movements include the Oleum (<30%) movement, 4 sulfuric acid movements, the spent sulfuric acid movement, 1 petroleum coke movement, the MMF movement, all 4 polyethylene movements, both joint line bio-propanediol movements, both sand zircon movements, 6 caustic soda movements, the sodium methylate movement, and 18 titanium dioxide movements.

Therefore, transloading is not an effective competitive alternative to NS for 41 of the Complaint Exhibit B issue movements based upon the cost differential alone. Nor is it an

[24] See Dup. Op. Workpaper "Alternate Transload Cost Analysis" in the "Rates" folder for a list of the 20 lanes and the reason why DuPont could not use the direct rail interchange.

effective alternative for an additional 53 Exhibit B movements due to the practical or physical inability to transload the issue commodities at all. Furthermore, as discussed in greater detail in the evidence for each commodity in Part II-B.2, even the remaining 27 Complaint Exhibit B movements with a comparable or lower priced transload alternative are not subject to effective competition due to a multitude of other factors that render transloading infeasible and/or uneconomic. Finally, as discussed in Part I-B.2.b.(4), infra, aggressive NS rate increases over the past few years show that comparable or lower transloading rates are not an effective constraint upon NS pricing, but actually are evidence of NS exercising its market power.

(c) Higher-cost barge alternatives.

DuPont has estimated direct barge, or barge-to-truck/rail transload, costs for the following 6 issue movements of caustic potash, caustic soda, and DMF:

- Lane B-9: Barge DMF from Belle, WV to Joliet, IL (which is 60 miles from the NS/BNSF rail interchange) and transload to rail for delivery to City of Commerce, CA. See infra Part II-B.2.m.
- Lane B-29: Barge DMF from Belle, WV to Joliet, IL (which is 60 miles from the NS/BNSF rail interchange) and transload to rail for delivery to St. Paul, MN. Id.
- Lane B-47: Barge caustic soda from Charleston, TN to Memphis, TN (which is the NS/CN interchange) and transload to trucks for delivery to Woodstock, TN. See infra Part II-B.2.i.
- Lane B-81: Barge caustic soda from McIntosh, AL to Memphis, TN (although the actual NS interchange is at Mobile, AL) and transload to trucks for delivery to Woodstock, TN. Id.
- Lane B-107: Barge caustic soda directly from Natrium, WV to Belle, WV (although the through rail movement is interchanged to NS at Cincinnati, OH). Id.
- Lane B-125: Barge caustic potash from Charleston, TN to Memphis, TN (which is the NS/CN interchange) and transload to trucks for delivery to Woodstock, TN. See infra Part II-B.2.h.

DuPont was able to combine the volumes in the Lane B-9 and B-29 DMF movements to merit consideration of a barge-rail transload option for both lanes. Although the barge-rail rates

were {{[redacted]}} below the through rail rates, that was without considering a portion of the terminal costs (which could not be estimated on a per ton basis) or any of the {{[redacted]}} infrastructure costs required to enable barge loading of DMF at Belle. Moreover, the barge terminal is approximately 60 miles from either of the issue movement interchange destinations, which creates a DMIR issue as to whether the barge-rail option is an alternative to the issue movements. DuPont contends that, because the connecting rail carrier's rates from Joliet to the final destination are different from its rates from the actual issue movement interchange, these barge alternatives do not comport with DMIR.

The barge alternatives for the Lane B-47 and B-81 caustic soda movements and the Lane B-125 caustic potash movement all involve barge shipments from the various origins to the same barge terminal in Memphis, TN, which is within 7 miles of the Woodstock, TN destination. For Lanes B-47 and 81, because the barge-truck transload alternative rates are {{[redacted]}} higher than the through rail rates, respectively, even before adding any of the terminal costs, this alternative cannot be an effective competitive constraint upon the NS rail rates. For Lane B-125, the barge-truck transload alternative rate is {{[redacted]}} higher than the through rail rate after considering the barge, truck, and terminal costs.

The only issue movement with significantly lower barge transportation rates is caustic soda over Lane B-107. Although the direct barge rate is {{[redacted]}} less than the through rail rate, that is after NS increased its rates by {[redacted]} since just 2009, clearly demonstrating that NS is not constrained by barge competition. Moreover, this rate differential does not include the {{[redacted]}} of infrastructure investment that is required before Belle could unload caustic soda from barges. Furthermore, direct barging is not alternative transportation to the issue

movement under the DMIR precedent, because the challenged NS rate is from the Cincinnati, OH interchange with CSXT to Belle.

Although other issue movements originate and/or terminate on or near navigable waterways, there are a multitude of predicate reasons, which are discussed throughout DuPont's opening evidence, as to why barging is not an option. One of the most significant reasons is the enormous cost of infrastructure investments that would be required to make use of barges. See infra Part I-A.2.b.(5). Another significant set of reasons, which affect all barge shipments to/from Edge Moor and Reybold, DE, are the restrictions imposed by the Delaware Coastal Zone Act. See infra Part I-A.2.b.(7). Some commodities also have product quality concerns associated with transloading that would be required for some barge alternatives. See infra Part I-A.2.b.(6). Many issue movements also do not involve sufficient volumes to fill a barge. Finally, the TIH commodities, aniline oil, and the anhydrous and aqueous methylamines are not transloaded because of their dangerous product characteristics and/or noxious odors; barge transloading options for these commodities were not considered.

(4) Extremely aggressive NS rate increases prove that comparable, or even lower, rates for alternative transportation modes are not an effective competitive constraint.

The presence of similar, or even lower, rates for alternative modes of transportation cannot, by itself, prove the existence of effective competition. Amstar Corp. v. Atchison, Topeka & Santa Fe Ry., No. 37478, 1987 ICC LEXIS 47, at *19 (ICC Nov. 23, 1987) ("[S]imilarity of rates alone does not indicate that motor carriers provided an effective constraint. . . . [T]he fact that motor carrier rates constrain rail rates at some arbitrary level does not necessarily indicate that an effective competitive constraint is in place."). In this proceeding, similar rates are in fact evidence that NS is setting its prices to match those of much higher cost alternatives, and thus, those alternative do not effectively constrain NS's rail rates. Indeed, NS's

willingness and ability to impose enormous rate increases upon DuPont in a short—2-year—span of time without a loss of the issue traffic to alternative modes is among the most compelling evidence of NS's market dominance.

In DuPont (Plastics), STB Docket No. 42099, slip op. at 7-8, the Board declared that:

> Even if we were to find that the cost of trucking the product is similar to the cost of using rail after the CSXT rate increase, it does not follow that the threat of trucking is evidence of effective competition. After all, even a monopolist finds that there is a profit-maximizing price beyond which it cannot raise prices without adversely affecting its bottom line. A carrier possessing market power might set its rates so high that it would begin to lose business to a higher-cost alternative (such as a trucking company). As the Board has previously noted, while this may create an "outer limit" constraint, it does not necessarily mean that effective competition is present.

Id. (emphasis in original) (footnotes omitted). See also, Arizona, 742 F.2d at 650-51 (a pricing constraint does not equate to effective competition). Consequently, the fact that a truck or transload rate is less than or comparable to NS's rates may merely demonstrate that NS has priced up to the nearest, higher cost alternative, not that such alternative constitutes effective competition.

This principle is highly relevant to the issue traffic because NS has increased the challenged rates significantly over the past two years while continuing to maintain a dominant market share. See FMC, 4 STB at 718 (2000) ("the fact that [carrier] matches prices set by alternatives with significantly higher costs, while maintaining a dominant market share, is not enough to demonstrate effective competition for the traffic at issue"). In Special Procedures, 353 I.C.C. at 929, the ICC held that "the absence of any diversion after a reasonable time following a rate increase" is strong evidence of market dominance. A firm with market power also can raise its prices without a net loss of revenue, and a rate increase of 20% has been considered "well

above the standard usually employed to signal a substantial degree of market power" under this standard. CF Indus., Inc. v. STB, 255 F.3d 816, 823-24 (D.C. Cir. 2001).

The rate history from 2007-11 for all of the issue movements, including the break-down between the NS rate and the connecting carrier rates on joint line movements, is presented in Exhibit II-B-3 (Dup. Op. Workpaper "Case Lane Rate History" in the "Rates" folder).[25] As discussed in the preceding subsections, DuPont's rate comparison analyses in Exhibits II-B-1 and -2 show that many of the issue movements have truck or transload rates that are comparable to or below direct rail rates. But as Exhibit II-B-3 shows, for virtually every issue movement where this is the case, it is a very recent phenomenon that has occurred only after NS imposed extremely large rate increases on the issue traffic.

Moreover, many of the issue movements where the alternative rates are lower than the rail rates are truck movements over several hundred miles, which is well outside any range at which trucks are considered to be cost-competitive with rail. For example, the Board has long recognized that "the cost-competitiveness of truck transportation decreases with increasing distance." Consolidated Papers, 7 I.C.C.2d at 337; see also, General Electric, 1984 ICC LEXIS 206 at *5 (finding that "substantial, long-distance truck transportation... would [not] be feasible."). Yet, the challenged rates are higher than truck rates for many of the issue movements at distances between 300 and 1500 miles. DuPont has found this to be true for nearly all of the issue movements covering 21 of the 26 issue commodities.[26]

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[25] Where an issue movement does not have a rate history dating back to 2007, DuPont has shown the earliest date for which a rate is available.

[26] The 5 issue commodities for which recent NS rate increases have been less extreme are PDO, lime, MMF, polyethylene, and sand zircon, which are all non-hazardous materials. See Exhibit II-B-3. For all of those issue movements, except lime, however, the truck and/or transload rates are too high anyway to be a constraint upon NS's rail rates. See Exhibits II-B-1 and 2. In addition, DuPont did not consider truck alternatives at all for chlorine, and thus did not compare alternative transportation rates for that commodity.

In the discussion of each issue commodity in Part II-B.2, DuPont presents evidence, summarized in Exhibit II-B-3, of the very high percentage rate increases that NS has imposed upon the issue movements in just the last 2-3 years. For the joint line movements, DuPont contrasts the NS rate increases with much more moderate rate increases, and in some cases decreases, by the connecting carriers. When those increases are compared against the potential savings from using alternative transportation modes, it is quite clear that those alternative modes were far more expensive than rail service prior to the NS rate increases. In other words, in the past few years, NS has chosen to exploit its market power over the issue movements by increasing its rates so significantly that they now match or exceed the rates charged by much higher cost alternatives, which has reversed the historical price relationship between the modes.

The NS rate increases of the past few years have been indiscriminate in that they have occurred in lanes where alternative transportation options had much higher rates and where they had much lower rates. By increasing its rates so significantly despite the existence of lower alternative transportation rates, NS has demonstrated that those lower rates had no influence on its pricing, and thus are not a constraint at all, much less an effective competitive constraint. Moreover, in other lanes, by increasing its rates so significantly to the point that much higher alternative transportation rates have now become much lower, NS also has demonstrated the absence of any effective constraint upon its pricing from such alternatives.

Although Exhibit II-B-3 shows that this is pervasive across nearly all the issue movements covering 21 of the issue commodities, the following examples stand out as particularly egregious abuses of NS market power:

- For 13 anhydrous methylamine movements, direct truck alternatives have lower rates than rail by as much as 58% at distances ranging from 520 to 1058 road miles. Indeed, 6 of those movements are longer than 900 miles. Of the 5 issue movements with higher truck rates, all of them are longer than 1100 miles and 2 of those movements have a rate

differential of less than 2%. It is inconceivable that trucks would be competitive with rail at such distances due to higher labor, fuel and equipment costs. See infra Part II-B.2.p.

- The two issue movements of flammable liquid waste illustrate the indiscriminate and arbitrary nature of NS's pricing. Lane A-16 has a direct truck alternative that is {{[redacted]}} more expensive than rail. By contrast, the direct truck alternative in Lane B-76 is {{[redacted]}} less expensive. Moreover, this much lower direct truck rate for Lane B-76 is the product of an {[redacted]} NS rate increase since just 2009, while the connecting carrier's rate increased by {{[redacted]}}. See infra Part II-B.2.y.

- After a cumulative two year increase of {[redacted]} in the NS rate and a {{[redacted]}} increase in the connecting rail carrier's rate, the truck rate for titanium tetrachloride (which is a TIH) in Lane B-54 is {{[redacted]}} less than the rail rate for a movement that is 1472 road miles. See infra Part II-B.2.x.

- For petroleum coke, although 4 of 5 issue movements have transload rates that are {{[redacted]}} less than direct rail rates, this is only after NS increased its rates over just 2 years by {[redacted]}. See infra Part II-B.2.s.

- For aniline oil, Lanes B-84 and 115 are alternate rail routes between the same origin-destination pair. Over Lane B-115, the combination of a {[redacted]} NS rate increase and a {{[redacted]}} from the connecting carrier has resulted in {{[redacted]}} truck and rail rates. For Lane B-84, after a {[redacted]} NS rate increase and an {{[redacted]}} connecting carrier rate increase, trucks now cost {{[redacted]}} less. This is inconceivable for trucks shipments that must travel over 600 miles. See infra Part II-B.2.f.

- Both issue movements of muriatic acid, which are direct NS rail movements, have truck alternatives that are {{[redacted]}} lower than the NS rail rates. But this is only after NS increased its rates in these lanes over just 2 years by {[redacted]}, respectively. See infra Part II-B.2.e.

- The issue movement of aqueous methylamines in Lane B-33 has a truck alternative that is {{[redacted]}} lower than the rail rate, despite a road distance of 800 miles, after a {[redacted]} NS rate increase in just 2 years. See infra Part II-B.2.q.

- NS increased the caustic soda rate on Lane B-107 by {[redacted]} in just 2 years to the point where direct trucking is now {{[redacted]}} less. Lanes B-79 and 80 also have {{[redacted]}} lower truck rates after NS rate increases of {[redacted]}. See infra Part II-B.2.i.

- Lanes B-111 and 124 are titanium dioxide movements where the truck rates are within {{[redacted]}} of the through rail rate, after NS increased its rate by {[redacted]} in just 2 years. See infra Part II-B.2.w.

- Lanes B-67 and 68 are titanium dioxide movements where the direct truck rates are lower than the rail rates, despite road distances of 1188 and 759 miles, respectively This is after NS increased its rate in Lane B-68 by {[redacted]} in just 2 years. Id.

