UNITED STATES OF AMERICA
BEFORE FEDERAL TRADE COMMISSION

In the Matter of	)	
CHICAGO BRIDGE & IRON COMPANY N.V.	)	
a foreign corporation,	)	
	)	Docket No. 9300
CHICAGO BRIDGE & IRON COMPANY	)	
	)	**(PUBLIC VERSION)**
a corporation, and	)	
PITT-DES MOINES, INC.	)	
a corporation.	)	

To: The Honorable D. Michael Chappell
Administrative Law Judge

COMPLAINT COUNSEL'S PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW

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COMPLAINT COUNSEL'S PROPOSED FINDINGS OF FACT

I.

WHY THIS MERGER MAY LESSEN COMPETITION

1. "Mergers are motivated by the prospect of financial gains." *Merger Guidelines* § 0.1.[1] The *Merger Guidelines* "focus on the one potential source of gain that is of concern under the antitrust laws: market power." (*Id.*) "Market power to a seller is the ability profitably to maintain prices above competitive levels for a significant period of time." (*Id.*) "The unifying theme of the [*Merger Guidelines*] is that mergers should not be permitted to create or enhance market power or to facilitate its exercise." (*Id.*; Simpson, Tr. 2985).

2. By acquiring Pitt-Des Moines, Inc.'s Water and EC Divisions ("PDM"), Chicago Bridge & Iron Company ("CB&I") has eliminated an important restraint on its ability to raise prices and margins. Other firms cannot replace the competitive void left by PDM's demise. CB&I's dominant position in highly concentrated markets increases the likelihood that CB&I has achieved, and will be able to exercise, market power, either in coordination with other firms or unilaterally. Indeed, there is evidence that without PDM to discipline it, CB&I has in fact raised prices and margins in the relevant markets. CCFF 750-1221.[2]

3. It is undisputed that the relevant product markets in which to analyze the merger are large, field-erected: (1) liquefied natural gas storage tanks ("LNG"); (2) LNG import terminals; (3) LNG peak shaving plants; (4) liquid nitrogen, oxygen and argon storage tanks ("LIN/LOX"); (5) refrigerated liquid petroleum gas storage tanks ("LPG"); and (6) large (over 20 feet in diameter) thermal vacuum chambers ("TVC"). CCFF 50-94.

4. It is undisputed that the relevant geographic market in which to analyze the CB&I-PDM merger is the United States. CCFF 95-98.

5. In the LNG and TVC markets, the merged entity's market share is 100%. In the LIN/LOX and LPG markets, the merged entity's market share exceeds 70%. CCFF 148-193.

6. CB&I's acquisition of PDM creates a dominant firm in highly concentrated markets. In the LNG market, the merger increases the HHI by at least [ ] to 10000; in the LIN/LOX market, the merger increases the HHI by at least [ ] to [ ]; in the LPG market, the merger increases the HHI by [ ] to [ ]; and in the TVC market, the merger increases the HHI by [ ] to 10000. CCFF 146, 160, 180, 193.

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[1] U.S. Dept. of Justice & Federal Trade Commission, *Horizontal Merger Guidelines* (1992 rev'd 1997).

[2] "CCFF" refers to Complaint Counsel's Proposed Findings of Fact.

7. The *Merger Guidelines* provide that where "the post-merger HHI exceeds 1800, it will be **presumed** that mergers producing an increase in the HHI of more than 100 points are likely to create or enhance market power or facilitate its exercise." *Merger Guidelines* § 1.51(c) (emphasis supplied). In all of the relevant markets, CB&I's acquisition of PDM increases the HHI by a minimum of 3200 and, by a wide margin, above the 1800 threshold necessary to trigger the presumption of illegality.

8. CB&I and PDM were each other's closest competitors. Respondents' ordinary course of business records repeatedly and consistently identify each other, to the exclusion of all other firms (foreign and domestic), as each other's main competitive threat. CCFF 204-231. The testimony of industry participants confirms this intense rivalry. CCFF 232-251.

9. The record of projects won in the United States by CB&I and PDM reflect their positions as the leading firms and closest competitors. Since 1990, CB&I or PDM was the firm chosen by nearly every United States customer to build the relevant products. CCFF 146, 151, 172, 192.

10. Since 1990, no foreign firm has beaten CB&I or PDM in head-to-head competition for a project in the United States. CCFF 146, 151, 172, 192. Since 1990, domestic firms have beaten CB&I or PDM in head-to-head competition in only a small handful of projects in the United States. CCFF 146, 151, 172, 192.

11. The competition between CB&I and PDM benefitted customers in the form of, *inter alia*, lower prices. In order to beat the other, CB&I and PDM strived to lower costs, reduce prices aggressively and accept lower margins. CCFF 252-291. This vigorous competition caused CB&I and PDM to quote prices to customers at comparatively low margins, including at times negative margins. CCFF 252-291.

12. In markets where firms submit bids to customers, the price to the customer is "determined by the cost of the second lowest-cost seller" – historically either CB&I or PDM. *Merger Guidelines* § 2.21, n. 21. Thus, a merger between close competitors like CB&I and PDM "could cause prices to rise to the constraining level of the next lowest-cost seller." (*Id.*)

13. Respondents' principal defense is that new entry or expansion by existing firms will replace PDM and deter or counteract any anticompetitive conduct by CB&I. The *Merger Guidelines* require that entry must be timely, likely and sufficient. *Merger Guidelines* § 3.0. In other words, the foreign or domestic entrant must be able to "cause prices to fall to their premerger levels or lower." (*Id.*)

14. Entry into the relevant markets is not easy. There are numerous and significant barriers to entry. CCFF 292-392.

15. Respondents' business records and the testimony presented in this case confirm that CB&I and PDM won the vast majority of projects in the United States because entry barriers placed

other firms (foreign and domestic) at a competitive disadvantage. CCFF 393-420. CB&I acknowledges that this competitive disadvantage persists today, which explains why no firm has eroded CB&I's dominant market position or restrained CB&I's market power since the merger. CCFF 399 and 400-402.

16. Respondents did not present any evidence of a post-merger competitive situation where another firm (foreign or domestic) constrained CB&I/PDM's pricing strategy. To the contrary, the numerous examples of post-merger price and margin increases by Respondents indicate that other firms, domestic and foreign, have neither deterred nor counteracted Respondents' exercise of market power. CCFF 750-1221.

17. Industry members with first-hand knowledge about the vigorous head-to-head competition between Respondents are concerned that this merger will result in higher prices. CCFF 711-729. None of Respondents' customer witnesses had the requisite first-hand experience with pre-merger competition between CB&I and PDM in the United States to attest to the likely competitive effects of the merger.

18. Respondents' merger planning documents and the testimony in this case demonstrate that the rationale for the merger was to create a dominant firm with the power to raise prices and margins. CCFF 730-749.

19. Consistent with its dominant market position, and as predicted by industry participants and Respondents' merger planning documents, CB&I/PDM has in fact raised prices and its margins since the merger. CCFF 750-1221.

20. [

]. CCFF 778-831.

21. [

]. CCFF 930-978, 1008-1027.

22. On three LNG projects for [ ], CB&I pressured [ ] to enter into negotiations for a sole-source arrangement in which [ ] may incur higher costs and CB&I is likely to earn a higher margin. [ ] rationale for doing so included an analysis that showed that CB&I's foreign competitor's prices for single-containment LNG tanks were at least [ ] higher than CB&I's prices. That same analysis shows PDM as the closest price constraint on CB&I. CCFF 832-929.

23. In both the Dynegy and Yankee Gas projects, CB&I attempted to leverage its competitive advantages compared to other LNG tank suppliers to convince the customers to accept CB&I as the tank constructor and supplier on terms favorable to CB&I. CCFF 979-1007 (Dynegy); CCFF 1008-1027 (Yankee Gas).