- Four sulfuric acid movements stand out as particularly striking examples of NS pricing up to less efficient, higher cost alternatives. For Lane B-134, although the truck distance is nearly 1100 miles, the direct truck rate is just {{ [redacted] }} higher than the through rail rate, after NS increased its rate by {[redacted]} since just 2009, contrasted against just a {{[redacted]}} increase by the connecting carrier over the same time period. Similarly, in Lane A-2, although the truck distance is 686 miles, the direct truck rate is {{ [redacted] }} lower than the rail rate, after NS imposed back-to-back rate increases of {[redacted]} in each of the past two years. Moreover, in Lane B-92, although the truck distance is 546 miles, the direct truck rate is {{[redacted]}} lower than the through rail rate, after NS increased its rate by { [redacted] } since just 2009, contrasted against a {{[redacted]}} cumulative increase by the connecting carrier. In Lane B-101, although the truck distance is 435 miles, the direct truck rate is {{ [redacted] }} lower than the through rail rate, after NS increased its rate by {[redacted]} since just 2009, contrasted against a {{[redacted]}} by the connecting carrier. See infra Part II-B.2.d.

Comparable or lower rates for alternative transportation have been found to constitute evidence of effective competition when railroads have reduced their rates to meet the competitive threat, not increased them. For example, in Consolidated Papers, 7 I.C.C.2d at 337-38, the ICC found trucking to be effective competition based upon the fact that a defendant had lowered its rail rates due to truck competition while also losing market share. In FMC, 4 S.T.B. at 713-14, the Board noted that FMC had used the threat of switching to trucks credibly in the past to obtain rail rate reductions. See also Allied Chem. Corp. v. Ann Arbor R.R. Sys., 1 I.C.C.2d 492, 506-07 (1985) (noting that "[w]idespread price reductions [to keep or attract this traffic] reflect the workings of a competitive marketplace."), rev'd on other grounds, Gen. Chem. Corp. v. United States, 817 F.2d 844 (D.C. Cir. 1987). To the extent that the challenged NS rates are comparable to the rates of alternative modes, this observation is after NS substantially increased its rates, as opposed to a rate decrease in response to a competitive threat.

In some cases, the agency has found market dominance even despite evidence of rail rate reductions in response to lower rates from alternative modes. For example, in McCarty Farms v. Burlington N., Inc., 3 I.C.C.2d 822, 830-31 (1987) [hereinafter McCarty Farms], the ICC found market dominance even though the record showed that BN had reduced its rates to meet truck

and truck/barge competition, because the issue "is whether McCarty has made its case that the BN lacks *effective* competition, *i.e.*, competition adequate to restrain its rates at or below a maximum reasonable level." (italics in original) A critical element in that determination was "the vigor of intermodal competition," which the ICC found lacking because, "even with truck and truck/barge competition, BN has been able to capture the vast majority of the total transportation market" and "its rates have significantly exceeded . . . the BN's costs of providing service." Id. at 831-32. In this case, NS has captured all, or nearly all, of the issue movement volumes at rates with extraordinarily high R/VC ratios.[27]

For the issue movements in this case, NS has not reduced a single rate in response to competition from alternative transportation modes. In fact, it has increased the issue rates at double-, and even triple-, digit rates over just 2 years. There is no evidence that NS's rates have been constrained by alternative modes. It has raised rates dramatically across the board regardless whether its rates were above or below the rates of alternative modes. Moreover, the level of the NS rate increases has stood in stark contrast to the rate increases, and even a few decreases, taken by connecting rail carriers on the joint line issue movements. In many cases, the NS rate increases have reversed the historical relationship between rail and truck rates. Indeed, after the recent NS rate increases, trucks are less expensive at distances far exceeding the those at which truck rates historically have been competitive with rail rates.[28] Moreover, all of

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[27] See Exhibits II-A-1 through 12. Although evidence that rail revenues substantially exceed variable costs by itself does not indicate market dominance, when such data is supported by other evidence, as is the case in this proceeding, it "may serve to buttress a finding that the existing level of competition may not be effective to constrain rail rates to a reasonable," DuPont (Nitrobenzene), slip op. at 5 (served June 30, 2008) (citing McCarty Farms, 3 I.C.C.2d at 832).

[28] See e.g., Union Pac. R.R.—Abandonment—In New Madrid, Scott & Stoddard Counties, MO, STB Docket No. AB-33 (Sub-No. 261), 2009 STB LEXIS 268, at *11 (STB June 17, 2009) (UP argues that trucks are competitive in "similar short-haul markets" of 280 miles); Rail Gen. Exemption Auth.—Exemption of Paints, Enamels, Lacquers, Shellacs, Etc., Ex Parte No. 346 (Sub-No. 33), 1998 STB LEXIS 107, at *8-9 (STB April 20, 1998) (noting CMA testimony that 300-600 mile hauls preclude trucks as viable competitors); Dep't of Transp., 3 S.T.B. 62, 64 n.5 (1998) (scrap metal moving less than 600 miles is vulnerable to truck competition); Union Pac. Corp.—Control &

this has occurred without any loss of the issue traffic to alternative modes. Since "effective competition" means that, "if a carrier raises the rate for such traffic, then some or all of that traffic will be lost to other carriers or modes,"[29] it would be arbitrary to conclude that comparable or lower rates from potential alternative modes have imposed any constraint upon NS in the face of such significant rate increases.

(5) The high cost of infrastructure needed to increase, or in some cases enable, the use of alternative modes renders even lower-priced alternatives uneconomical.

In addition to comparing alternative transportation rates with the challenged rates, the Board considers the costs of converting a facility to enable use of the alternative mode. Int'l Minerals & Chemicals Corp. v. Burlington Northern, Inc., 1986 ICC LEXIS 300, *11 (May 12, 1986). For 16 of the 26 issue commodities, significant infrastructure investments are required before DuPont even could use alternative transportation modes or increase its current use. Although several DuPont facilities in this proceeding are located on navigable waterways, they either do not have any barge facilities at all or do not have facilities that are capable of originating or receiving the issue commodity by barge. Many of the issue DuPont facilities also do not have the capacity to load or unload large numbers of trucks without making significant

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Merger—S. Pac. Rail Corp., 1 S.T.B. 233, 392 (1996) (KCS study considers trucks non-competitive above 500 miles); Rail Gen. Exemption Auth.—Exemption of Grease or Inedible Tallow, Etc, 10 I.C.C.2d 453, 461 (1994) (adopting 500 mile threshold for truck competition); Rail Gen. Exemption Auth. Exemption of Rock Salt, Salt, 10 I.C.C.2d 241, 246 (1994) (trucks are dominant mode at 100-150 miles); Rail Gen. Exemption Auth.—Pet. of AAR to Exempt Rail Transp. of Selected Commodity Groups, 9 I.C.C.2d 969, 975-77 (1993) (exemptions granted where most traffic moves at distances under 200 miles, which are less than the system averages); Union Pac. Corp. .—Control—Mo.-Kan.-Tex. R.R., 4 I.C.C.2d 409, 442-43 (1988) (finding that trucks can be effective competitors for grain up to 250 miles); CSX Corp—Control—Sea-Land Freight Serv., Inc. & Intermodal Sys., Inc., 3 I.C.C.2d 512, 530 (1987) (rail has "a decided competitive edge over motor carriers for COFC movement of about 500 miles or longer"); Chi., Milwaukee, St. Paul and Pac. R.R.—Reorganization—Acquisition by Grand Trunk Corp., Finance Docket No. 28640 (Sub-No. 9), 1984 ICC LEXIS 288, at *206 (ICC Sept. 12, 1984) (truck competition not effective above 425 miles); CSX Corp.—Control—Am. Commercial Lines, Inc., 2 I.C.C.2d 490, 548-49 (1984) ("trucks compete effectively for [grain] traffic on movements of [150-200 miles]"); Nationwide Increased Freight Rates & Charges, 1977, 359 I.C.C. 312, 331 (1978) (truck competition for caustic soda exists up to 200 miles).

[29] CF Industries, Inc. v. STB, 255 F.3d 816, 821 (D.C. Cir. 2001), quoting, Market Dominance Determinations, 365 I.C.C. at 129.

investments in costly infrastructure. In some cases, special equipment also must be purchased or leased. All of these infrastructure costs would be over and above the alternate transportation costs calculated by DuPont.

(a) Anhydrous Methylamines.

Costly infrastructure is required for trucking, transloading, and barging all 19 AHM issue movements, which originate at DuPont's Belle, WV facility. See infra Part II-B.2.p.

Belle has only a single truck loading rack that is capable of loading 5 trucks in 24 hours. But this loading rack also is shared with DME production, and thus is not available to the AHM business around the clock. Belle's 2010 AHM rail shipments would have required nearly {[redacted]} trucks, which is equivalent to 5 additional truck loadings per day, every day of the year. The cost to build an additional loading rack, scale, and concrete pad would be {{[redacted]}}. Because AHMs move in a private fleet of specialized trucks, DuPont also would have to purchase 5 additional trucks at a cost of {{[redacted]}} each. Finally, in order to operate the new truck rack 24/7, DuPont would need to hire 5 additional personnel at an annual cost of {{[redacted]}} per operator. All of these costs apply to both direct trucking and transloading. None of the above considers how DuPont even would manage such a sizeable increase in truck traffic through the Belle facility.

Although Belle, has barge docks, it does not have the infrastructure to ship AHMs by barge. DuPont produces anhydrous mono-, di-, and tri-methylamines, all of which have separate storage that is just adequate for current rail and truck volumes. However, because Belle does not have storage tanks capable of holding barge volumes, it would have to construct storage tanks and piping at a cost of {{[redacted]}}. On top of this cost, DuPont would have to locate and lease pressurized storage tanks at river terminals strategically located to serve multiple customers

efficiently, because its AHM customers are not on navigable waterways and/or do not purchase AHMs in barge-sized volumes.

(b) Aqueous Methylamines

Costly infrastructure is required for trucking, transloading, and barging all 5 AQM issue movements, which originate at DuPont's Belle, WV facility. Because AQMs are AHMs diluted in water, they have many similar infrastructure issues. See infra Part II-B.2.q.

AQMs have only a single truck loading rack that can load {[redacted]} trucks in 24 hours. But that rack also is used to unload inbound raw materials. The greater bottleneck for AQMs, however, is insufficient storage capacity even to load trucks at existing capacity. Because AQMs and AHMs share the same anhydrous supply piping, Belle cannot produce AQMs at the same time it is loading a truck of AHMs, or vice-versa. The AQM storage tanks for aqueous mono- and di-methylamines only hold the equivalent of {{[redacted]}} and {{[redacted]}} trucks, respectively. Consequently, even to load AQMs at the current maximum truck loading capacity, DuPont would have to continuously produce AQMs. But it cannot do both at the same time. The cost of adding storage capacity for AQMs and reconfiguring the piping to permit truck loading and AQM production simultaneously would be {{[redacted]}}. All of these costs apply to both direct trucking and transloading.

Although Belle has barge docks, it cannot ship AQMs by barge because it does not have the infrastructure to do so. The cost of constructing storage tanks and piping adequate for barge volumes would be {{[redacted]}}. On top of this cost, DuPont would have to locate and lease storage tanks at river terminals strategically located to serve multiple customers efficiently, because its AQM customers are not on navigable waterways and/or do not purchase AQMs in barge-sized volumes.

(c) Dimethyl Ether and Difluoroethane

DuPont currently sells DME and DFE primarily through a network of distributors who provide the storage capacity, dedicated trailers, loading racks, mixing facilities, and personnel to service the end-users. These distributors purchase in rail cars and then resell the commodity in trucks. DuPont sells to very few end-users directly. In order to by-pass NS at the origins, DuPont would need to set up its own distribution network for both commodities. {{[redacted] }} See infra Parts II-B.2.k. and l.

(d) Glycolic Acid

In order to load glycolic acid into barges at Belle, WV, DuPont would have to construct piping from existing storage tanks to the barge docks at a cost of {{[redacted]}}. This cost cannot be justified for the sole issue movement of glycolic acid (Lane B-2), which totals just {[redacted]} rail cars {[redacted]} times per year. Moreover, the volume of each shipment would be less than the capacity of even the smallest barge. See infra Part II-B.2.a.

(e) Monomethyl Formamide

The sole issue movement of MMF (Lane B-37), which is an internal DuPont movement, does not have sufficient volume, at approximately {[redacted]} rail cars per year, to warrant the requisite infrastructure investment that DuPont would have to make at both the origin and destination to load and unload barges. At Belle, WV, DuPont would need to construct a 400,000 gallon carbon steel storage tank, a transfer system of piping and pumps capable of transferring MMF at 1000 gallons per minute through a 3- or 4-inch pipe approximately 2 miles, and a nitrogen blanket or air drying system at a cost of {{[redacted]}}. At LaPorte (Strang), the cost of constructing a 400,000 gallon storage tank, a barge unloading facility, and a transfer system of pipes and pumps would be {{[redacted]}}. See infra Part II-B.2.r.

(f) Dimethyl Formamide

Although DuPont has a barge dock at its Belle, WV, facility, it does not have the storage capacity or the transfer system needed to load DMF into barges. An {{[redacted]}} infrastructure investment is required to barge the DMF issue movements that originate at Belle. In addition, because the issue movement DMF customers are not on navigable waterways and/or do not purchase DMF in barge-sized quantities, DuPont would have to lease storage tanks at river terminals strategically located to serve multiple customers efficiently. After a lengthy search, DuPont was able to locate a terminal in Joliet, IL to serve Lanes B-9 and 29 that would be able and willing to lease a storage tank for {{[redacted]}} per year plus other terminal costs. Although Lane B-29 is the highest volume issue DMF movement, with more rail cars than the other 4 issue DMF movements combined, it has averaged just 3.5 rail cars per month in 2009 and 2010, which hardly justifies these infrastructure costs. Moreover, the Joliet terminal is not strategically positioned to also service the other 3 issue DMF movements, which means that there is no opportunity for those movements to share terminal costs with Lanes B-9 and 29. These additional infrastructure costs would quickly erase the {{[redacted]}} freight savings provided by the barge-rail alternative in these two lanes. See infra Part II-B.2.m.

(g) Sodium Caustic

The 9 caustic soda issue movements are all inbound shipments from suppliers to DuPont facilities. Of those 9 movements, 7 originate at facilities that can load barges of caustic soda. The 2 exceptions are Lanes B-112 and 114, which originate at Niagara Falls. Of those 7 movements, just 2 are delivered to facilities on navigable waterways (B-80: Orange, TX and B-107: Belle, WV).[30] Each of those facilities, however, requires significant infrastructure

[30] Although Lane A-22 (Lemoyne, AL) is on a navigable waterway, the property is subject to an archaeological easement that restricts DuPont's ability to construct barge facilities.

investments to unload caustic soda. At Orange, TX, DuPont would have to construct {{[redacted]}} of storage and piping in order to receive caustic soda by barge. At Belle, DuPont would have to construct {{[redacted]}} of new piping to enable the unloading of barges. See infra Part II-B.2.i.

(h) Chlorine, Titanium Dioxide, Titanium Tetrachloride, and Petroleum Coke

DuPont ships titanium dioxide and titanium tetrachloride from Edge Moor and receives caustic soda,[31] chlorine and petroleum coke. Although Edge Moor is located on the Delaware River, its barge dock has not been used for at least 25 years and would require substantial repairs. Moreover, when the dock was in use, its sole purpose was to load iron chloride into barges for dumping offshore, and therefore, it also would need to be upgraded to handle the issue commodities. To make the barge dock operational again in order to load and unload these issue commodities, DuPont would have to build land-based infrastructure for each commodity (*e.g.*, pipes and pumps) to transport them approximately a half mile between the waterfront and the plant, build containment structures to prevent spillage into the river, upgrade the docks, and dredge 25 years of accumulated silt and mud that currently inhibits barge access to the docks. Moreover, if DuPont were to handle all these issue commodities by barge at Edge Moor, it would need to construct new docks in addition to the current dilapidated dock. See infra Parts II-B.2.j. and w.

DuPont estimates that the barge infrastructure costs for chlorine would be {{[redacted]}} to rehabilitate the dock and {{[redacted]}} to install the piping, pumps, tanks, and other infrastructure necessary to store the chlorine and pipe it from the dock to the plant.

[31] The caustic soda movement originates at a supplier which does not have barge loading docks. Moreover, in order to reach Edge Moor by barge, caustic soda would have to be transloaded in open water from ocean vessels to river barges.

Although DuPont did not separately calculate these costs for titanium tetrachloride, DuPont has assumed similar investment requirements because it also is a TIH commodity. This exercise, however, is merely academic because both commodities would have to be transloaded in the open water between river barges and ocean vessels. Since transloading these TIH commodities is not done for safety reasons, barges could not be used for the issue movements even if the enormous infrastructure investment made economic sense. See infra Part II-B.2.j. and x.

For petroleum coke, barge deliveries to Edge Moor are only possible if the Pet Coke is first railed nearly the entire distance to a terminal on the Delaware River and transloaded into barges for a short distance movement to Edge Moor.[32] In order to estimate the barge dock rehabilitation costs, DuPont started with the chlorine barge dock rehabilitation estimate of {{[redacted]}} and stripped out the equipment specific to handling chlorine to determine that it would cost {{[redacted]}} to rehabilitate the dock for pet coke deliveries. This estimate is incomplete because it does not include the infrastructure needed to transport the pet coke from the waterfront to the plant or the storage needed to receive barge-sized volumes of pet coke as opposed to staggered rail volumes. See infra Part II-B.2.s.

Although DuPont would need to build extensive infrastructure at Edge Moor to load titanium dioxide into barges, it has not separately estimated those costs because of the multiple other hurdles to ever using barges. Those hurdles include significant questions as to whether titanium dioxide can even be barged, since no one has ever done so and there would be a problem with significant heels left in the barge; the inability to store titanium dioxide for lengthy periods at river terminals, which would be necessary because customers do not purchase in

[32] An alternate barge option for pet coke considered by DuPont for Lanes B-75 and 123 is a barge-to-truck transload at McKees Rocks, PA, which would deliver the pet coke over 300 miles to Edge Moor in trucks. This option too would require an infrastructure investment of {{[redacted]}} to reconfigure the truck unloading spot by increasing the vertical clearance within the storage shed.

barge-sized volumes; and the need to transload in the open water between river barges and ocean vessels. Nevertheless, it is a safe assumption that barge rehabilitation costs for titanium dioxide would at least equal the {{[redacted]}} estimate for pet coke. Also like pet coke, this estimate is incomplete because it does not include the infrastructure needed to transport the titanium dioxide from the plant to the dock. See infra Part II-B.2.w.

Even if it made economic sense for DuPont to construct any of the above infrastructure needed to load or unload the issue commodities at Edge Moor, it is highly unlikely that DuPont even would be permitted to restore the barge docks under the Delaware Coastal Zone Act or obtain any of the other requisite permits. See infra Part I-A.2.b.(8).

(i) Sulfuric Acid

DuPont would incur significant infrastructure costs in order to load sulfuric acid into trucks or barges at its Reybold, DE facility, which is the origin for 19 of the 26 sulfuric acid issue movements. See infra Part II-B.2.b.

In order to shift the issue movements from rail to trucks, DuPont needs an additional truck loading rack which, based upon a recent similar project at Reybold, would cost {{[redacted]}}. There also would be real estate acquisition costs from the owner of the refinery in which DuPont's plant is embedded, which assumes that the owner would be willing to sell the property.

In order to load sulfuric acid into barges at Reybold, DuPont would have to construct 2 miles of piping, and associated pumps and tanks, to convey the acid to the barge docks. This assumes, however, that the refinery owner would permit DuPont to use the docks and extend piping across the refinery property to the docks. These issues and the millions of dollars in associated infrastructure costs are moot, however, because the Delaware Coastal Zone Act would prohibit DuPont from using the Reybold docks. See infra Part I-A.2.b.(8).

(j) Lime

DuPont does not have adequate infrastructure at its Ampthill, VA facility to receive additional truck shipments of lime over Lane B-96. DuPont has storage capacity for the equivalent of {{[redacted]}}, and therefore, relies upon its rail cars for storage. Furthermore, when DuPont makes emergency truck shipments, it uses {{[redacted]}}. If DuPont switched from rail to truck shipments, it would need to lease {[redacted]} additional trailers at a total cost of {{[redacted]}} per month. {{[redacted]}}. See infra Part II-B.2.o.

(k) Sodium Methylate

DuPont cannot use trucks to transport sodium methylate from its Strang (LaPorte), TX facility to its Lemoyne (Mobile), AL facility (Lane B-86) without adding costly infrastructure at both locations. See infra Part II-B.2.u. At LaPorte, DuPont does not have a truck loading rack for sodium methylate. If and when DuPont needs to load a truck, it must use the Velpar (a herbicide product) loading rack, which is constantly in use for loading and unloading commodities associated with Velpar production. Consequently, DuPont may be able to load just 1-2 trucks per month of sodium methylate. The cost of constructing a new loading rack for sodium methylate would be {{[redacted]}}.

At Mobile, DuPont has only {{[redacted]}} tons of fixed storage, {{[redacted]}}. Therefore, in order to receive sodium methylate by truck, DuPont would have to construct a 30,000 gallon storage tank for approximately {{[redacted]}}.

Consistent with the above limitations, DuPont has no history of trucking sodium methylate over Lane B-86 at all. The relatively small number of rail shipments in this lane, for a commodity that is not produced year-round, does not justify these infrastructure investments.

(l) Sulfur Trioxide

In Lane B-122, DuPont's Burnside production facility cannot load trucks of sulfur trioxide. It would cost {{[redacted]}} to construct a truck loading rack just to be able to load trucks at this origin in order to bypass NS at the issue destination. See infra Part II-B.2.v.

(6) Product integrity concerns preclude the use of alternative modes for 8 of the issue commodities.

Product integrity concerns are highly relevant indicators of market dominance. See e.g., DuPont (Plastics), slip op. at 5 (truck competition not effective due to product contamination concerns); FMC, 4 STB at 720 (Board notes receiver's "product integrity" concern in finding that transloading is not effective competition); Market Dominance Determinations, 365 I.C.C. at 133 (effective competition may be deduced from "physical characteristics of the product in question that may preclude transportation by motor carrier"). There are 8 issue commodities where the use of non-rail transportation alternatives raises significant product integrity concerns.

Bio-propanediol, or PDO, is a liquid that is used in the production of polymers. It is especially sensitive to discoloration. In addition to contamination from traditional sources like dirt and foreign material, even water can adversely affect the polymerization process. If contaminated product enters the polymer production process, it can cause a shut-down of {{[redacted]}} at a cost of {{[redacted]}} in lost product plus restart costs. The greatest potential for contamination occurs during transloading. Because rail cars are needed for storage of PDO at the issue origin, a significant increase in the use of trucks would require transloading from rail

cars into trucks, with increased contamination risks. In addition, PDO can only be transported in stainless steel trucks, which are more difficult and costly to acquire. See infra Part II-B.2.g.

Both DFE and DME are propellants that cannot be transloaded, except at facilities with highly specialized equipment and trained personnel to ensure product integrity. During the transload process, DFE and DME pick up non-condensable gases (such as nitrogen) from air in the pipes, along with moisture and residue from previous materials. Because these commodities are used in aerosol cans, the non-condensable gases can over-pressurize the cans and moisture can throw the commodities out of spec with customer requirements. Also, transloading cannot occur directly from one transport vehicle to another; instead, the product first must be offloaded into a storage tank. Therefore, transloading occurs only at distributor facilities, which have the equipment and trained personnel. In fact, the destination for nearly all of the DFE and DME issue movements is such a distributor, which makes transloading through a different distributor location to reach the destination distributor absurd. See infra Parts II-B.2.k. and l.

Glycolic acid is produced to customer specifications. Whenever glycolic acid is transferred in transit, DuPont hires a third party surveyor to inspect the receiving vessel, monitor the product transfer, and test product samples to ensure that the acid remains within the required specifications. The single issue movement of glycolic acid is produced to European specifications and exported by ocean vessel. DuPont already must transload the product from rail cars into the ocean vessel. The addition of a truck-to-rail transload near the origin would increase the risk of contamination and require additional testing. See infra Part II-B.2.a.

Certain grades of sulfuric acid cannot be transloaded because of degradation concerns. DuPont produces sulfuric acid in concentrations of 93%, 98% and 99%. The 93% concentration, which is the most corrosive, is produced in three grades: technical, electrolytic and water white.

The latter two grades cannot be transloaded because transloading exposes the sulfuric acid to air, which creates more water, which increases corrosion. The corrosion of the tank trucks, in turn, contaminates the acid. DuPont's customers in the following case lanes purchase water white or electrolytic grades of 93% sulfuric acid that cannot be transloaded: {{[redacted]}}. See infra Part II-B.2.b.

The Lime that DuPont ships in Lane B-96 is not ordinary pebble or other common forms of lime, but a specialty lime with minimal impurities and a {{[redacted]}}. It is hygroscopic and will calcify or bridge when it absorbs water, like concrete. Therefore, lime can only be transloaded at a facility with a conditioned, heated nitrogen blanket. No such facility exists in proximity to the issue movement route. See infra Part II-B.2.o.

Polyethylene, like most polymers, is subject to degradation caused by excess handling. For example, transloading creates fines, dust, and streamers, as the polyethylene pellets abrade each other and the sides of the transfer hoses when blown or vacuumed from one container into another. While the amount of fines, dust and streamers created by a single transload is typically acceptable, multiple transloads of a single shipment are avoided as much as possible because the contamination increases with each transload. In addition, transloading increases the risk of contamination from foreign particles. The consequences of these product quality degradations are very costly to DuPont's customers if the contaminated product is unloaded into the customer's silos or production lines, resulting in loss of product and plant shutdowns. See infra Part II-B.2.t.

Finally, Sand Zircon is an ultra-pure form of sand that is clean and contains very few imperfections. Because of the extremely fine grains, additional handling during transportation

inevitably results in a partial loss of this high value product. Therefore, transloading is highly undesirable and potentially very costly due to lost product. See infra Part II-B.2.z.

(7) Reliance upon rail cars for storage precludes the extensive use of alternative modes for 11 of the issue commodities.

For 11 of the 26 issue commodities, rail cars are essential storage, as well as transport, vessels. This would make it very costly, if not impossible, for DuPont to switch from rail transportation to trucks or barges. The following issue commodities and movements require rail cars for storage:

- Aniline Oil: Both customers for all 4 issue movements rely upon rail cars for storage. Nation Ford, in Lanes B-49, 84 and 115, receives too much volume to rely solely upon fixed storage. US Amines, in Lane B-85, only purchases aniline oil for limited production campaigns, which does not warrant the construction of fixed storage. See infra Part II-B.2.f.

- AQMs: Four of the five issue destinations rely upon rail cars due to a lack of adequate storage. Lane B-13 does not have any storage tank at all. Lanes B-8, 17 and 25 have storage tanks that are smaller than a single rail car. See infra Part II-B.2.q.

- Bio-PDO: Because the production facility origin for all 3 issue movements has limited storage tank capacity, it relies upon a dedicated fleet of rail cars for storage to ensure continuous production. Without rail car storage capacity, the plant would experience frequent and costly shut-downs. See infra Part II-B.2.g.

- Glycolic Acid: Because Lane B-2 is an export shipment, DuPont depends upon the rail cars for storage at Bayport, TX, until the ocean vessel is ready for loading. See infra Part II-B.2.a.

- Lime: The destination for Lane B-96 relies upon a dedicated fleet of rail cars to store its inventory of lime due to limited permanent storage capacity. See infra Part II-B.2.o.

- MMF: In Lane B-37, DuPont stores its MMF production in rail cars because it does not have any storage at the Belle, WV origin. Also, because the LaPorte, TX destination only has storage equivalent to a single rail car, it also needs the rail cars for storage. See infra Part II-B.2.r.

- Muriatic Acid: Because muriatic acid is an unavoidable by-product of DuPont's production of Freon 22, DuPont cannot produce Freon 22 unless it has storage for muriatic acid. When DuPont's fixed storage is full, DuPont must use rail cars as supplemental storage or halt its Freon 22 production. Moreover, the more difficult it is to

dispose of muriatic acid because of freight rates, the more likely it is that DuPont will need to use rail cars for storage. See infra Part II-B.2.e.