24. On LIN/LOX projects in New Mexico, Respondents have quoted prices, with positive margins, that are 8.7% higher than prices for comparable projects awarded to CB&I and PDM immediately before the merger. When Respondents competitively bid against each other before the merger, their aggressive price reductions often resulted in **negative** margins on LIN/LOX projects. CCFF 277-278.

25. On a TVC project for Spectrum Astro, immediately after the merger, Respondents implemented a price increase that anticipates a 50% increase in margins, from [ ] to [ ]. CCFF 1109-1165.

26. On a TVC project for [ ], immediately after the merger, Respondents implemented a 35% increase from the price quoted by PDM before the merger, from [ ] million to [ ] million. CCFF 1208-1221.

27. Respondents did not present any evidence challenging the accuracy of these price and margin increases since the merger.

28. Respondents have also engaged in conduct suggestive of collusion. Before the companies finalized the merger (and while the FTC was still investigating the merger), on the TVC project for Spectrum Astro there were impermissible inter-company activities. CCFF 1120-1125. There is also evidence of impermissible communications between Respondents and a competing supplier regarding bidding on a TVC project for TRW. CCFF 1174-1178.

29. By proposing a TVC remedy to the Tribunal during the trial, Respondents have conceded that this merger will likely have anticompetitive effects in the TVC market.

30. Respondents have abandoned any claim that the merger will generate significant cognizable efficiencies or that any such efficiencies "likely would be sufficient to reverse the merger's potential to harm consumers in the relevant market." *Merger Guidelines* § 4.

31. Given that Respondents have not presented an efficiencies defense that the merger reduced costs, these post-merger higher profit margins show that prices have increased after the acquisition. Post-merger increases in profit margins and prices constitute evidence that a merger created market power.

32. Respondents assert an "exiting assets" defense that has never been recognized by the *Merger Guidelines* or any court. In any event, the evidence flatly contradicts Respondents' claim. Absent the merger, PDM would have continued as a viable and vigorous competitor against CB&I.

Respondents failed to prove that PDM conducted an exhaustive search for alternative buyers; and it could not have exited the market in any event, since PDM planned to sell the assets, including on-going contracts, to other companies. CCFF 1227-1239.

33. Complaint Counsel has demonstrated sufficiently high market shares and increases in market concentration to trigger the presumption that the CB&I/PDM merger will likely have anticompetitive effects. Complaint Counsel has also shown that the elimination of CB&I's closest competitor will likely lessen competition. Respondents have not rebutted this presumption with proof of ease of entry, cognizable efficiencies or an "exiting assets" defense. Although not required to do so, Complaint Counsel has also shown instances of actual anticompetitive effects. In other words, the evidence establishes that this merger violates Section 7 of the Clayton Act and Section 5 of the FTC Act.

34. The explicit terms of the Clayton Act and Supreme Court and FTC precedents unequivocally require an order of divestiture in this case. Respondents must be ordered to recreate PDM as a viable competitor. There is substantial evidence on how the divestiture must be implemented. CCFF 1283-1375.

II.

THE RESPONDENTS AND THE MERGER

A. The Respondents

35. Since 1990, CB&I and PDM have won virtually all of the field-erected LNG, LIN/LOX, LPG and TVC projects awarded in the United States. CCFF 135, 151, 172, 192.

1. *CB&I*

36. Among other products and services, CB&I is engaged in the business of designing, engineering, manufacturing and constructing field-erected LNG, LIN/LOX and LPG storage tanks and TVCs in the United States and abroad. (CX 1033 at 6; CX 212 at CBI-PL 031711).

37. In 1999, prior to the merger, CB&I had revenues of $674 million; in 2000, revenues were $612 million; in 2001, after the merger with PDM, revenues were approximately $1.081 billion. (CX 1033 at 22). In 1999, CB&I had adjusted earnings before interest, taxes, depreciation, and amortization (EBITDA) of $49 million; in 2000, earnings were $46 million; in 2001, after the merger with PDM, earnings were approximately $89 million. (CX 1033 at 28).

2. *PDM*

38. Prior to being acquired by CB&I, Pitt Des-Moines, Inc. ("Pitt Des-Moines") was a diversified company with several divisions, two of which were PDM Engineered Construction (PDM EC) and PDM Water. Both divisions were acquired by CB&I. (CX 328 at CBI 001253-CHI).

39. Pitt Des-Moines was a corporation organized and existing under the laws of the Commonwealth of Pennsylvania, publicly traded on the American Stock Exchange, with its principal place of business at 1450 Lake Robbins Drive, Suite 400, the Woodlands, Texas, 77380. (CX 328 at CBI 001253-CHI; CX 21 at PDM-C 1000003; Byers, Tr. 6732). PDM's headquarters were located at 10200 Grogan's Mill Road, Suite 300, the Woodlands, Texas, 77380. (CX 661 at PDM-HOU017554).

40. In 1999, Pitt-Des Moines had a total revenue of $629 million and EBIT of $41 million. (CX 520 at TAN 1003289; Scheman, Tr. 2915-2916). In 2000, Pitt-Des Moines had a total revenue of $659 million and EBIT of $76 million. (CX 520 at TAN 1003289; Scheman, Tr. 2915-2916). In 1999, PDM had a total revenue of $281 million and EBIT of $16.1 million. (CX 525 at TAN 1000385). In 2000, PDM had a total revenue of $268 million and EBIT of $0.7 million. (CX 525 at TAN 1000385).

41. Among other products and services, PDM was engaged in the business of designing, engineering, manufacturing and constructing field-erected LNG, LIN/LOX and LPG storage tanks and TVCs in the United States and abroad. (CX 522 at TAN 1003371; CX 850 at PDM-HOU 0129192-0129195, 0129199; CX 911 at CBI 028717-HOU -CBI 028726-HOU).

B. The Merger

42. In August of 2000, CB&I offered $93.5 million for PDM. (CX 521 at TAN 1000328).

43. In late May of 2000, Goldman Sachs, the investment banking firm, valued PDM at $68.6 million. (Byers, Tr. 6745-46). Goldman Sachs also believed that a "[r]equest for a preemptive bid may elicit a full price from a strategic buyer," and listed dozens of potential buyers who were never called. (CX 520 at TAN 1003292; Scheman Tr. 2915-16). CB&I was a preemptive buyer of PDM, and thus, no other prospective buyers were solicited. (Scheman, Tr. 2938-39).

44. Tanner believed, "rational buyers who were the only people who would make sense would be unlikely to put up a premium price in light of the fact that they had tough competition from CB&I." (Scheman, Tr. 2967).

45. On August 29, 2000, CB&I and PDM entered into a letter of intent for CB&I to acquire PDM. (CX 21 at PDM-C 1000003).

46. CB&I's earlier offer of $93.5 million for PDM was negotiated downward to $84 million in December of 2000 because of financial losses suffered by PDM EC in 2000. (Byers, Tr. 6789-6790). CB&I's purchase price of $84 million was eventually lowered to approximately $76 to $77 million because of losses in PDM's foreign subsidiary, PDM Venezuela, that did not become apparent until after the transaction was consummated. (Byers, Tr. 6793-6794).

47. Respondents made their filings under the Hart-Scott-Rodino Act ("HSR") on September 12, 2000. (CX 56 at PDM-HOU 002331). The initial waiting period under HSR expired on October 12, 2000. (CX 56 at PDM-HOU 002331).

48. On November 12, 2002, this administrative hearing began before the Honorable D. Michael Chappell, Administrative Law Judge. (Tr. 4). The hearing ended on January 16, 2003. (Tr. 8364).