- Polyethylene: DuPont's customers for all 4 issue movements require rail cars for storage because their fixed storage capacity is equivalent to {[redacted]}. See infra Part II-B.2.t.

- Sodium Methylate: Both the origin and destination in Lane B-86 rely upon rail cars for storage. Because the origin does not have any storage tanks, it must load all volumes directly into rail cars. Because the destination has storage that is {{[redacted]}}, it too depends upon rail cars. See infra Part II-B.2.u.

- Sulfuric Acid: The customer in Lane B-94 requires rail cars for storage because it purchases an off-spec product that cannot be mixed with the specification grade product in its storage tanks. The customers in Lanes A-23, B-126, 127, 132, 135, 139 and 140 are distributors which use the rail cars for storage until they resell the product. See infra Part II-B.2.b.

- Titanium Dioxide: At Edge Moor, DE, which is the origin for 23 of 25 issue movements, DuPont loads substantial volumes directly into rail cars due to limited fixed storage. Moreover, DuPont pre-loads rail cars one week in advance for orders that will be filled the following week. See infra Part II-B.2.w.

(8) The Delaware Coastal Zone Act precludes the use of barges for shipments to and from DuPont's Edge Moor and Reybold facilities.

Although DuPont's Edge Moor and Reybold, DE facilities are located on the Delaware River, barge transportation cannot provide effective competition to NS rail service due to restrictions imposed by the Delaware Coastal Zone Act ("CZA"). DuPont ships sulfuric acid from Reybold. At Edge Moor, DuPont ships titanium dioxide and titanium tetrachloride, and receives chlorine, caustic soda, and petroleum coke. DuPont's facilities at Edge Moor and Reybold are both captive to NS and are located in the Delaware coastal zone, the coastal area to which the CZA applies.[33] To use barge transportation at these locations, DuPont must overcome substantial regulatory hurdles, including those posed by the CZA and multiple other

[33] Del. Code tit. 7, §§ 7001, 7002(a).

environmental regulations and statutes. The CZA prohibits DuPont from using barges at all at Reybold and places nearly impossible obstacles upon the use of barges at Edge Moor.

The CZA prohibits "bulk product transfer facilities," which include any port or dock facility for the transfer of bulk quantities of any substance between a vessel and onshore facility within the coastal zone.[34] Exceptions to this prohibition exist for the continued—but not expanded—use of bulk product transfer facilities that were in operation on June 28, 1971,[35] and the construction or expansion of dock or dock facilities, but only if they serve a single industrial or manufacturing facility and a permit is obtained.[36]

The CZA bars DuPont's access to the barge facilities at Reybold. DuPont's Reybold facility is landlocked within a refinery owned by a third party that abuts the Delaware River. Although the refinery has docks that operated on June 28, 1971, the CZA exemption for the continued operation of the docks does not apply to DuPont's use of the docks to load or unload sulfur products, since that would be an expanded use.[37] Nor does DuPont have the legal right to use the refinery's dock or to construct piping across 2 miles of refinery property to connect the DuPont facility to the dock. Moreover, the expanded use of the dock would involve service to multiple facilities—DuPont's facility and the refinery—thus disqualifying such use from the exemption for expanding docks serving a single manufacturing or industrial facility. Accordingly, DuPont does not have a viable barge alternative at Reybold. Even if barging from Reybold was a viable option, existing regulations still would effectively prohibit barge transportation, as described below with respect to Edge Moor.

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[34] Del. Code tit. 7, § 7002(b), 7003.
[35] Del. Code tit. 7, § 7003.
[36] Del. Code tit. 7, § 7002(b), 7004(a); Del. Admin. Code tit.7, § 101-6.1.
[37] See Del. Admin. Code tit. 7, § 101-5.9 (stating that a bulk product facility that was in operation on June 28, 1971, can only be used to transfer the same products and materials as it transferred on June 28, 1971).

The Edge Moor docks have not been used for at least 25 years and are in a state of significant disrepair. In order to rehabilitate Edge Moor's existing barge facilities to ship the issue commodities under the CZA exemption for barge facilities serving a single industrial or manufacturing facility, DuPont would have to obtain a permit. However, obtaining a permit is a difficult, expensive, and time consuming process, and the prospects for success are slight. A permit application requires an environmental impact statement and detailed descriptions of the proposed use, the aesthetic and economic effects, and impact on neighboring land uses.[38] In addition, any application that will result in a negative environmental impact must contain an offset proposal, which must more than offset the negative environmental impacts associated with the proposed activity.[39] Approval of a permit application is in the discretion of the Secretary of the Delaware Department of Natural Resources and Environmental Control ("DNREC"),[40] who considers multiple factors, including economic effect, aesthetic effect, the supporting facilities required, effect on neighboring land uses, and local land use and conservation plans.[41] DuPont's environmental counsel anticipate that it would take 8 months for the Secretary to rule on an application to rehabilitate and use the dock facilities at Edge Moor and cost at least $50,000 to $75,000 in legal, consulting, and application fees. Despite this, there is still a strong likelihood that the Secretary will deny the permit due to the potential for damaging spills, the need for substantial dredging, the increase in barge traffic, and the proximity of the barge docks to a picnic area at Fox Point State Park.

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[38] Id. § -8.1.
[39] Id. § -9.1.1. Because the primary medium at risk is the river environment and subaqueous soil, any DuPont offset would need to target spawning fish populations, benthic invertebrates, and submerged vegetation in the Delaware River.
[40] Del. Code tit. 7, § 7005(a).
[41] Id. § 7004(b).

Even if DuPont could obtain a CZA permit, additional regulatory hurdles remain. DuPont must obtain subaqueous land leases and permits,[42] certify that refurbishment or expansion of the dock facilities is consistent with Delaware's coastal zone management program,[43] obtain water quality certification,[44] and obtain permits from the U.S. Army Corps of Engineers ("USACE").[45] USACE permits are needed for the rehabilitation and any expansion of the dock facilities as well as the discharge of dredge or fill material.[46] Because this does not fall under nationwide permits for minimal impact activities,[47] DuPont would need to obtain an individual permit. The burden of obtaining an individual permit is "not trivial[;]. . . the average applicant for an individual permit spends 788 days and $271,596 in completing the process."[48] Moreover, there is no guarantee that a permit will be issued.

In order to obtain the USACE permits, DuPont must also certify to USACE and DNREC that any proposed activity affecting water use in the coastal zone complies with Delaware's approved coastal management program and will be conducted in a manner consistent with such program.[49] The certification must include a detailed description of the project and its associated facilities, a copy of the federal permit application package, an assessment of the effects of the project on any land or water use or natural resource of the coastal zone, findings that the proposed activity and associated facilities are consistent with the Delaware Coastal Zone Management Program ("DCMP").[50] DNREC's review of the certification includes twenty-five

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[42] Del. Admin. Code tit. 7, § 7504-2.3.3, -2.4.2.
[43] 16 U.S.C. § 1456(c)(3)(A).
[44] 33 U.S.C. § 1341(a)(1).
[45] 33 C.F.R. §§ 322.3(a), 323.3(a).
[46] Id.
[47] See 33 C.F.R. Part 330.
[48] Rapanos v. United States, 547 U.S. 715, 721 (2006)
[49] 16 U.S.C. § 1456(c)(3)(A). See also DNREC, Delaware Coastal Management Program: Comprehensive Update and Routine Program Implementation § 3.2 (2011).
[50] DNREC, supra note 49, § 3.2.2.

policy areas.[51] If DNREC finds that the proposed activity is inconsistent with the DCMP, it may object to the certification, thereby precluding USACE from issuing a permit unless the Secretary of Commerce, on appeal, overrides DNREC's objection.[52]

To obtain the necessary water quality certification, which is a prerequisite to obtaining the USACE permits,[53] and subaqueous land leases and permits, DuPont must submit a combined application containing engineering drawings and a wetlands delineation to the Wetlands and Subaqueous Lands Section ("WSLS") of DNREC, which will evaluate the application using a multitude of criteria, including: environmental impact, erosion control, impact on public use, impact on ecosystems, serviceability, impact of dredge or fill activities, and impact on Delaware surface water quality.[54] Applications for subaqueous lands permits and leases are subject to a public notice requirement and, if a meritorious request for hearing is received or WSLS finds a public interest in the project, a public hearing before a hearing officer.[55] Given the scope of any dock facility rehabilitation and expansion and its implication of the CZA, a hearing is likely. If the permit application is denied, there is no right of appeal.[56]

The presence of so many regulatory obstacles, the cost of pursuing the multiple required permits, and the potential that any single permit denial can block the entire project substantially dilutes any potential constraint that the possibility of barge competition might have on rail rates. See General Electric, 1984 ICC LEXIS 206, *6 ("[W]hether such a dock and unloading facility could actually be constructed is far from certain, since the record shows that environmental requirements of several jurisdictions would have to be met, and the government agencies

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[51] Id. § 5.0.
[52] Id. § 3.2.6.
[53] 33 U.S.C. § 1341(a)(1).
[54] Del. Admin. Code tit. 7, § 7504-4.0
[55] Del. Code tit. 7, § 7207, 7208.
[56] Id. § 7210.

involved might not permit construction for the handling of such a hazardous substance."). All of this is before investing the millions of dollars required to build the infrastructure that is necessary to make barge transportation a physical possibility at Edge Moor and Reybold. See Id. (holding that the complainant was justified in regarding the need to construct barge facilities capable of receiving a hazardous commodity to be a large and expensive capital expenditure).

(9) Some customers and suppliers require DuPont to ship by rail.

Even if Dupont could reduce its transportation costs by using alternative modes, there are some issue movements where it simply cannot do so because of customers or suppliers who require rail delivery in their contracts with DuPont. A customer requirement for rail transportation demonstrates the infeasibility of alternative modes. DuPont (Plastics), slip op. at 7. See also, McCarty Farms, 3 I.C.C. 2d at 829 ("needs of the shipper or receiver" may determine feasibility of truck transportation). Moreover, a contractual requirement to deliver product to a customer by rail "makes a switch to trucks highly infeasible from an economic standpoint due to the risk of losing its customer or incurring breach-of-contract liability." E.I. du Pont de Nemours and Company v. CSX Transportation, Inc., STB Docket No. 42101, slip op. at 6 (served June 30, 2008) ("DuPont (Nitrobenzene)"). For those customers who will not accept regular truck deliveries, DuPont is unable to respond to changes in NS's prices by switching from NS to alternative modes, which means that those alternative modes do not provide effective competition. Special Procedures, 353 I.C.C. at 929. There are 7 issue commodities where DuPont's contracts with its customers require rail transportation.

Of the 19 issue movements of anhydrous methylamines, 9 customers in 12 lanes have rail delivery requirements in their contracts with DuPont.[57] The customer location in Lane {{[redacted]}}

[57] Those customers are {{[redacted]}}.

physically cannot receive trucks. Consistent with these rail delivery requirements, DuPont did not deliver a single truck shipment to 8 of these 12 destinations from 2006-10, and delivered only a very small number of trucks to the other 4 destinations on an expedited basis. Because of the properties of this commodity, customers do not want to handle it more than is absolutely necessary, which includes avoiding 4-5 times as many truck unloadings in comparison to rail. See infra Part II-B.2.p.

There are 4 issue movements of aniline oil to 2 different customers. {{[redacted].}} Both customers also rely upon rail cars for storage of the aniline oil after delivery. {{[redacted].}} See infra Part II-B.2.f.

{{[redacted].}} The customer's facility is designed for rail unloading and it must improvise for occasional expedited truck deliveries. Such improvisations would not be practical for regular truck shipments. See infra Part II-B.2.z.

{{[redacted].}} See infra Part II-B.2.d.

For 5 issue movements of titanium dioxide, the customer has required rail delivery in its contract with DuPont.[58] From 2006-10, there were no truck shipments in {{[redacted]}}. Although the other 4 lanes had many truck shipments in 2010, most of those were attributable to a production shut down at DuPont's Edge Moor, DE plant. To ensure that all of its customers remained supplied with titanium dioxide during the shutdown and subsequent ramp up of production, DuPont kept all customers supplied as leanly as possible by making expedited truck shipments only when the customer was at risk of shutting down due to low inventory. In addition, {{[redacted]}} always receive some trucks because their facilities are divided into two parts, one of which cannot receive rail shipments and the customers do not have the infrastructure to pipe titanium dioxide from one part of their plants to the other. See infra Part II-B.2.w.

The sole caustic potash movement is different from the prior commodities because DuPont is the customer rather than the seller. {{[redacted]}} The Dayton P&L Co. v. Louisville and Nashville R.R. Co., 1 I.C.C. 2d 375, 382 (1985). Because caustic potash is a highly corrosive hazardous material that all parties prefer to handle as little as possible, rail has one-quarter the number of hook-ups as trucks at both the origin and destination. Even if DuPont was willing to assume the risks, not to mention the costs associated with the extra handling required for trucks, DuPont cannot compel its suppliers to do the same. See infra Part II-B.2.h.

DuPont faces similar issues with its purchases of caustic soda, which like caustic potash also is highly corrosive. Also like caustic potash, {{[redacted]

[58] Those customers are in Lanes {{[redacted]}}.

[redacted].}}} Even if DuPont were willing to assume the risks of handling four times more caustic soda shipments, not to mention the costs associated with the extra handling, DuPont cannot compel its suppliers to do the same. See infra Part II-B.2.i.

B. SAC EVIDENCE AND ARGUMENT

1. Introduction – Governing Principles

In Coal Rate Guidelines, 5 I.C.C.2d 520 (1985), the Interstate Commerce Commission, the Board's statutory predecessor, adopted constrained market pricing ("CMP") as its methodology for determining maximum reasonable rate levels for market dominant traffic, such as DuPont's movements that are the subject of this proceeding. Under CMP, a captive shipper should not be required to pay more than is necessary for the carrier involved to earn adequate revenues. Nor should it pay more than necessary for efficient service. Finally, a captive shipper should not be required to bear the cost of any facilities or services from which it derives no benefit. id. at 523-524. These principles have been relied on by the Board and its predecessor for more than twenty-five years. See, e.g., AEPCO, slip op. at 3-4, citing Guidelines; WFA/Basin, slip op. at 7, citing Guidelines.