49. On January 16, 2003, the record in this matter was closed. (Tr. 8364).

III.

THE SIX RELEVANT PRODUCT MARKETS ARE LARGE, FIELD-ERECTED LNG, LIN/LOX AND LPG STORAGE TANKS AND TVC

50. The relevant product markets in which to analyze the acquisition are field-erected LNG storage tanks (individually, or as a component of an LNG import terminal or a LNG peak shaving plant), LIN/LOX storage tanks, LPG storage tanks and TVCs.

51. Respondents agree that the relevant product markets are field-erected LNG storage tanks, LIN/LOX storage tanks, LPG storage tanks and TVCs. Drs. Simpson and Harris agree on the relevant product markets. (Simpson, Tr. 2989 (LNG); Harris, Tr. 7192 (LNG); Simpson, Tr. 3356-57 (LPG); Harris, Tr. 7280 (LPG); Simpson, Tr. 3416-17 (LIN/LOX); Harris, Tr. 7300 (LIN/LOX); Simpson, Tr. 3483 (TVC); Harris, Tr. 7324 (TVC)).

52. The first step in analyzing mergers and acquisitions is to distinguish between close and distant substitutes. (Simpson, Tr. 2986). "[T]he definition of the product market seeks to distinguish between producers of close substitutes whose actions would have a large effect on the marketplace and producers of distant substitutes whose actions would have little, if any, effect on the marketplace" (Simpson, Tr. 2992).

53. The *Merger Guidelines* define a product market by asking whether a hypothetical monopolist of some set of products could profitably increase price by a small but significant amount, such as 5%. (Simpson, Tr. 2992). Field-erected LNG, LIN/LOX and LPG tanks and TVCs comprise relevant product markets if a "small but significant and nontransitory" increase in the price of these products does not induce so much substitution to other storage alternatives that the price increase would be unprofitable. (*Merger Guidelines* § 1.11). For each of these products, there are no economic substitutes to which customers will turn in the face of a "small but significant and nontransitory" price increase.

A. LNG Tanks Are a Relevant Product Market

54. LNG storage tanks are a type of cryogenic tank that stores natural gas or methane at a temperature of -260° F. (Kistenmacher, Tr. 879; CX 1074 at CBI-001243-PLA). Due to these very cold temperatures, LNG storage tanks are made of special materials, such as 9% nickel alloy steel, and are specially designed so that they do not crack. (Kistenmacher, Tr. 881-82; CX 1074 at CBI-001245-PLA). LNG tanks are double-walled, with special perlite insulation between the two shells, and may have some form of concrete containment for safety reasons. (Kistenmacher, Tr. 881-82; CX 1074 at CBI-001243-PLA). The outer walls of single containment tanks are carbon steel and the inner walls are 9% nickel steel. (CX 1074 at CBI-001243-PLA).

55. [

]. (Price, Tr. 524-525; Kistenmacher, Tr. 879; CX 176 at CBI-PL010926, *in camera*; CX 162 at CBI-PL006153; Puckett, Tr. 4566; J. Kelly, Tr. 6260).

56. There are three basic types of LNG tanks: (1) single containment; (2) double containment; and (3) full containment. (Puckett, Tr. 4541; Bryngelson, Tr. 6170-71). The type of LNG tank that is traditionally built in the United States is a single containment tank. (Glenn, Tr. 4110-4111). Single containment LNG tanks store LNG in a 9% nickel steel inner tank that is surrounded by a low earthen dike which would contain LNG in case of a leak. (Puckett, Tr. 4541; Bryngelson, Tr. 6173; CX 1074 at CBI 001243-PLA). Double containment tanks have the same 9% nickel steel inner tank as a single containment tank, but offer a concrete outer tank to contain spillage from the inner tank. (Price, Tr. 530-32; CX 1074 at CBI 001243-PLA). Full containment tanks consist of a self-supporting inner tank and the outer tank used in a double-containment tank, but also include a concrete roof, so that the inner tank is completely encapsulated in a concrete shell. (CX 1074 at CBI 001243-PLA). Full containment tanks are designed to contain both the spillage of refrigerated liquid and the vapor resulting from leakage. (CX 1074 at CBI 001243-PLA).

57. LNG import terminals are "facilities to receive an LNG tanker, offload LNG into LNG storage tanks, take the LNG from those storage tanks over time, vaporize it, pressurize the gas, and send it out into a pipeline." (Bryngelson, Tr. 6170). The terminals include storage tanks, ship loading/unloading facilities, send-out facilities and vapor handling systems. (CX 650 at CBI/PDM-H4019758). LNG is stored in the tanks, pumped out, vaporized and injected into pipelines for transmission to end users. (CX 853 at PDM-HOU011487).

58. LNG peak shaving plants store LNG to provide an emergency reserve of LNG in the event that gas customers experience a severe shortage of natural gas. (CX 650 at CBI/PDM-H4019758). LNG peak shaving plants consist of a liquefaction unit, where the gas is turned into liquid, and LNG storage tanks. (Kistenmacher, Tr. 884-85). In LNG peak shaving facilities, natural gas from a pipeline is refrigerated in the liquefaction unit and stored in liquid form in an LNG tank during the warmer months when demand and prices are low. (CX 142 at CBI 000241-HOU). As gas demand increases in colder months, the stored LNG is heated, vaporized and put back into the supply stream to meet heating demand peaks, when prices are high. (CX 142 at CBI 000241-HOU; Hall, Tr. 1775-1776).

59. The evidence demonstrates that a small but significant, nontransitory increase in the price of a field-erected LNG tank would not prompt customers to switch to alternative products. (*see* Price, Tr. 450; Bryngelson, Tr. 6217-6218; Davis, Tr. 1781).

60. There are no economical alternatives to using field-erected LNG tanks for storing LNG. (CX 1074 at CBI001243-PLA; *see also* Price, Tr. 540; Bryngelson, Tr. 6217; Davis Tr. 3186; Hall, Tr. 1781, 1786; JX 21 at 47-48 (Andrukiewicz, Dep.)).

61. A 5-10% price increase "translates into maybe a 4 or 5 increase – percent increase in overall cost, which would translate into a couple of pennies per mm Btu that we would have to charge

the customer, and that's something that can probably be absorbed by the customer and by our profit margin." (Bryngelson, Tr. 6217-18).

62. LNG tanks comprise about half of the cost of a peak shaving plant and about one-

quarter to one-half of the cost of an import terminal. (Bryngelson, Tr. 6215-16; CX 1185 at CBI-PL045968). Thus, a 10% increase in the price of an LNG tank would result in no more than a 5% increase in the price of a peak-shaving plant or an import terminal. (Bryngelson, Tr. 6217-18). A price increase of this size is unlikely to make or break a project. (*Id.*)

63. Luke Scorsone, President of CB&I Industrial and former President of PDM-EC, could not cite a single instance in which a potential customer of an LNG tank tried to get a lower price by threatening to switch to an alternative to an LNG tank. (Scorsone, Tr. 2845).

64. Respondents' documents focus exclusively on competition with other field-erected LNG tank builders rather than on competition from suppliers of alternative products. (*See, e.g.*, CX 1185 at CBI-PL045968; CX 227 at CBI-PL045127-5133; CX 184 at CBI-PL012440-2441; CX 259 at CBI-H003002; CX 94 at PDM-HOU017580; CX 107 at PDM-HOU005016).

65. The large tanks required for LNG storage are much too large practically to shop-fabricate and ship to the site. (Andrukiewicz, Tr. 6697-98). Shop-fabricated tanks cannot provide the storage levels required for LNG facilities. A shop-fabricated tank provides less than 1% of the storage that a field-erected LNG tank provides. (RX 6 at CBI-PL 031593). Shop-built tanks have size limitations and are "not a direct substitute for larger quantities of LNG." (Davis, Tr. 3184). LNG tanks designed to hold above a certain volume of LNG must be field-erected. (Blaumueller, Tr. 287). The largest shop-built tanks "would pale in comparison to field tanks." (Davis Tr. 3184-85). For example, 420 shop erected tanks would be required to replace one large LNG tank. (Price, Tr. 536-37).

66. It is not economic to use multiple shop-built LNG tanks as a substitute for one field-erected LNG tank. (Kistenmacher, Tr. 880). El Paso has not considered shop-built LNG tanks for the LNG imports terminals it is planning because the storage volumes are too large. (Bryngelson, Tr. 6220).

B. LIN/LOX Tanks Are a Relevant Product Market

67. LIN/LOX/LAR tanks are field-erected cryogenic tanks that store various liquid gas products including hydrogen, oxygen, nitrogen, argon and helium at cryogenic temperatures, typically at -300°F or lower. (CX 650 at CBI/PDM-H4019758).

68. LIN/LOX tanks typically hold 400,000 to 1,000,000 gallons and cost $500,000 to $1 million each. (CX 170 at CBI-PL009650).

69. The tanks typically include an inner and outer shell of steel material. (JX 37 at 13 Newmeister, Dep.)). The inner tank is made of stainless steel to withstand cryogenic temperatures without becoming brittle and cracking. (Kistenmacher, Tr. 835). Between the two shells is perlite insulation. (Kistenmacher Tr. 833-834). LIN/LOX tanks have dome roofs, safety relief valves and nozzles that connect to piping and other equipment. They are built to withstand wind and seismic

conditions. (Kistenmacher, Tr. 864).

70. LIN/LOX tanks are an essential part of integrated air separation facilities. Air separation plants take ambient temperature air and cool it down to a temperature around -300°F, and through a distillation process separate air into its liquefied elements: nitrogen, oxygen, and argon. (Kistenmacher, Tr. 825-26; Patterson, Tr. 338).

71. The evidence demonstrates that a small but significant nontransitory increase in the price of a field-erected LIN/LOX tank would not prompt customers to switch to alternative products. (Kistenmacher, Tr. 839-940; *see also* Hilgar, Tr. 1385 (unaware of any substitutes to a field-erected LIN/LOX tank)).

72. Field-erected tanks are used in industrial applications that require large amounts of storage capacity. In these applications, it is not economic to use shop-built LIN/LOX tanks. (JX 37 at 33 (Newmeister, Dep.)).

73. Shop-fabricated LIN/LOX tanks can store up to 80,000 gallons of liquid. (Hilgar, Tr. 1385). If a company tried to use shop-erected tanks for applications that require large amounts of storage, it would need to use many smaller tanks, instead of one large, field-erected LIN/LOX tank. (Kistenmacher, Tr. 838; JX 37 at 33 (Newmeister, Dep.)). The cost of multiple shop-built tanks would be higher than the cost of one field-erected tank that could store the same amount of product. Including the cost of attaching all of the piping for connecting multiple shop-built tanks, the increased cost would be "astronomical." (Kistenmacher, Tr. 838-39).

74. Air Products buys only field-erected LIN/LOX tanks for projects requiring storage of large volumes of liquid. (Hilgar, Tr. 1385). Air Products is not aware of any substitute for LIN/LOX tanks. (Hilgar, Tr. 1385-86).

75. A small but significant, nontransitory increase in the price of field-erected LIN/LOX tanks would have no impact on demand for field-erected LIN/LOX tanks because of the large cost differential with shop-built LIN/LOX tanks. (Kistenmacher, Tr. 839; Hilgar, Tr. 1385).

C. LPG Tanks Are a Relevant Product Market

76. LPG tanks field-erected, refrigerated tanks that store liquefied gases such as propane, butane, propylene and butadiene at refrigerated temperatures of around -50° F. (Warren, Tr. 2275, 2306; CX 258 at CBI-H001793; CX 650 at CBI/PDM-H 4019758; CX 993 at PDM-HOU021479).

77. LPG customers are oil and petrochemical companies, such as Marathon and Enron; owners of LPG terminals, such as Sea-3 and CMS Energy, that import/export LPG and transfer the LPG between ships and storage tanks via pipelines; and EPC contractors, such as Fluor, who subcontract tank suppliers to build LPG tanks for larger facilities. (CX 993 at PDM-HOU-021484).

78. The evidence demonstrates that a small but significant, nontransitory increase in the price of a field-erected LPG tank would not prompt customers to switch to alternative products.

79. Field-erected LPG tanks can hold substantially larger volumes of LPG than shop-built tanks. (RX 778 at 46-47 (Crider, Dep.)).

80. Because field-erected tanks can hold a larger volume of LPG, it allows LPG customers to import and export LPG at a faster rate, and minimizes the amount of money customers spend to hold a ship while the LPG is being transferred. (RX 778 at 26-27 (Crider, Dep.)).

81. Shop-built pressurized tanks (also known as bullets) and field-erected pressure spheres are not economic substitutes for an LPG tank when storing large volumes. (Scorsone, Tr. 5170-71; Crider, Tr. 6719-20-1; JX 27 at 32 (N. Kelley, Dep.)). For some chemicals such as butadeine, storage tanks must be refrigerated to keep the chemical from polymerizing. (JX 27 at 38-39 (N. Kelley Dep.). For such chemicals an unrefrigerated pressure sphere (or bullet) is not a substitute for an LPG tank.

82. To adopt a storage solution for 400,000 barrels of LPG based on multiple shop-built LPG pressure spheres would cost approximately three times the amount of a storage solution based on a field-erected LPG tank. (RX 778 at 46-47 (Crider, Dep.)).

83. PDM EC's former president, Mr. Scorsone, who has worked in the tank industry for many years, has never seen a customer switch from field erected LPG tanks to shop-built pressurized tanks to obtain a lower price. (Scorsone, Tr. 5170-71).

D. TVCs Are a Relevant Product Market

84. A TVC is a large metal enclosure used to simulate the vacuum of space for the purpose of testing satellites. During a test, air is pumped out of the enclosure and, within the enclosure, liquid or gaseous nitrogen circulates through pipes to heat or cool the interior environment. Controls allow users to adjust the temperature and vacuum conditions inside the enclosure so that satellites can be tested in a space-like environment. (Thompson, Tr. 2039-40). Temperatures simulated within the chamber can range "from minus 180 degrees C to plus 150 degrees C" and the vacuum can range from 1×10^{-6} torr to 1×10^{-8} torr. (Higgins, Tr. 1262; Scully, Tr. 1143). TVCs range in size from 20 feet in diameter to 45 feet in diameter. (Higgins, Tr. 1264).

85. The customers of TVCs are satellite manufacturers and government agencies, such as NASA. TVCs are used to test satellites purchased by the Department of Defense, NASA and commercial buyers. (Neary, Tr. 1420; Glenn, Tr. 4074-75; *see also* CX 1196 at PDM-HOU011524-1525 (list of PDM customers)).

86. "Customers are typically testing satellites costing $50MM to $200MM in thermal

vacuum chambers costing $5MM - $20MM." (CX 212 at CBI-PL031718). The satellites sold by TRW range in value from $750 million to $1.5 billion, while those sold by Spectrum Astro, a smaller satellite manufacturer, range in value from $10 million to $55 million. (Neary, Tr. 1420-21; Thompson, Tr. 2038).

87. The evidence demonstrates that a small but significant nontransitory increase in the price of a TVC would not prompt customers to switch to alternative products. CCFF 88.