Under Guidelines, CMP contains three main constraints on the extent to which a railroad may charge differentially higher rates on captive traffic: the "revenue adequacy" constraint, Guidelines at 535-36; the "management efficiency" constraint, id. at 537-42; and the "stand-alone cost" ("SAC") constraint, id. at 542-46, which protects a captive shipper from bearing costs or inefficiencies or from cross-subsidizing other traffic by paying more than the revenue needed

to replicate rail service to a select subset of the carrier's traffic base.[59] AEPCO, slip op. at 4. DuPont is proceeding under the SAC prong of CMP.

Under the principles of SAC, the Board seeks to determine whether a complainant is bearing the cost of any inefficiencies or the cost of any facilities or services from which it derives no benefit, by simulating the rate that would exist in a "contestable market," that is, a market that is free from barriers to entry. Guidelines, 1 I.C.C.2d at 528; AEPCO, slip op. at 4; CP&L, 7 S.T.B. at 244 (SAC analysis seeks to determine the "lowest cost at which a hypothetical, optimally efficient carrier could provide the service. . . if the rail industry were free of barriers to entry or exit . . ."). Contestable markets have characteristics that preclude monopoly pricing. Id. Since real-life rail markets are not contestable due to high barriers to entry that permit a rail carrier to impose monopoly pricing on a captive shipper, the SAC analysis develops a hypothetical competitor – the "Stand Alone Railroad" ("SARR"). AEPCO, slip op. at 4. Under the SAC constraint, the rate at issue cannot be higher than what the SARR would need to charge to serve the complaining shipper while fully covering all of its costs, including a reasonable return on investment. The SAC analysis produces a simulated competitive rate against which to judge the challenged rate. Guidelines, 1 I.C.C.2d at 542; AEPCO, slip op. at 4; TMPA, 6 S.T.B. at 586.

To make a SAC presentation, the complaining shipper designs a SARR specifically tailored to serve an identified traffic group. Using information on the types and amounts of traffic actually moving over the defendant's rail system, the complainant selects a subset of that traffic (including the traffic that is the subject of the complaint) that the SARR would serve. AEPCO, slip op. at 4. The complainant then designs a transportation system that would serve

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[59] Guidelines also contains a fourth limitation on a rail carrier's pricing, the phasing constraint. See, Guidelines, 1 I.C.C.2d at 546. Phasing does not limit the final price selected by the carrier, but the pace at which a rate increase may be imposed.

that group of traffic efficiently and at the lowest cost, taking into account all essential facilities and operating assets. See WFA/Basin, slip op. at 8; FMC, 4 S.T.B. at 721; Guidelines, 1 I.C.C.2d at 543-44. An operating plan must be developed to serve the traffic group selected by the complainant, and the system-wide investment requirements and operating expenses must be estimated, including appropriate documentation to support the estimates. AEPCO, slip op. at 4-5. The Board's requirements assume that investments are made prior to the start of service, that the SARR would continue to operate into the indefinite future, and that recovery of the investment costs would occur over the economic life of the assets. Id. at 5. A computerized discounted cash flow ("DCF") model simulates how the SARR would likely recover its capital investments. The annual revenues required to cover the SARR's capital costs and taxes are combined with the annual operating costs to calculate the SARR's total annual revenue requirements. AEPCO, slip op. at 5.

The revenue requirements of the SARR are then compared to the revenues that the defendant railroad is expected to earn from the traffic group. If the present value of the revenues that would be generated by the traffic group exceeds the present value of the revenue requirements of the SARR, the Board must decide what relief to provide to the complainant by allocating the revenue requirements of the SARR among the traffic group over time. Id.

Thus, the five basic parts of a SAC analysis are: (1) identify the traffic group to be served by the SARR, including historical and projected revenues; (2) design the configuration of, and develop an operating plan for, the SARR to serve the selected traffic group; (3) calculate operating expenses of the SARR to serve the traffic group and implement the operating plan; (4) calculate the road property and equipment investment needed to operate the SARR; and, (5) develop the DCF analysis. The parts are not strictly sequential, since the results of a later step

may prompt a revision in an earlier step. DuPont's evidence is presented in Part III, in the order required by the Board in its decision in General Procedures, 5 S.T.B. 441 (2001).

2. DuPont Has Carefully Followed the Board's Well-Defined Set of Rules and Precedent to Guide Parties In Developing Stand-Alone Cost Evidence.

Since the ICC's 1985 decision in Guidelines, the ICC and the Board have decided several dozen SAC cases. In the years between 1985 to the early years of the twenty-first century, the agency was grappling with fundamental questions about the principles that it would use to determine an acceptable design and operation of a SARR, including such key issues as the nature of a SARR as a competitor or a replacement to the incumbent; the use of cross-over traffic; acceptable rerouting of traffic, issues of cross-subsidization; and several others.[60] Finally, in 2006, after comprehensively considering several key issues in a rulemaking proceeding, the Board issued a decision in Major Issues, which established binding rules in four key areas dealing with the development of a SARR and the application of a SARR's costs to determine the maximum reasonable rate: (a) replacing the "percent reduction approach" with the "maximum markup methodology" ("MMM") to calculate the maximum lawful rates; (b) adopting the "average total cost" ("ATC") approach to allocate revenue from cross-over traffic; (c) shortening the analysis period to 10 years; and, (d) using a hybrid approach for forecasting operating expenses to account for future productivity. See Major Issues, slip op. at 9-44, 61-64.[61] Since the Board's decision in Major Issues, the agency has applied the rules set forth in that decision to

[60] See, e.g., Nevada Power II, 10 I.C.C.2d at 265-268 and 280-81 (nature of SARR as competitor or replacement; use of cross-over traffic); Duke/NS, 7 S.T.B. at 112-117 (principles of acceptable rerouting); PPL, 6 S.T.B. at 293-300; Otter Tail, slip op. at 24-30 (cross-subsidization principles).

[61] The Board's decision in Major Issues also dealt with the issue of whether movement-specific adjustments would be used to calculate variable costs, an issue important for developing the variable cost calculations used for the Board's jurisdictional inquiry, as well the ATC and MMM calculations. Major Issues also dealt with the issue of uniform standards for reopening, vacating and filing a new case. See Major Issues, slip op. at 47-60 and 67-75.

complaints brought to the Board under the SAC constraint.[62] Thus, the Board's decision in Major Issues has substantially "narrowed the playing field" with respect to the calculation of the SAC constraint, significantly reducing the choices of the parties in developing their evidence, and the discretion of the Board in deciding cases.

Moreover, even in matters involved in calculating the SAC constraint that were not dealt with in Major Issues, since about 2003, the Board has developed an increasingly-well defined set of precedent that has established consistent principles for deciding a number of other key issues dealing with the overall design of the SARR. For example, in the Eastern Coal Cases and other recent decisions, the Board has developed a consistent set of principles by which it would adjudge the acceptability of rerouting traffic internally on, and externally to, the proposed SARR. See TMPA, 6 S.T.B at 589; Duke/NS, slip op. at 25-26; CP&L, 7 S.T.B. at 253-259; Duke/CSXT, 7 S.T.B. at 417-422; WFA/Basin II, slip op. at 11-12; AEPCO, slip op. at 10-11; Ariz. Elec. Power Coop. v. Burlington N. & Santa Fe Ry., 6 S.T.B. 322, 327 (2002). Similarly, in its decisions in PP&L and Otter Tail, the Board has set forth principles and procedures by which it would adjudge whether traffic on one part of a SARR was cross-subsidizing traffic on another part of a SARR, and if so, whether and how the Board would adjudge the rate to be unreasonable and calculate the SAC rates. See, PP&L, 6 S.T.B at 293-300; Otter Tail, slip op. at 24-30.

Finally, even beyond the rules developed in Major Issues and general principles dealing with the overall design of the SARR set forth in a number of cases, the Board has also established substantial precedent involving more detailed aspects of the cost of constructing and

[62] See AEPCO, slip op. at 34, 35; WFA/Basin II, slip op. at 4-7, 12; AEP Texas, slip op. at 15, 23. The Board also has followed those principles in cases in which the parties have agreed that the SAC level would be below the jurisdictional threshold, and therefore the maximum reasonable rate would be set at the 180 percent of the applicable variable costs. See OG&E, slip op. at 4; KCPL, slip op. at 7-8.

operating a SARR. For example, where contracts have expired and the parties disagree whether internal forecasts produced in discovery are accurate, the agency has consistently expressed a preference for using government forecasts of revenue and traffic because they are unbiased, independent and updated regularly. See, e.g., AEPCO, slip op. at 21-23; PSCo/Xcel, 7 S.T.B at 639 and PSCo/Xcel II, slip op. at 14, aff'd on this point, 453 F.3d at 486; WFA/Basin, slip op. at 27. The Board has expressed a strong preference for an operating plan based upon the Rail Traffic Controller ("RTC") Model. See AEPCO, slip op. at 28; WFA/Basin II, slip op. at 15-16; WFA/Basin, slip op. at 15; AEP Texas, slip op. at 17; PSCo/Xcel, 7 S.T.B. at 613-14; Otter Tail, slip op. at 19. The Board has consistently accepted a 10 percent contingency factor[63] as well as a 10 percent engineering factor[64] for the road property investment cost of a SARR, both of which are now clearly settled law. The Board has consistently used the cost of capital determined annually for the railroad industry in determining the cost of capital for the SARR.[65]

Even when the Board has not settled on one figure for certain SARR elements, as it clearly has done in the case of the contingency and engineering factors, in recent cases the Board has often narrowed the range of acceptable costs. For example, in several recent decisions, the Board has accepted a very narrow range for the cost of insurance for the SARR.[66] Similarly, the Board has approved a relatively narrow range of costs for mobilization factors in cases where the matter has been litigated.[67]

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[63] See AEPCO, slip op. at 133; WFA/Basin II, slip op. at 55; WFA/Basin, slip op. at 132-133; AEP Texas, slip op. at 104 (citing the complainant's reliance on "past Board decisions"); Duke/NS, 7 S.T.B. at 203-204.

[64] See AEPCO, slip op. at 132; WFA/Basin II, slip op. at 55; WFA/Basin, slip op. at 132; AEP Texas, slip op. at 104; Duke/NS, 7 S.T.B. at 201-203.

[65] See AEPCO, slip op. at 137; WFA/Basin II, slip op. at 19-26; WFA/Basin, slip op. at 135; AEP Texas, slip op. at 107-108.

[66] See AEPCO, slip op. at 78 (3.66% of operating expenses accepted); WFA/Basin II, slip op. at 44 (3.2% of operating expenses accepted); WFA/Basin I, slip op. at 76 (3.2% of operating expenses accepted). .

[67] See AEPCO, slip op. at 132 (2.4% mobilization factor); Duke/CSXT, 7 S.T.B at 338 (2.6% mobilization factor); CP&L, 7 S.T.B at 338 (2.5% mobilization factor); TMPA, 6 S.T.B. at 744-45 (2.0% mobilization factor); Wisconsin P&L, 5 S.T.B. at 1036-1037 (2.4% mobilization factor).

In other cases where it would not be possible to settle on a specific figure or even range of figures given the specific design of a SARR in an individual case, the Board has clearly expressed a preference for a particular configuration or methodology for determining the costs of a SARR. For example, the Board has clearly made known that it does not believe that the outsourcing of ordinary maintenance is feasible. See Duke/NS, 7 S.T.B. at 163-164 (rejecting the use of outside contractors for spot maintenance); AEP Texas, slip op. at 67-68 (rejecting the use of outside contractors for spot maintenance); WFA/Basin, slip op. at 57 (noting with approval that the complainant had used a realistic in-house maintenance staff); PSCo/Xcel, 7 S.T.B at 661-62 (rejecting extensive use of outside contractors); Otter Tail, slip op. at C-18 to C-21 (rejecting use of small MOW staff). Similarly, the agency has noted with approval throughout its decisions a particular methodology to estimate the "peaking factor" that it uses to insure that the SARR has sufficient equipment to handle the peak week traffic demands. See AEPCO, slip op. at 32, citing WFA/Basin and PSCo/Xcel II.

DuPont's experts have carefully considered the Board's precedent in these and other matters, and have followed the Board's guidance. The Board will determine from the evidence presented in Part III that DuPont's SAC analysis is well within the bounds of the parameters that the Board has accepted in past cases, and therefore the Board can and should rely on DuPont's evidence in deciding this case. As the Board recently noted, [w]here . . . a complainant has followed established agency precedent, defendant[] carr[ies] the burden to justify a departure from that methodology." AEPCO, slip op. at 11, 33.

In this case, DuPont's evidence shows that the challenged NS rates are extraordinarily high, by any measure. As noted in Part II-A-1, revenue to variable cost ("R/VC") ratios for DuPont's traffic are as high as 1,044%, significantly higher than the Board has encountered in

past cases. On a mills per ton mile basis, these rates are also higher than the Board has encountered in past cases. Therefore, on the basis of the SAC evidence submitted by DuPont, which is consistent with the rules, principles and precedent that the Board has enunciated in past SAC cases, the Board should determine that DuPont's rates clearly exceed a reasonable maximum, and should prescribe maximum reasonable rates as requested by DuPont.

3. The DuPont Railroad

As the Board has already recognized in this case, DuPont's SARR – the "DuPont Railroad" or "DRR" – is one "of unusual scope and complexity." See STB Docket No. 42125, decision served January 13, 2012, slip op. at 2. The DRR is made up of nearly 7,300 route miles, and in addition will operate over about 820 miles of trackage rights or joint facility agreements (as NS does today), for a system approximately 8,000 miles in length. See infra pp. III-A-3, -B-1 to -2. The DRR system will hypothetically operate in twenty (20) states. See infra p. III-A-3. It will carry general freight, coal and intermodal traffic and is designed to transport a broad range of commodities over its system. Id. Yet, this complex system is not made up out of whole cloth – the DRR system replicates the routes and traffic of the NS itself, and its operations are similar to what NS does over many of the same lines today. See infra p. III-A-4. But, consistent with Guidelines and with Board precedent, the DRR takes advantage of efficiencies of scope and scale and modern railroad practices, to develop an optimally efficient SARR.

The traffic of the DRR largely moves over the same routes utilized by NS: there is only limited re-routing; all reroutes are entirely internal to the DRR; and any trains that carry cross-over traffic are still interchanged with NS at a point along the "real world" route of movement. See infra pp. III-A-5 to 7. As discussed further below, rerouted traffic is handled consistent with

Board precedent, and the reroutes do not adversely impact the quality of service that the customers in question receive from NS today.[68]

4. The Stand-Alone Traffic Group

Under Board precedent, the complainant must create a traffic group by using information on the types and amounts of traffic moving over the defendant's rail system, and by selecting a subset of that traffic (including its own traffic to which the challenged rate applies) that the SARR would serve. See AEPCO, slip op. at 16. The selected traffic group must be representative of that which would move on the SARR in the future, and the composition of the traffic group must be realistic, that is, consistent with the principles of real-world railroading. Id.

DuPont has followed these principles. As noted in Part III-A of its evidence, the DRR transports a broad range of commodities over its system, similar to what the NS does over many of the very same lines today. The DRR traffic group was developed using NS car and container waybill data for the June 1, 2009 through December 31, 2010 time period, which were produced by NS in response to DuPont discovery requests. See infra p. III-A-3. Like traffic carried by the NS itself, the DRR traffic group includes chemical, intermodal, agricultural, coal, automotive, metals, paper, and construction materials shipments. See infra p. III-A-3 to -4.

As noted above, the routing of certain trains moving on the DRR differs in part from the routing followed by these trains on NS lines. However, these re-routes are entirely internal to the DRR, affecting only the manner in which the trains move on the DRR, and are still interchanged with NS at a point along the actual route of movement. See infra pp. III-A-5 to -7, III-C-19 to 21. As the Board has very recently noted, "[t]remendous flexibility is permitted in the design of

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[68] In the Duke/NS, Duke/CSXT and CP&L cases, which dealt with movements in the eastern United States, the complainant in those cases utilized extensive rerouting of traffic, where the rerouting of traffic would change the routing on the residual incumbent carrier, i.e., so-called "external" reroutes. See Duke/NS, 7 S.T.B. at 112-115; CP&L, 7 S.T.B. at 253-254. In contrast, as discussed herein, DuPont's DRR system uses limited rerouting completely internal to the SARR.

the SARR," so long as the hypothetical operations are "feasible and supported and that they provide shippers included in the analysis the same or superior service as provided by the actual operations of the defendant railroads." AEPCO, slip op. at 10. It is now well-settled that rerouting of traffic to take advantage of economies of density is permissible. See AEPCO, slip op. at 14-15. Under well-settled precedent, as long as the reroute is "internal" to the SARR, i.e., the "routing differences would be confined to within the SARR's own system," the re-routing is permitted "so long as the routing is reasonable and would meet the shippers' needs." AEP Texas, slip op. at 9-11; TMPA, 6 S.T.B. at 594-95. See also, AEPCO, slip op. at 15 ("as long as the SARR would provide equivalent or superior service to those shippers, the non-issue traffic included in the SAC analysis is permitted to share the expense of those rail facilities."); PSCo/Xcel, 7 S.T.B. at 609 (internal rerouting accepted where complainant offered "comparable or superior" service). Unlike the situation in Duke/NS, for example, the DRR's routing would not have ramifications extending beyond the SAC analysis to the incumbent railroad. Compare, Duke/NS, 7 S.T.B. at 112-113.[69]

The DRR fully meets these standards. Indeed, the DRR's internal re-routings are even more conservative than the Board has permitted in past cases. The DRR contains four (4) segments over which trains will be rerouted. See infra pp. III-A-5 to 7, III-C-18 to 21. In each of these four cases, the route of movement used by the SARR is one of two alternate routes actually used by the NS; in other words, NS actually uses the route chosen by the DRR for some of the traffic actually transported on its system, a supporting fact not present in a number of prior cases in which the agency approved the use of a shipper's internal re-routes. See, e.g., AEP Texas, slip op. at 10. The fact that NS actually uses these "alternate" routes confirms the fact

[69] In fact, in Duke/NS, the NS did not object to the rerouting of traffic that would be local to the SARR or that would be interchanged with the residual NS along its usual route. See, Duke/NS, 7 S.T.B. at 113, n. 39.

that they are reasonable and meet the shippers' needs. Moreover, in two of these four cases, the rerouting is shorter than the route actually used. See infra p. III-A-5 to 6. In such cases, the Board presumes that the rerouting is acceptable. Duke/NS, 7 S.T.B at 112. In the other two cases, the rerouting involves only small increases in the length of haul,[70] significantly shorter than the added length of haul of reroutes that have been approved by the Board in past cases.[71] See infra pp. III-A-5 to 6, III-C-19 to 20. And, consistent with past cases in which the Board has approved such internal reroutes, DuPont's analysis shows that the DRR is "reasonable" and provides comparable or superior service. As with the situation in AEP Texas, the RTC model shows that the SARR's average transit time for the rerouted traffic is equal to or faster than those recorded by the incumbent. See infra pp. III-A-5 to 7, Part III-C-21; AEP Texas, slip op. at 10 (RTC Model simulation showed that the transit times for the reroutes traffic would be "comparable to or shorter than" the incumbent's transit times). See also, PSCo/Xcel, 7 S.T.B. at 607-608 (internal rerouting approved where mileage was slightly (6.1 miles) longer but the cycle time for the rerouted movement was shorter than the average cycle time for the usual route of movement).

The DRR has been constructed to begin operating on June 1, 2009. The DRR traffic group uses actual NS traffic moving from that date through the 2010 base year. See infra p. III-A-7; AEPCO, slip op. at 20 (STB accepted base year volumes using actual traffic information). The DRR also includes forecasted traffic volumes for the period from January 1, 2011 through May 31, 2019. See infra p. III-A-7. Traffic volume forecasts through 2015 were developed using NS internal forecasts, developed by NS in December 2010. Id. For the 2016 through

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[70] In two of the four cases, the rerouting only adds 8.3 miles and 38.1 miles of distance to the route, that is, the reroutes are 4% and 13% longer than the actual route.

[71] In AEP Texas, for example, the complainant's rerouting would have added between 10% and 25% extra distance. See, AEP Texas, slip op. at 10, n. 12.

2Q2019 time period, volumes were developed by adjusting the prior year volume by a commodity-specific compound annual growth rates developed using two (2) years of actual NS data and five (5) years of NS internal forecast data. See infra pp. III-A-8 to 12. The methodology used by DuPont is consistent with the methodology used by the Board in the CP&L decision, where the Board recognized that coal business in the east in constantly shifting, and therefore to project volumes on an O-D pair-specific basis would be "unduly restrictive" and would not "fairly reflect the traffic that would be available" to the SARR in any one year. CP&L, 7 S.T.B. at 249-250. Thus, the Board approved the use of projections on a regional, commodity group basis. Id. There is no difference between coal and other commodities in this regard, and DuPont has used the same logic to cover all carload movements on the DARR. Electric utility coal volume growth was capped at an 85 percent capacity level consistent with STB decisions in prior SAC cases involving the movement of coal to electric utilities. See infra pp. III-A-11 to 12; AEPCO, slip op. at 21; AEP Texas, slip op. at 31. Peak year traffic was projected to occur in the final year of the ten-year model evaluation. See infra p. III-A-13. Revenue projections were based on NS 2010 traffic and revenue data; NS pricing authorities; NS internal revenue forecasts; and publicly available forecasts of key economic indices. See infra pp. III-A-15 to 17. Indices used by DuPont are consistent with STB precedent. See, WFA/Basin, slip op. at 30; PSCo/Xcel, 7 S.T.B. at 638; AEPCO, slip op at 24-26.

Although the DRR will handle single line and interline traffic (which revenue will accrue to the DRR in the same manner as that revenue currently accrues to NS), the largest grouping of traffic to be handled by the DRR is cross-over traffic, that is, traffic that currently moves over a larger portion of the NS system than is replicated by the DRR. See infra pp. III-A-18 to 22. Cross-over movements are assumed to be interlined with the residual NS. See infra p. III-A-20.

The revenue split between the DRR and the residual NS has been calculated using the methodology set forth in Major Issues, slip op. at 24-39, as modified by the Board in WFA/Basin II, slip op. at 12-13 and AEP Texas, slip op. at 15-16 (application of ATC procedures to total revenue contribution rather than total revenue).

Finally, DuPont's treatment of the revenue accruing as a result of NS fuel surcharges is consistent with the methodology recently approved by the Board in AEPCO, slip op. at 26-28, in which the Board approved of the use of EIA forecasts of oil prices included in the agency's short term and long term projections. See infra p. III-A-17.

5. The DRR System and Operating Plan

The DRR has an extensive system that essentially includes twenty-three main-line segments as well as 36 branch lines, which serve DuPont issue locations as well as a large selection of power plants, industrial facilities, rail/water transfer terminals, and interchanges. See infra pp. III-B-1 to 2. The DRR will interchange with six (6) Class I railroads and numerous regional and short-line carriers that NS interchanges with today. See infra pp. III-B-4, III-C-3. The DRR system includes main- and branch-line tracks, sidings, interchange tracks, and pocket and set-out tracks, as well as six (6) major yards, thirty-five (35) mid-sized yards, and seventy-eight (78) small yards. See infra p. III-B-7. The DRR uses new 136-pound continuous welded rail on all constructed main line and passing sidings in line segments carrying 20 million tons or more gross tons per year and premium rail on curves of 3 degrees or more, with new 115-pound rail used on lighter-density tracks. See infra p. III-B-5. This is consistent with Board precedent. See, AEPCO, slip op. at 104; Duke/NS, 7 S.T.B. at 184-85. As noted further below, other components used in the construction of the DRR system are consistent with the Board's past decisions. As described at page III-B-7, the yards on the DRR are used for train staging, inspections, crew changes, fueling, and other operations. The DRR system is constructed in

conformity with the latest requirements. Specifically, although current federal law mandates the use of Positive Train Control ("PTC") only by December 31, 2015, the DRR is constructed at the outset with the PTC system, both for safety reasons and for reasons of cost and efficiency, since it is more cost-efficient to construct a PTC train control and communications system from the outset, rather than constructing a Centralized Traffic Control ("CTC") system and then converting partway through the analysis period. See infra pp. III-B-8, III-C-21 to 23, III-F-38 to 39.

The DRR's operating plan, described in detail in Part III-C, is designed to enable the DRR to transport its peak seven-day traffic volume and train frequencies during the 10-year DCF period, in a manner that meets the transportation needs of the traffic group in compliance with all NS transportation and service commitments. See infra p.III-C-1. The operating plan was developed using the Board-approved RTC Model, and takes into account the DRR's total traffic volume and traffic flows, as well as the DRR's interchange relationships with other carriers. See infra pp. III-C-2 to 5. All trains are interchanged with other railroads as run-through trains. See infra p. III-C-5. The DRR's train sizes are the same as those for comparable NS trains operated in the base year, and non-coal trains that are interchanged with NS have the same mix of traffic as the comparable NS trains that moved between the same points in the base period. See infra pp. III-C-8 to 9.

The DRR operating plan provides for efficient modern railroad practices, such as calling train crews in advance of the train's arrival at a designated interchange point; maximization of crew assignments within the confines of current law; maximum train speeds consistent with modern practices; and appropriate operational staffing. See infra p. III-C-6.

The number of locomotives on the DRR is sufficient to handle the peak-period traffic volume. Locomotives used on the DRR are consistent with locomotives used in actual service on the NS, and are used in modern distributed power (DP) configurations used by rail carriers across the country, including NS. See infra pp. III-C-10 to 11. The count of road locomotives includes a spare margin of {[redacted]} percent for road and helper service locomotives and {[redacted]} percent for local and work train locomotives, based on information provided by NS in discovery. See infra p. III-C-11. DuPont's experts examined actual NS bad order time, transit time and total equivalent units in service by locomotive type for 2008, 2009, and 2010. From that information, they developed the actual three-year weighted average locomotive spare margin for both types of locomotives. Id. Though these spare margin figures are somewhat lower than the Board has found in some (but not all) past cases,[72] the figure is well-supported and is based on actual NS experience, and should be adopted by the Board. DuPont experts have also calculated a peaking factor of 5.4%, using the same process as that approved by the Board in recent cases. See infra pp. III-C-11 to 12; WFA/Basin, slip op. at 33-34; PSCo/Xcel II, slip op. at 13; AEPCO, slip op. at 32 (peaking factor of 5.9%).

Railcar requirements for the DRR traffic group were determined from data produced by NS in discovery. See infra pp. III-C-13; III-D-6. The DRR car requirements were increased by a {[redacted]} percent spare margin that is based on the range of spare margins contained in NS' coal transportation contracts and which is consistent with the range of spare margins for cars utilized by the parties or decided by the Board in a number of recent cases.[73] The car requirements were

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[72] See, WFA/Basin, slip op. at 33-34 (8.6% spare margin for road locomotives and 0% for helper, switching and work locomotives); AEP Texas, slip op. at 43-44 (7.9% spare margin); Otter Tail, slip op. at C-2 (7.94% spare margin for road locomotives). But see, TMPA, 6 S.T.B. at 661 (5% spare margin requirement for helper service); Duke/CSX, 7 S.T.B. at 453-454 (5% spare margin used for road and helper locomotives); CP&L, 7 S.T.B. at 289 (5% spare margin accepted); Duke/NS, 7 S.T.B. at 151 (5% spare margin accepted).

[73] See infra p. Part III-C-15, n. 6, describing both parties use of a 5.0 percent spare margin in the AEPCO case, based on the use of transportation contracts. See also WFA/Basin, slip op. 39 (5% railcar spare margin used,

also increased by the peaking factor used for locomotives described previously. See infra p. III-C-14.

The DRR's operating plan is consistent with the Board's fundamental requirement that the operating plan must "meet the transportation needs of the traffic the SARR proposes to serve," and must be "realistic, i.e., consistent with the underlying realities of real-world railroading." WFA/Basin, slip op. at 15. In making that determination, the Board looks to the adequacy of the configuration, to insure that the SARR will have sufficient capacity to handle the peak forecast, and the cycle times, to determine whether the service will be adequate. The DRR meets these tests. The RTC Model confirms that the train cycle times during the peak period in the peak year are similar to or lower than the NS' actual cycle and transit times during the comparable period of the most recent year for which data is available. Indeed, as discussed at pages III-C-16 to 18, the DRR's trains operate in a manner that produces faster train speeds and transit times on average than NS demonstrated in the 2010 base year.