88. TVCs are the only satellite testing equipment capable of simulating the vacuum and thermal conditions of outer space. (Higgins, Tr. 1262-63). Other testing chambers are not substitutes for TVCs because they only simulate other conditions. (Scully, Tr. 1139; Proulx, Tr. 1729). Satellite customers require that manufacturers test their satellites in TVCs. (Neary, Tr. 1424).

89. Luke Scorsone, President of CB&I Industrial and former President of PDM EC, could not recall an instance in which a potential customer of a TVC tried to get a lower price by threatening to switch to an alternative. (CX 646 at 76-77 (Scorsone, IHT)).

90. [ ]. (CX 265 at CBI-H007057; *see* CX 1202 at PDM-HOU1005348, *in camera*; CX 212 at CBI-PL031709-1724; CX 1196 at PDM-HOU011519-1532).

91. Shop-built TVCs are not economic substitutes for field-erected TVCs. Thermal vacuum chambers that are too large to transport from a fabrication shop to the customer's site must be field-erected. (Neary, Tr. 1421-22; Gill, Tr. 186-87; Glenn, Tr. 4064; JX 37 at 88 (Newmeister, Dep.)). At [Boeing], "90 percent of the time, most assembled satellites do require testing in field fabricated rather than [shop-fabricated thermal vacuum chambers]." (Proulx, Tr. 1727).

92. The construction of a shop-fabricated thermal vacuum chamber is "markedly different" from the construction of a field-erected thermal vacuum chamber. (Scully, Tr. 1101-02; Gill, Tr. 235). "In shop-built chambers, all of the equipment and capability, personnel capability, lies within the confines of the shop." (Scully, Tr. 1103). In contrast, field-erected chambers require a crew that "virtually lives in the field for elongated periods of time.... It's a vastly different technology than what a shop-built chamber requires." (Scully, Tr. 1103).

93. Satellites above a certain size cannot be tested in shop-fabricated thermal vacuum chambers. (Scully, Tr. 1139; Neary, Tr. 1425). Consequently, shop-fabricated thermal vacuum chambers are not an alternative to large, field-erected thermal vacuum chambers for testing large satellites. (Scully, Tr. 1140).

94. Other products, such as "thermal cycling chambers" and "altitude chambers" are not functional equivalents because they cannot mimic the conditions a satellite will face in space. (Neary, Tr. 1463-1464; *see* Scully, Tr. 1135-1139).

IV.

THE RELEVANT GEOGRAPHIC MARKET IS THE UNITED STATES

95. The parties agree that the relevant geographic market in which to analyze the merger is the United States. Drs. Simpson and Harris agree that the relevant geographic market in which to assess the impact of the acquisition is the United States. (Simpson, Tr. 3035 (LNG); Harris, Tr. 7192 (LNG); Simpson, Tr. 3361-3362 (LPG) (citing CX 116); Harris, Tr. 7280 (LPG); Simpson, Tr. 3421 (LIN/LOX); Harris, Tr. 7300-7301 (LIN/LOX); Simpson, Tr. 3488 (TVC); Harris, Tr. 7324 (TVC)).

96. By definition, field-erected LNG, LIN/LOX and LPG storage tanks and TVCs must be built at customers' sites in the United States. "LNG tanks are purchased as part of a larger facility that is designed to supply natural gas to gas users in a particular area. As a consequence, the LNG tanks have to be located in a particular locality." (Simpson, Tr. 3034). "The competitive situation is basically the same across the localities in the U.S., so defining the geographic market as the U.S...make[s] the analysis much more tractable without harming the analysis at all." (Simpson, Tr. 3035). Dr. Simpson testified: "LIN/LOX/LAR tanks are purchased as part of a facility that makes liquefied gas, and those facilities are built close to a customer." (Simpson, Tr. 3420). Dr. Simpson then noted: "[A]s with the other structures, the identity of the market participants is basically the same across the U.S. So to make the analysis more tractable, it makes sense to define the geographic market as the United States." (Simpson, Tr. 3421).

97. Respondents' business documents analyze competition separately in the United States compared to other areas of the world. Respondents' business documents identify the United States as a "marketplace in which they will institute a particular policy." (Simpson, Tr. 3035, *citing* CX 185). [

]. (Simpson, Tr. 3036, *citing* CX 364, *in camera*). PDM strategic documents differentiate between the domestic and international LNG markets and identify a separate cast of competitors for each market. (CX 99 at PDM HOU 000259; CX 646 at 282 (Scorsone, IHT)). [

]

(CX 94 at PDM-HOU017580; *see also* CX 217 at CBI-PL034441 *in camera*).

98. It is economically infeasible to import a field-erected storage tank from anywhere outside the United States. (Kistenmacher, Tr. 840, 881).

V.

THE MERGER WILL LIKELY LESSEN COMPETITION BECAUSE IT CREATES A DOMINANT FIRM IN HIGHLY CONCENTRATED MARKETS

99. Prior to the merger, CB&I and PDM each had market shares ranging from [ ] to [ ] in each relevant market. CCFF 146, 154. After the merger, the combined market share in the relevant markets ranges from 70% to 100%. CCFF 138, 151, 180, 191.

100. A 1998 presentation to the PDM Board reported market shares for PDM and CB&I as [ ] and [ ], respectively, for a combined share of [ ]. Morse was listed as having a [ ] share; since Morse is now owned by CB&I, the combined market share of all three firms is [ ]. (CX 648 at PDM-HOU000249).

101. These market share figures provide several important insights. First, Respondents' high pre-merger market shares reflect the vigorous direct competition that existed between them before the merger. "The market concentration measures provide a measure of this [unilateral anticompetitive price increase] if each product's market share is reflective of not only its relative appeal as a first choice to consumers of the merging firms' products but also its relative appeal as a second choice, and hence as a competitive constraint to the first choice." *Merger Guidelines* § 2.211.

102. Second, the greater the level of direct competition before the merger, as reflected in Respondents' high individual market shares, the greater the likely anticompetitive harm after the merger. *Merger Guidelines* § 2.21 ("The price rise will be greater the closer substitutes are the products of the merging firms, *i.e.* the more the buyers of one product consider the other product to be their next choice.").

103. Third, Respondents' [ ] plus combined market shares exceed the 35% level at which the *Merger Guidelines* "presume that a significant share of sales in the market are accounted for by consumers who regard the products of the merging firms as their first and second choices." *Merger Guidelines* § 2.211.

104. CB&I's and PDM's market shares, and those of other competitors in the relevant markets, are also used to compute the level of concentration in a particular market and the increase in concentration caused by the merger. "Market concentration is a useful indicator of the likely potential competitive effect of a merger." *Merger Guidelines* § 1.51.

105. The antitrust agencies use the Herfindahl-Hirschman Index ("HHI") of market concentration. *Merger Guidelines* § 1.5. The HHI is calculated by summing the squares of the individual market shares of all participants. (*Id.*) The increase in concentration caused by the merger is calculated by doubling the product of the market shares of the merging firms. (*Id.* § 1.51, n.18).

106. In the LNG market, the merger increases the HHI by [ ] to 10000; in the

LIN/LOX market, the merger increases the HHI by [ ] to [ ]; in the LPG market, the merger increases the HHI by [ ] to [ ]; and in the TVC market, the merger increases the HHI by [ ] to 10000. CCFF 146, 151, 180, 198.

107. The *Merger Guidelines* provide that where "the post-merger HHI exceeds 1800, it will be **presumed** that mergers producing an increase in the HHI of more than 100 points are likely to create or enhance market power or facilitate its exercise." *Merger Guidelines* § 1.51(c) (emphasis supplied).

108. In this case, the increase in concentration in each of the relevant markets is, at a minimum, *more than 25 times* as great as the threshold that the *Merger Guidelines* identify as the level of increase that is likely to create market power.