6. Operating Expenses

The DRR's operating expenses are described in Part III-D of DuPont's evidence, which sets forth the costs of equipment, personnel, general and administrative, information technology and maintenance of way requirements, and the development of related service units and costs. The DRR's operating expenses reflect the results of the RTC Model simulation, which was used to calculate the DRR's locomotive hours and car hours for the peak week of the peak year, which was then used to calculate locomotive hours, car hours, locomotive unit miles and car miles for the 2010 Base Year. The resulting statistics were then utilized to determine overall locomotive and car ownership requirements as well as personnel requirements. See infra p. III-D-1. The

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based on transportation contracts); Otter Tail, slip op. at C-5 (5.0% spare margin for cars, based on transportation contracts).

procedures used to develop the DRR's operating expense for the 2010 Base Year were those approved by the Board in WFA/Basin, that is, by applying transit times calculated for the peak period of the peak year to a full year of train data in order to calculate operating statistics. See infra p. III-D-26.

As noted in DuPont's evidence, NS did not provide any current locomotive capital leases in response to DuPont's discovery requests. See infra p. III-D-3. Therefore, DuPont developed locomotive lease costs from various public sources (depending on the type of locomotive acquired), including prior Board decisions, the public record of prior cases, and industry publications. See infra pp. III-D-3 to 4. The cost of locomotive maintenance and servicing was based on actual NS costs derived from its Annual Report to the STB. See infra pp. III-D-3 to 5. Fuel costs for locomotives are based on the prices that NS actually paid for fuel, and fuel consumption was based on NS' own experience, from information developed from NS' Annual Report to the STB. See infra p. III-D-6. All of these sources provide strong support for the DRR's cost of operations.

The DRR was conceived as a railroad that would primarily handle trainload quantities of goods using non-union personnel, as permitted by Board precedent. See infra p. III-D-9; Exhibit III-D-1 at 1; PSCo/Xcel, 7 S.T.B. at 651 (non-unionized workforce); TMPA, 6 S.T.B. at 687. The DRR's staffing plan permits the SARR to handle peak traffic volume safely and efficiently, taking into account the DRR's traffic volume. Train and engine ("T&E") crew counts were developed using the train counts over an annual period, as the Board has authorized in past cases. See infra p. III-D-10; Exhibit III-D-1 at 2; PSCo/Xcel, 7 S.T.B. at 645 (citing Duke/CSXT, CP&L, Duke/NS, and TMPA). Consistent with Board precedent, DuPont's SARR recognizes that train crews could work 270 shifts per year. See infra p. III-D-10; Exhibit III-D-1 at 2;

TMPA, 6 S.T.B. at 644 (270 crew shifts per year); WFA/Basin II, slip op. at 47 (270 crew shifts per year). T&E crew compensation for the DRR was derived from NS's own Wage Forms and is established at the same level as those paid by NS for comparable positions. See infra p. III-D-11; Exhibit III-D-1, p. 12. Other aspects of T&E personnel costs, such as the fringe benefit ratio and the cost of taxi trips and overnight stays, were also calculated as approved in prior cases. See infra p. III-D-11 to 12; Exhibit III-D-1, pp. 13-14; WFA/Basin, slip op. at 48 (taxi and overnight expenses) and 66 (fringe benefit ratio calculation); PSCo/Xcel, 7 S.T.B. at 651-52 (annual calculation of taxi expenses).

As noted above, the DRR has approximately 7,300 route miles, which is nearly the same as the route miles of the major lines comprising the Kansas City Southern Lines ("KCS"), the holding company which owns and operates the Kansas City Southern Railway, the Kansas City Southern de Mexico, and the Texas Mexican Railway Company, whose route miles total 7.075. See infra pp. III-D-16; Exhibit III-D-2, p. 18. Yet, this is far smaller than the NS or the other Class I railroads. In its evidence, DuPont has taken into account the fact that the DRR is larger than past SARR's, but without replicating the overhead of a rail carrier the size of the NS.

DRR's General and Administrative ("G&A") staff, composed of 213 personnel, is larger than the G&A staffing for the SARRs approved by the Board in many recent cases, taking into account the DRR's geographic scope, traffic flows, and commodities handled. See infra pp. III-D-12 to 16; Exhibit III-D-2; PSCo/Xcel, 7 S.T.B at 648 (51 G&A staff approved); WFA/Basin, slip op. at 39 (39 G&A staff approved); AEP Texas, slip op. at 52-53 (66 G&A staff approved). The DRR uses a 10-member Board of Directors, larger than the number that has been approved by the Board in past cases, to account for the relatively larger size and scope of the DRR

compared to past cases. See infra p. III-D-14; Exhibit III-D-2, p. 4-5; AEP Texas, slip op. at 53-54, citing PSCo/Xcel, Duke/CSXT, and TMPA.

In AEPCO, the Board rejected the complainant's proposal to outsource a large part of the marketing function and instead adopted the much larger in-house marketing staff proposed by the defendant railroad. See AEPCO, slip op. at 55-57. However, in previous cases, the Board has accepted a smaller marketing department, noting that, though the Board has "rejected as infeasible attempts to outsource entire marketing departments at nominal cost," it has also "accepted the premise that a SARR serving only a subset of the incumbent railroad's customer base would not need a marketing department as large as that of the incumbent carrier." WFA/Basin, slip op. at 46; see also, AEP Texas, slip op. at 54. DuPont's evidence shows that it would be entirely feasible for a rail carrier the size of the DRR to outsource some, but not all, of its marketing function. The DRR would internally incorporate mid- to high-level marketing personnel, including a Director of Marketing and Sales and 18 Marketing Managers in order to provide high-level in-house representation to serve the traffic base. See Exhibit III-D-2, pp. 6 to 7. DuPont's evidence shows that three (3) Marketing Managers would be sufficient for the DRR's small number of coal movements. See Exhibit III-D-2, p. 7. The DRR's Marketing Department would also include three (3) Marketing Managers for intermodal traffic, which moves in a few discrete flows and which in large part is interlined with the residual NS; and three (3) Marketing Managers for general freight business. See Exhibit III-D-2, pp. 6-7. In addition to the Marketing Managers, the DRR will also employ a cadre of Customer Service Managers on a 24/7 basis, in order to handle contacts with origin and destination facilities and customer inquiries. See Exhibit III-D-2, p. 8.

The DRR's Finance and Accounting Department consists of 66 people to handle the DRR's financial and accounting functions. See infra p. III-D-15; Exhibit III-D-2, pp. 8-12. This is consistent with the finance and accounting functions that the Board has approved in recent cases, with additions to account for the DRR's larger and more varied traffic base. See infra p. III-D-15; e.g., AEPCO, slip op. at 55 (32-person Finance and Accounting Department approved); AEP Texas, slip op. at 52 (32-person Finance and Accounting Department approved); WFA/Basin, slip op. at 43 (15-person Finance and Accounting Department approved); PSCo/Xcel, 7 S.T.B. at 648 (16-person Finance and Accounting Department approved). This department includes a Director of Internal Auditing, as approved by the Board in AEP Texas, slip op. at 56-57.

Similarly, the DRR's Legal and Administrative function, composed of 42 people, is larger than the same function that has been approved by the Board in past cases, again to reflect the requirements of the DRR's larger traffic base. See infra p. III-D-15; Exhibit III-D-2, pp. 12-14. Compare AEPCO, slip op. at 55 (29 Legal and Administrative personnel approved); WFA/Basin, slip op. at 43 (9 Legal and Administrative personnel approved); Otter Tail, slip op. at C-8 (9 Legal and Administrative personnel approved); PSCo/Xcel, 7 S.T.B. at 648 (14 Legal and Administrative personnel approved, plus IT function); AEP Texas, slip op. at 53 (9 Legal and Administrative personnel approved). In the same way, the DRR's IT function, consisting of 46 people, is larger than the IT function approved in recent cases, reflecting the DRR's larger and more varied traffic base. See infra p. III-D-16; Exhibit III-D-2, pp. 14-16; AEPCO, slip op. at 55 (41 IT personnel); WFA/Basin, slip op at 43 (8 IT personnel); AEP Texas, slip op at 52 (12 IT personnel); Otter Tail, slip op. at C-8 (9 IT personnel).

The DRR's start-up and training costs have been approved as set forth in the Board's decision in WFA/Basin, slip op. at 51-54. Training costs for engineers and conductors are based information provided by NS in discovery. See infra pp. III-D-20 to 21; III-D-2, pp. 31-32. Recruiting costs for the DRR are based on amounts provided by NS in discovery. See Exhibit III-D-2, p. 32. Consistent with WFA/Basin, slip op. at 53, and other Board precedent, the costs of training and recruiting employees is treated as an operating expense in the DRR's first year of operation. See infra p. III-D-20; Exhibit III-D-2, p. 33.

Unlike the complainant in some past cases, DuPont's experts have included a substantial field staff to perform day-to-day inspection and maintenance activities. See infra p. III-D-22; Exhibit III-D-3; WFA/Basin, slip op. at 57. This is consistent with the approach taken by complainants in recent cases, much of which the Board has accepted. See AEPCO, slip op. at 65, 72, 74 (Board approves MOW staffing for various categories); WFA/Basin, slip op. at 57 (same). However, the Board has recognized in WFA/Basin and in AEPCO that some maintenance can be contracted out, and DuPont's experts have followed that precedent here. See infra p. III-D-22 and WFA/Basin, slip op. at 69-73, and AEPCO, slip op. at 77. This contracted work includes scheduled planned maintenance, such as track geometry testing, rail grinding and vegetation control; certain unplanned maintenance such as snow removal; and some other large unplanned maintenance, such as derailments, washouts or environmental cleanups. See infra pp. III-D-22 to 23; Exhibit III-D-3, pp. 18 to 30; WFA/Basin, slip op. at 70 (track geometry testing, etc.) and 73 (snow removal, environmental cleanup and derailments); AEPCO, slip op. at 75-77. As DuPont's evidence notes, rail carriers actually utilize contract personnel for program maintenance. See infra p. III-D-22, n. 47.

Other miscellaneous operating costs, such as ad valorem taxes, loss and damage, and insurance, are also calculated for the DRR consistent with Board precedent. See infra pp. III-D-24 to 25; AEPCO, slip op. at 79 (ad valorem taxes calculated by the amount that the incumbent paid per route mile in the various states); WFA/Basin, slip op. at 55 (loss and damage based on the incumbent's experience); AEPCO, slip op. at 79 (insurance expense calculated by reference to Class I railroads).

7. Road Property Investment Cost

Part III-F describes the acquisition of land and the construction of roadbed, track tunnels, bridges, signals, etc. on the nearly 7,300 miles of the DRR's system through twenty (20) states. This evidence is in accordance with current engineering standards and governing Board precedent. Construction costs for the DRR total nearly $24 billion, or about $3.3 million per route mile. See infra p. III-F-1. Compare, AEPCO, slip op. at 31, 81 (SARR approved by Board at approximately $3.2 million per route mile); PSCo/Xcel, 7 S.T.B. at 632 and 666 (SARR approved by Board at approximately $3.2 million per route mile); AEP Texas, slip op. at 2, 75 (SARR approved by Board at approximately $2.4 million per route mile).

Land acquisition amounts and costs are consistent with the methodologies employed by the Board in past cases. The standard "Across the Fence" ("ATF") methodology was used to estimate the value of the right of way ("ROW"), by establishing the value of adjacent land in proximity to the SARR's ROW with the same zoning. See infra p. III-F-4; e.g., Duke/CSXT, 7 S.T.B at 168-169. The majority of the DRR's ROW is an average width of 100 feet, with 75 feet used in urban locations. See infra pp. III-F-3. This is consistent with the amounts of land utilized in past cases. See, AEP Texas, slip op. at 75 (100 foot/75 foot widths used); WFA/Basin, slip op. at 78 (100 foot widths generally used); PSCo/Xcel, 7 S.T.B at 667 (100 foot/75 foot widths used); Duke/NS, 7 S.T.B. at 168 (parties agreed on 100 foot widths in most

locations, but 75 foot widths in industrial, commercial and urban areas); Wisconsin P&L, 5 S.T.B. at 1018 (100 foot width is "standard," except 75-foot in urban locations); West Texas, 1 S.T.B. at 702. The DRR purchased the same interest held by the NS in the land utilized. See infra p. III-F-5; CP&L, 7 S.T.B. at 308; Duke/CSXT, 7 S.T.B. at 474.

Other design parameters such as the DRR's 24-foot single-track roadbed width, the 1.5:1 side-slope measurements and other features of the roadway investment are based on Board-approved parameters from prior cases. See infra p. III-F-11; e.g., AEPCO, slip op. at 90 (15-foot track centers); WFA/Basin, slip op. at 82 and 83 (24-foot roadbed width and 1.5:1 side slopes); Otter Tail, slip op. at D-7-8 (24-foot roadbed widths used and 1.5:1 side slopes); PSCo/Xcel, 7 S.T.B at 671-672; WFA/Basin, slip op. at 83 (1.5:1 side slope); AEP Texas, slip op. at 79-80 (24-foot roadbed width and 1.5:1 side slope); Duke/NS, 7 S.T.B. at 171. Similarly, DuPont has adopted a variety of construction elements for the DRR consistent with the agency's practice in past cases, including the one foot of fill height for yard earthwork,[74] grading,[75] ditches,[76] and the costs and amounts of solid rock excavation.[77] See infra pp. III-F-8 to 17.

DuPont has developed costs for several aspects of rail construction for the DRR, including clearing and grubbing costs, earthwork costs, common excavation, and the need for construction site access, based on actual costs that NS incurred on a realignment project in Tennessee, the Trestle Hollow Project, which involved the rerouting and building of a rail line in Centerville, TN, indexed to the start date for the DRR construction. See infra pp. III-F-8 to 15, 22-23, 27. This is consistent with past cases, in which the parties utilized costs based on actual

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[74] See, AEPCO, slip op. at 90; Wisconsin P&L, 5 S.T.B. at 1022; PSCo/Xcel at 675; Duke/CSXT, 7 S.T.B. at 477; CP&L, 7 S.T.B. at 310-311; Duke/NS, 7 S.T.B. at 172; Otter Tail, slip op. at D-10.