109. The HHI levels in this case well exceed the postmerger market concentration levels of recent FTC actions in which the FTC successfully enjoined mergers. *FTC v. Libbey*, 211 F. Supp. 2d 34 (D.D.C. 2002) (HHI of 5251); *FTC v. Heinz*, 116 F. Supp. 2d 190, 195 (D.D.C. 2000) (HHI of 5285); *FTC v. Swedish Match*, 131 F. Supp. 2d 151, 167 (D.D.C. 2000) (HHI of 4733); *FTC v. Cardinal Health*, 12 F. Supp. 2d 34, 53 (D.D.C. 1998) (HHI of 2224).

A. Market Shares Should Be Measured Based on Historical Sales

110. The appropriate measure of market shares is each firm's sales, as opposed to each firm's production capacity. In markets where the products are supplied on a differentiated basis, and in which firms have different capabilities to supply customers, it is appropriate to determine market shares by each firm's success in securing sales. *Merger Guidelines* § 1.41 ("Dollar sales or shipments generally will be used if firms are distinguished primarily by differentiation of their products. Unit sales generally will be used if firms are distinguished primarily on the basis of their relative advantages in serving different buyers or groups of buyers.").

111. Each of the relevant markets is comprised of highly differentiated products. Field-erected LNG, LIN/LOX and LPG tanks and TVCs vary by size, by specific application, by installation parameters, by site characteristics, and by specific design. Factors that differentiate LNG tanks include the location, the nature of the site, the size of the tank, and the tank's design. (CX 573 at CBI-PL031580 (describing CB&I LNG tank "design considerations," including factors such as codes and regulations, materials, site conditions, wind loads, seismic events, secondary containment and internal pressure); *see also* CX 85 (LIN/LOX tanks); CX 1048 (LPG tanks and TVCs)).

112. Suppliers set prices by individual project, depending on the nature of the project and on the level of competition among the suppliers. (Gill, Tr. 209-210; Price, Tr. 556). The design of the LNG tank is heavily dependent on an analysis of risk factors. (CX 573 at CBI-PL031585). [ ]. (*See, e.g.*, CX 827 (PDM pricing); CX 1321, *in camera* (CB&I pricing)).

113. In this case, the firms that compete for new projects are distinguished by several factors that are relevant to their ability to secure contracts. These include firms' actual experience, their reputation for providing quality products on a timely basis, their engineering and fabrication resources, and their cost structure. (Simpson, Tr. 3037).

114. In the past decade, Respondents have won virtually every contract in the relevant markets. CCFF 136, 151, 172, 192. Domestic firms have won only a handful of contracts and foreign firms have not won any contracts in head-to-head competition with Respondents. CCFF 136, 151, 172, 192. The reason Respondents' competitors have not won more contracts is because of the competitive advantage enjoyed by Respondents, including lower cost structures. CCFF 393-420.

115. Dr. Simpson provided a probability analysis for LNG tanks, which compared the actual results of bids with the likely results if other firms had been equally situated with CB&I and PDM. Based on his assessment, the probability is extremely low that CB&I and PDM would have prevailed as often as they did if other firms were equally capable of competing with CB&I and PDM. CCFF 141.

116. Actual sales data since 1990 provides the best data to measure market shares and concentration levels. "Market concentration and market share data of necessity are based on historical evidence." *Merger Guidelines*, § 1.521.

117. Because the products in all of the relevant markets are sold on an infrequent basis, sales data from any particular year may be unrepresentative of the competitive significance of any particular firm. Sales of LNG tanks are made infrequently. [

]. (CX 1210, *in camera*; CX 1212, *in camera*). That is fewer than one tank per year.

118. It is appropriate in this case to measure market shares by examining sales data over an extended period of time. *Merger Guidelines* § 1.41 ("where individual sales are large and infrequent so that annual data may be unrepresentative, the Agency may measure market shares over a longer period of time.").

119. In order to evaluate how CB&I's acquisition of PDM affected competition for LNG tanks, it is appropriate to examine sales from 1990 to the time of the acquisition (Simpson, Tr. 3037-38, 3043-46). Economists examine multi-year periods when analyzing competition (Simpson, Tr. 3044). The respondents use sales data going back eleven years or more to make inferences about the competitive strength of companies. (CX 160; CX 169 at CBI-PL 007573; CX 173 at CBI-PL010403; CX 205; CX 207 at CBI-PL 031456-57; CX 244). There is no evidence that market conditions changed significantly during this period. (Simpson, Tr. 3046).

120. Dr. Harris acknowledged that 1995 or 1996 would be an arbitrary starting date to examine market sales and that it would be wrong to conclude that the merger does not hurt competition simply because over some period of years CB&I or PDM accounted for all of the sales in the market

and the other firm accounted for none. (Harris, Tr. 7228).

121. Respondents' witness, Nigel Carling of Enron testified that, in assessing suppliers, "You're really looking at expertise over the last ten years." (Carling, Tr. 4512).

122. In their own documents and in presentations to customers, Respondents draw upon their historical sales achievements to make new sales. In a bid proposal to Louisville Gas & Electric, CB&I touted that it has been "integrally involved with LNG peak shaving facilities **since the 1960's**. The enclosed installation list summarizes the 43 LNG peak shaving facilities and 90 individual LNG tanks designed and constructed by CB&I [on] a lump sum basis." (CX 173 at CBI-PL010403 (emphasis supplied); *see also* CX 207 at CBI-PL 013456-457; CX 150 at CBI-PL 002655, 002661; CX 142 at CBI-00212-HOU). With respect to LIN/LOX tanks, CB&I and PDM tout their experiences in constructing tanks from as far back as 1957. (*See* CX 160 ("CB&I has built the majority of LIN/LOX/LAR tanks in the world, and in total we have designed and erected over 600 cryogenic tanks throughout the world."); *see also* CX 85; CX 145 at PDM-S-001409; CX 154 at CBI-PL002939-70; CX 443; CX 914; CX 1048; CX 1201).

123. In a May 2001 LNG tank sales presentation to Yankee Gas (CX 417 at CBI 026845-HOU), CB&I detailed its relevant LNG tank experience, including the 2000 ENRON, Puerto Rico LNG import terminal (*id*. at CBI 026848-HOU - 849-HOU), the 1999 Pine Needle, North Carolina, peakshaving facility (*id*. at CBI 026850-HOU), the 1997 Memphis Light, Gas and Water LNG peakshaving facility and the 1993 Salley, South Carolina, LNG satellite storage facility (*id*. at CBI 026849-HOU), and other LNG import terminal and peakshaving projects extending from 1969 through 2002. (*Id*. at CBI 026851-HOU - 852-HOU; CX 417 at CBI 026845-026852).

124. Steven Knott, CB&I's vice-president of sales for North American, declared under penalty of perjury, "[I]nformation regarding LNG tank and TVC prices – which are far less common – is far more valuable, because the number of completed jobs is far fewer. Because fewer solid data points exist, the remaining data points become even more valuable, even ones from the mid-1990s. Further, the greater value of LNG and TVC projects increases the value of pricing information for these projects to CB&I." (CX 393 at 6).

125. Respondents assert that the historical market shares are not relevant to the competitive analysis in this case. Giving no weight to historical sales results, Dr. Harris suggested that each firm could be allocated an identical market share. This assumes that, in spite of the historical bidding patterns, each firm Respondents have identified as a potential bidder in each relevant market is equally qualified to secure a contract. (Harris, Tr. 7177-78; *see Merger Guidelines* § 1.41, n.15 ("Where all firms have, on a forward-looking basis, an equal likelihood of securing sales, the [Commission] will assign firms equal shares.")). Dr. Harris concludes from this methodology that the acquisition has resulted in only minor increases in concentration. (Harris, Tr. 7195, 7300, 7302, 7326).

126. There is no evidence to conclude that all of the companies who *may bid* in the future have an equal likelihood of *winning* in head-to-head competition with Respondents. To the contrary,

there is evidence that firms who bid in the past and may bid in the future are not equally qualified. Several of the firms identified by Dr. Harris are the same firms that before the merger lost to Respondents because of their competitive disadvantage vis-a-vis Respondents in the United States. (Harris, Tr. 7211). CCFF 393-571.

127. By failing to consider actual historical sales, Dr. Harris' analysis fails to take into account the substantial direct competition between CB&I and PDM that was eliminated by the merger. (Harris, Tr. 7185-86, 7223, 7233).

128. For all these reasons, the historical sale data provided by Complaint Counsel is the most appropriate method for measuring market shares and market concentration.

B. <u>Market Shares and Concentration in the LNG Market</u>

129. Four LNG import terminals were constructed in the United States since the 1970s, during the energy crisis when gas prices were high and gas supplies questionable. (CX 853 at PDM-HOU011488). PDM constructed two (Lake Charles, Louisiana and Cove Point, Maryland) and CB&I constructed two (Boston, Massachusetts and Savannah, Georgia). (CX 853 at PDM-HOU011488; CX 154 at CBI-PL002958, 002961).

130. There are about 90 LNG peak shaving plants in the United States. (CX 228 at CBI-PL046034). CB&I and PDM have constructed every LNG tank built in the United States since 1975. (CX 125 at PDM-HOU 2017162-7169).

131. [ ]. (Kistenmacher, Tr. 891; [ ], Tr. 714-15, *in camera* (["[F]rom 1965 through '97 or so, the only two companies pretty much across the board that built LNG plants in the United States were PDM and CB&I"]); Cutts, Tr. 2390 (CB&I and PDM "dominated the marketplace significantly and the interpretation by most people would have been that any large cryogenic projects in the United States would have been built by CB&I or PDM.")).

132. 1975 was the last time a firm other than CB&I or PDM built an LNG tank in the United States. (CX 125). Graver, which is now out of business, built the tank in 1975. (CX 125 at PDM-HOU2017165; CX 1546 (ITEQ, Graver's successor, ceased operations in March 2001)).

133. Preload built an LNG tank in the United States in 1971. (CX 125 at PDM-HOU2017164). Preload possesses a "completely concrete" technology that "would be a very costly design and not be a competitive design to the tanks that the other people could build." (Price, Tr. 550; Hall, Tr. 1817). [ ]. ([ ], Tr. 689-691, 693, 724, *in camera*).

134. [ ]. ([ ], Tr.

4683, *in camera*; CX 125; CX 853 at PDM-HOU011458).

135. Other companies attempted to compete during this period but failed to beat CB&I and PDM. TKK and Whessoe both submitted proposals for the Memphis project in 1995 but were substantially higher-priced than CB&I and PDM. CCFF ___. [ ]. (RX 157 at [ ] 02 004, *in camera*). No other firm has won a U.S. LNG project in head-to-head competition against CB&I or PDM.

136. As shown in the following table, nine LNG tank projects were awarded in the United States from 1990 through the time of the acquisition in early 2001.

[As some of the projects are in camera, a table in its entirety should be treated *in camera*]
(CX 1210, *in camera*; CX 824; CX 1212, *in camera*; CX 1645 at 2 (demonstrative); CX 26 at CBI-PL069530, *in camera*; RX 757; Simpson, Tr. 3046, 3052-3055).

137. Dr. Harris acknowledges that prior to the merger, United States LNG tanks were built entirely by CB&I and PDM. (Harris Tr. 7196, 7521-22). According to Dr. Harris, "until roughly 2001 I guess, the competitors in the market, were almost entirely limited to CB&I and PDM." (Harris, Tr. 7220). Based on information at the time of the acquisition CB&I had roughly one chance in two of winning an LNG tank award. (Harris, Tr. 7877).

138. [ ]. (CX 1210, *in camera*; CX 1645 at 2, (demonstrative); Simpson, Tr. 3046, 3052-3054). CB&I won five of these projects and PDM won four. (Simpson, Tr. 3046, 3052-3054).

139. Dr. Simpson testified that the fact that a company does not bid for a project is informative. (Simpson, Tr. 5757). Dr. Simpson testified that he concluded that the reason foreign firms were not bidding for LNG projects prior to CB&I's acquisition of PDM is that the foreign firms believed that they were not competitive with PDM and CB&I. (Simpson, Tr. 5757).

140. Dr. Simpson also testified that the fact that foreign firms did not participate in sole-source negotiations for U.S. LNG tank projects prior to CB&I's acquisition of PDM is also informative. (Simpson, Tr. 5757). Dr. Simpson testified that buyers who sought to buy LNG tanks through sole-source contracts would have approached the foreign firms if they thought that these foreign firms were competitive with CB&I or PDM. (Simpson, Tr. 5757-5758).

141. An analysis of U.S. LNG tank projects awarded between 1990 and the time of the acquisition indicates that CB&I and PDM were the two strongest competitors. (Simpson, Tr. 3050). Dr. Simpson testified that respondents had claimed that seven other companies competed with CB&I and PDM to supply LNG tanks in the U.S. (Simpson, Tr. 3047, 5753). If seven companies competed on an equal footing with CB&I and PDM, then the probability that CB&I and PDM would have won all nine of the U.S. LNG projects awarded between 1990 and the time of the acquisition is 0.0000013 (2/9 X 2/9 X 2/9 X 2/9 X 2/9 X 2/9 X 2/9 X 2/9 X 2/9). (Simpson, Tr. 3047-3048 (referencing CX 1645 at 3, (demonstrative)). If one other firm competed on an equal footing with CB&I and PDM, the probability that CB&I and PDM would have won all nine of the U.S. LNG tank projects awarded between 1990 and the time of the acquisition is 2.6 percent (2/3 X 2/3 X 2/3 X 2/3 X 2/3 X 2/3 X 2/3 X 2/3 X 2/3). (Simpson, Tr. 3048 (referencing CX 1645 at 3, (demonstrative)). Given these results, an environment in which other firms competed on an equal footing with CB&I and PDM is extremely unlikely to produce the observation that CB&I and PDM won all nine awards. (Simpson, Tr. 3048). Thus, the history of LNG tank awards in the United States reflects the fact that CB&I and PDM were each other's strongest competitors and that foreign companies did not compete on an equal footing with CB&I and PDM. (Simpson, Tr. 3050).

142. Dr. Simpson noted that the *Merger Guidelines* indicate that a firm's market share should reflect that firm's future competitive significance. (Simpson, Tr. 3050). Dr. Harris acknowledged that the strength of competitors going forward should be considered in examining the acquisition. (Harris, Tr. 7229). Dr. Simpson concluded that CB&I and PDM were far and away the two strongest competitors in the market for LNG tanks in the U.S. (Simpson, Tr. 3050). Dr. Simpson testified that Whessoe, Technigaz, and TKK were not a competitive factor in the U.S. market for LNG tanks at the time of the acquisition. (Simpson, Tr. 3051). Dr. Simpson further testified that Whessoe, Technigaz, and TKK would need to make a significant investment for more than a year in order to acquire the tangible and intangible assets necessary to become competitive with CB&I and PDM. (Simpson, Tr. 3051-3052).

143. Dr. Simpson testified that one did not need detailed cost information to determine whether foreign firms would have higher costs than CB&I in building LNG tanks in the U.S. (Simpson, Tr. 5765). Dr. Simpson noted that one could use other sources of information, such as company documents, statements to investors, and a history of past awards, to determine whether foreign firms had higher costs than CB&I in building LNG tanks in the U.S. (Simpson, Tr. 5765).