[75] See, FMC, 4 S.T.B. at 800; Duke/CSXT, 7 S.T.B. at478-479.

[76] See, Duke/NS, 7 S.T.B. at 171; Duke/CSXT, 7 S.T.B. at 476; TMPA, 6 S.T.B. at 701, n. 83; Wisconsin P&L, 5 S.T.B. at 1023.

[77] See, for costs of excavation, AEPCO, slip op. at 89-90; PSCo/Xcel, 7 S.T.B. at 677-678; WFA/Basin, slip op. at 86-87; AEP Texas, slip op. at 82. See, for 50/50 split for solid and loose rock, AEPCO, slip op. at 90; PSCo/Xcel, 7 S.T.B. at 677; Duke/NS, 7 S.T.B. at 174; CP&L, 7 S.T.B. at 312; Duke/CSXT, 7 S.T.B. at 478.

railroad construction projects. AEPCO, slip op. at 80-86; WFA/Basin, slip op. at 86. DuPont also utilized, consistent with prior Board precedent, ICC Engineering Reports and information provided by NS in discovery and from the Means Handbook for earthwork quantities, culverts, retaining walls, rip rap, seeding and topsoil, and other information. See infra pp. III-F-6 to 23.[78]

Similarly, track construction for the DRR hews closely to Board precedent and the NS' own specifications. The DRR incorporates geotextile fabric in the construction of its lines, in accordance with past cases. See infra p. III-F-25; AEPCO, slip op. 103; WFA/Basin, slip op. at 94-95. Culverts are used to replace bridges less than twenty feet in length. Infra p. III-F-33; AEP Texas, slip op at 93. Quantities of ballast and subballast conform to NS' standard roadbed section, and prices from quotes obtained from suppliers and data obtained from NS in discovery. See infra pp. III-F-25 to 27. The DRR's spacing of wood ties conforms to the standard approved in numerous Board decisions. See infra p. III-F-27; AEPCO, slip op. at 103; WFA/Basin, slip op. at 95-96; AEP Texas, slip op. at 88; West Texas, 1 S.T.B. at 707. The DRR's use of 136-pound continuous welded rail ("CWR")for main tracks and 115-pound rail for lighter density lines conforms to standard Board practice. See infra p. III-F-28; AEPCO, slip op. at 104; WFA/Basin, slip op. at 98; AEP/Texas, slip op. at 88; Duke/NS, 7 S.T.B. at 184-85. Tunnel cost was based on prior Board decisions in the same geographic area. See infra pp. III-F-32 to 33; Coal Trading Corp., 6 I.C.C.2d at 422. Bridge design was based on standard practice in prior cases. See infra pp. III-F-33 to 37; e.g., CP&L, 7 S.T.B. at 327.

As mentioned above, DuPont has incorporated a 2.7% mobilization factor, a figure which is slightly higher than the figure adopted by the Board in past cases,[79] a 10% additive for

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[78] The STB has relied on ICC Engineering Reports, Means, and defendant's information for these construction elements in approving the complainant's estimates in, for example, AEPCO, slip op. at 85, 92, 95, and 96.

[79] See infra p. III-F-49; supra n. 67.

engineering costs,[80] and a 10% contingency factor,[81] all consistent with Board precedent. See infra pp. III-F-49 to 50.

Finally, consistent with Board precedent, DuPont projects a 30-month period to construct the DRR, controlled by the time it takes to construct the most time-consuming single component, and in accordance with the principle of barrier-free entry, which in turn demands that there be unconstrained resources and simultaneous construction of the SARR. See infra pp. III-F-50 to 51; Coal Trading Corp., 6 I.C.C.2d at 412-413; West Texas, 1 S.T.B. at 674; Guidelines, 1 I.C.C.2d at 529-530.

8. Discounted Cash Flow Analysis and Application to SAC Analysis

The DCF methodology presented by DuPont in Part III-G and Part III-H is consistent with Guidelines and Major Issues, as applied in recent cases such as WFA Basin and WFA Basin II, AEP Texas, and AEPCO.

First, debt cost for the DRR for the construction period (2006-2009) equals the railroad industry average cost of debt for each year; for the remaining years of the DCF model, the DRR's cost of debt reflects the weighted average of the construction years' debt costs. See infra p. III-H-1. Consistent with Major Issues and previous Board decisions, the debt for road property investment is assumed to be amortized over twenty years. See infra p. III-H-3; Major Issues, slip op. at 65. However, in previous SAC cases, the parties assumed that the SARR would issue debt structured similar to a typical home mortgage loan, with quarterly payments consisting of an interest and a principal component, with the former declining and the latter rising over time. This is not, however, consistent with actual railroad industry debt payments, which are typically coupon payments consisting of fixed interest payments. DuPont, therefore,

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80 See infra p. III-F-49; supra n. 64.
81 See infra p. III-F-50; supra n. 63.

has developed a quarterly coupon payment schedule consistent with industry practice. See infra pp. III-H-2 to 3.

The cost of equity for the DRR is the then-current year railroad industry cost of equity. Thus, the DRR uses the industry average costs determined by the Board in its annual cost of capital proceedings to calculate the capital recovery charges for all road property investment. See infra p. III-G-3. This methodology is the same as the Board has used in its most recent SAC decision, where it adopted the methodology used in its decision in Use of a Multi-Stage Discounted Cash Flow Model in Determining the R.R. Industry's Cost of Capital ("Multi-Stage DCF"), Ex Parte No 664 (Sub-No. 1), STB served January 28, 2009. See, AEPCO, slip op. at 137; see also, WFA/Basin, slip op. at 135; AEP Texas, slip op. at 107; Duke/NS, 7 S.T.B. at 123; CP&L, 7 S.T.B. at 261. The DRR's cost of capital reflects the numbers approved by the Board in its cost of capital determinations for 2006 through 2010.[82] See infra p. III-G-3.

Operating costs were indexed as required by the Board's decision in Major Issues, to use an index composed of the RCAF-U and RCAF-A with expenses adjusted based on a changing "mix" of the two indices over time. See infra pp. III-G-6 to 7; Major Issues, slip op. at 39. DuPont also uses inflation indices for various road property components based on actual railroad prices and wage rates developed by the AAR, along with a Global Insight's March 2012 Rail Cost Adjustment Factor forecast, as approved by the Board in AEP Texas, slip op. at 109; Duke/NS, 7 S.T.B. at 123; and CP&L, 7 S.T.B. at 261. See infra pp. III-G-4 to 5. For land asset value inflation, DuPont has adopted the Board's most recent pronouncement on the subject, using a weighted combination of indices that reflect rural and urban land prices in proportion to

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[82] Ex Parte No. 558 (Sub-No. 10), Railroad Cost of Capital – 2006, served April 14, 2008; Ex Parte No. 558 (Sub-No. 11), Railroad Cost of Capital – 2007, served September 24, 2008; Ex Parte No. 558 (Sub-No. 12), Railroad Cost of Capital – 2008, served September 24, 2009; Ex Parte No. 558 (Sub-No. 13), Railroad Cost of Capital – 2009, served October 28, 2010.

the mix of land values on the DRR system routes, instead of a combination of indices that reflect the percentage of SARR acres that were rural versus urban. See infra pp. III-G-5 to 6 and AEPCO, slip op. at 139. DuPont has also conformed to the Board's preference, expressed in AEPCO, for using "longer rather than a shorter period of historic data when forecasting future economic trends, such as an inflation rate for land values or the cost of equity." Id. Accordingly, DuPont has developed an historic annual and quarterly percentage change in rural land values for the eighty-year period between 1930 and 2011 for the DRR states, similar to the time period that the Board used in developing its own risk premium used in its cost of capital proceedings. See, Multi-Stage DCF, slip op. at 10-11; AEPCO, slip op. at 139. See infra p. III-G-5. For urban land values, DuPont has developed a similarly long-time-period index of historic data. See infra pp. III-G-5 to 6.

Federal and state tax liability for the DRR was calculated consistent with the Board's decisions in prior cases. See, e.g., West Texas, 1 S.T.B. at 714; FMC, 4 S.T.B. at 848; infra pp. III-G-7 to 8. The DRR will take advantage of "bonus" depreciation provisions enacted as part of the Economic Stimulus Act of 2008 and the American Reinvestment and Recovery Act of 2009 ("ARRA"), as the Board has noted in its decision in AEPCO, slip op. at 141-142. See infra p. III-H-5. In the AEPCO decision, the Board noted that it would not "necessarily accept" the application of these tax benefits in calculating the DCF in future cases. The Board should accept the application of those benefits in this case, since they were applicable at precisely the point at which the DRR was hypothetically being constructed (the DCF model assumes that all assets are placed into service in the first year of the ten-year DCF period, which in this case is 2009). In fact, NS itself took advantage of those bonus provisions in 2008 through 2011 to defer significant taxes to later years. See infra p. III-H-6. Not permitting the DRR to do so would

constitute a barrier to entry forbidden by Guidelines, since it would force the SARR to pay a cost that the incumbent did not incur. Moreover, the bonus depreciation provisions are applicable for at least five tax years, a significant period of time, with the possibility that they will be extended. Id.

Finally, DuPont's evidence conforms to the requirements of Major Issues dictating the use of a ten-year analysis period, but assuming that the DRR would continue to operate for the foreseeable future. See infra pp. III-G-8 to 9. DuPont's calculation accounts for the costs associated with the renewed investments after the 10-year analysis period. See, AEP Texas, slip op. at 105-106; DuPont's evidence also utilizes, as required by Board precedent, a real capital carrying charge that is equal in each year of the DCF period, regardless of changes in volume. See, WFA/Basin, slip op. at 134-135; infra pp. III-G-8 to 9.

Prior to its decision in AEPCO, unused depreciation was accounted for in an undiscounted terminal value calculation; AEPCO changed that approach to calculate the present value of unused depreciation in the terminal value calculation. See, AEPCO, slip op. at 140-141. DuPont's evidence conforms to the Board's conclusions in AEPCO, but has identified a flaw in the Board's model, which it has corrected in its evidence. See infra pp. III-H-8 to 10.

DuPont's DCF analysis combines all of the analyses above and others set forth in its evidence to develop a quarterly levelized capital carrying charge equaling the required investment to be recovered from the quarterly capital recovery flow. See infra p. III-H-10. This is then combined with the DRR's tax liability and operating expenses over the ten-year analysis period to show a summary of the SAC for the DRR. See infra p. III-H-11.

9. After Careful Application of the Procedures Called For By the Board's Principles and Rules in Guidelines, Major Issues, and By Board Precedent, DuPont's SAC Analysis Shows That the Rates Charged by NS Far Exceed a Reasonable Maximum

DuPont's SAC analysis was developed with the Board's principles in Guidelines, the Board's rules in Major Issues, and the procedures adopted by the Board in its past SAC decisions in mind, and is consistent with those decisions. Application of those procedures shows that, over the 10-year DCF period, the revenues generated by the DRR exceed its total capital and operating costs, indicating that the rates being charged by the NS exceed a reasonable maximum under the SAC constraint set forth in Guidelines. See infra pp. III-H-11 to 12.

In such a case the Board must then decide "what relief to provide to the complainant by allocating the revenue requirements of the SARR among the traffic group and over time." AEPCO, slip op. at 143-144. In Major Issues, the Board adopted the Maximum Markup Methodology ("MMM") as its new rate prescription approach. Major Issues, slip op. at 14-15. DuPont has utilized the Board's MMM procedures, using the revenues generated by the Board's ATC methodology; variable costs using the NS's 2009 and 2010 URCS costs; and the Board's standard URCS indexing approach. See infra pp. III-H-12 to 14. Application of the MMM yields maximum R/VC ratios for each year of the DCF model ranging from 96.6 percent to 119.6 percent, and application of those percentages yields maximum reasonable rates for DuPont's traffic, using the greater of the jurisdictional threshold or the MMM maximum rates. See infra p. III-H-14. DuPont's rates exceed both the jurisdictional threshold and the issue rates for all movements.

10. Rate Relief and Damages

Based on the evidence presented herein, the Board should find that the rates set forth in the NS tariffs at issue in this Complaint exceed the maximum reasonable levels as determined

under the SAC constraint of the Guidelines and are therefore unlawful under 49 U.S.C. § 10701(d).

Accordingly, since in all time periods relevant to this Complaint, *i.e.,* between June 1, 2009 and for the prescription period ending on May 31, 2019, the Board's prescribed SAC methodology results in a rate below the jurisdictional threshold, the Board should prescribe maximum reasonable rates at the jurisdictional threshold.

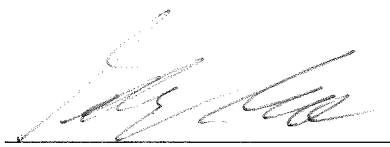
In addition, since June 1, 2009 and various dates thereafter depending upon the issue movement, DuPont has paid NS freight charges at tariff rates significantly higher than the lawful maximum rates summarized in the previous table. Pursuant to 49 U.S.C. § 11704(b), the Board should award DuPont damages resulting from the payment of rates that exceed a reasonable maximum. The Board should therefore award damages to DuPont, consisting of a refund of overpayments plus interest.

C. CONCLUSION

For the foregoing reasons, DuPont requests that the Board find that:

1. NS possesses market dominance over each of the 138 issue movements in DuPont's Third Amended Complaint;
2. the challenged rates for each of the issue movements are unreasonable;
3. DuPont is entitled to reparations for monies paid in excess of a reasonable rate from June 1, 2009 through the present; and
4. DuPont is entitled to a reasonable prescribed rate for a period of 10 years beginning on June 1, 2009.

Respectfully submitted,



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April 30, 2012

PUBLIC VERSION

CERTIFICATE OF SERVICE

I hereby certify that this 30th day of April 2012, I served a copy of the Opening Evidence and Argument or E.I. du Pont de Nemours and Company upon Defendant via hand-delivery at the address below:

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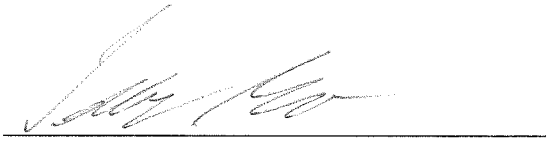

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