144. Dr. Simpson then testified that CB&I and PDM would each have a 50-percent market share if they were treated as equally strong competitors. (Simpson, Tr. 3050). Dr. Simpson testified that CB&I and PDM would have similar market shares if they were assigned market shares based on

the value of their actual sales of LNG projects between 1990 and the time of the acquisition. (Simpson, Tr. 3050-51).

145. If CB&I and PDM are each assigned a 50-percent market share, then CB&I's acquisition of PDM increased the HHI by 5000 from a pre-merger HHI of 5000 to a post-merger HHI of 10000. (Simpson, Tr. 3055 (referencing CX 1646)).

146. As shown in the table below, if CB&I and PDM are assigned market shares based on the LNG tank awards between 1990 and the time of the acquisition, the effect of the acquisition on market concentration is similar irrespective of whether concentration is measured based on the number of awards or the dollar value of the awards and irrespective whether cancelled projects are included in or excluded from the calculation. (*See* Simpson, Tr. 3055-3058 (referencing CX 1645, (demonstrative)).

[As some of the projects are in camera, above table in its entirety should be treated *in camera*]

147. Of the LNG tank projects awarded before the acquisition, CB&I accounted for [ ] of LNG tank projects awarded, and [ ] of projects excluding projects cancelled following award. PDM accounted for [ ] of LNG tank projects awarded, and [ ] excluding cancelled projects. Based on dollar value of projects, CB&I accounted for [ ] of project awards and [ ] excluding cancelled projects, and PDM accounted for [ ] of awards and [ ] excluding cancelled projects.

148. By any measure, the combined share of the two companies is 100 percent and the post acquisition HHI is 10000. (Simpson, Tr. 3055 (referencing CX 1646)).

149. Dr. Harris erroneously argues that market shares should be measured based on the post-acquisition period. In using the HHI to predict the effects of the acquisition it is appropriate to assign CB&I and PDM shares based on their future competitiveness. When CB&I and PDM merged their combined share was 100 percent. (Simpson, Tr. 3711). Exercise of market power by the merged firm, following the acquisition, will lead to an erosion of market share. Dr. Harris confuses this effect with analysis of market concentration. Dr. Simpson explains that "if you have a monopolist and they have market power, they will increase price. When they increase price, other firms that previously were not able to make sales begin to make sales. So if you were to look after the acquisition and if the monopolist has increased price and has lost sales to other customers as a result of that price increase, you would see that the HHI would fall from the 10,000 level that we computed before the acquisition to some level under 10,000." (Simpson, Tr. 3711).

150. Under the *Merger Guidelines*, the CB&I/PDM merger has resulted in a substantial increase in concentration in an already highly concentrated LNG market. The HHI level raises the presumption that the merger will likely create or enhance market power or facilitate its exercise by CB&I. (*Merger Guidelines* § 1.51(c)).

C. Market Shares and Concentration in the LIN/LOX Market

151. The table below shows LIN/LOX tank awards in the United States during the period 1990 to the time of the acquisition:

[As some of the projects are in camera, above table in its entirety should be treated *in camera*]

(CX 26; CX 85; CX 155; CX 183; CX 260; CX 282; CX 397, *in camera*; CX 755; CX 1025; CX 1170; CX 1210 at 5-6, *in camera*; CX 1212 at 6, *in camera*; CX 1321, *in camera*; CX 1458; CX 1663 (demonstrative); CX 1664 (demonstrative); CX 1665 (demonstrative) *in camera*; Simpson, Tr. 3422, 3429, 3430; Cutts, Tr. 2451 (AT&V built two tanks for BOC); Newmeister, Tr. 1587 (Matrix has won [ ] LIN/LOX projects); JX 37 at Exh. 3 (Newmeister, Dep.)).

152. As shown in the above table, during the period from 1990 to the time of the acquisition, 83 LIN/LOX projects were awarded comprising 109 tanks with a total value of [ ] million.

153. As further shown in the above table, PDM won [ ] projects ([ ] of the total), including [ ] tanks ([ ] of the total) with total revenues of $41.8 million ([ ] of the total).

154. CB&I won [ ] projects ([ ] of the total) encompassing [ ] tanks ([ ] of the total) with a total value of $36.3 million ([ ] of the total).

155. [ ]. (CX 155; CX 183; CX 282; CX 755; CX 1321, *in camera*). Graver went out of business, in

2001, and is no longer a competitor in the LIN/LOX market. (CX 1546; Hilgar, Tr. 1543). Graver's assets were sold at auction. (Harris, Tr. 7312, 7313).

156. Matrix won [ ] projects ([ ] of the total) including [ ] tanks ([ ] of the total) with a total value of [ ] million ([ ] of the total). (RX 290 at CBI-046596-NEW; Newmeister, Tr. 1587; JX 37 at Exh. 3 (Newmeister, Dep.)). In August 2000, Matrix sold Brown Steel and its fabrication facility. (Newmeister, Tr. 1589-90). Matrix's sale of Brown Steel competitively disadvantages Matrix in the LIN/LOX tank market. (Newmeister, Tr. 1590-91). Matrix has not won a LIN/LOX award since it sold Brown Steel.

157. AT&V won one project ([ ] of the total) consisting of [ ] tanks ([ ] of the total) with a value of [ ] million ([ ] of the total). (Cutts, Tr. 2451; RX 290 at CBI-046596-NEW).

158. After attempting without success to compete for a LIN/LOX project, BSL has exited the U.S. LIN/LOX market. (Hilgar, Tr. 1378-1380). No foreign company has ever built a LIN/LOX tank in the United States. (Hilgar, Tr. 1385).

159. As further shown in the above table, CB&I and PDM have a combined share of [ ] of the value of LIN/LOX awards, since 1990, a combined share of [ ] of the number of projects awarded and [ ] of the number of LIN/LOX tanks. Graver has a [ ] market share, Matrix has a [ ] market share, and AT&V has a [ ] market share (Simpson, Tr. 3430).

160. As further shown in the above table, CB&I's acquisition of PDM increased concentration substantially in the LIN/LOX market. The acquisition increased the HHI by 2635 points to a level of 5845 based on the value of projects awarded, and increased the HHI by 2264 to a level of 5602 based on the number of projects awarded. (Simpson, Tr. 3443, 3343-3344 (referencing CX 1665 (demonstrative)).

161. Under the *Merger Guidelines*, the CBI/PDM merger has resulted in a substantial increase in concentration in an already highly concentrated LIN/LOX market. The HHI level raises the presumption that the merger will likely create or enhance market power or facilitate its exercise by CBI. *Merger Guidelines* § 1.51(c).

162. Dr. Simpson testified: [T]he acquisition combined the two strongest builders of LIN/LOX/LAR tanks in the U.S., and I think it enables them to increase price." (Simpson, Tr. 3444; *see* Simpson, Tr. 3450 (Dr. Simpson established that "CB&I and PDM EC were the strongest competitors in this marketplace prior to the acquisition)). Dr. Simpson noted that a merger of the two strongest suppliers would enable the merged firm to increase price up until the point where other less-strong suppliers begin to constrain it. (Simpson, Tr. 3451). Dr. Simpson also testified that a merger that reduces the number of sellers of LIN/LOX tanks from

four to three or from three to two would be likely to result in an increase in price. (Simpson, Tr. 3451). Dr. Simpson further testified that CBI's acquisition of PDM will enable CB&I to increase price by 5 percent in the market for LIN/LOX tanks over the next five years. (Simpson, Tr. 3828, 3869).

163. Because Graver has exited the market, the market shares understate the competitive effects of the acquisition. *Merger Guidelines* § 1.52.

164. The following table shows market shares and market concentration excluding sales by Graver:

[As some of the projects are *in camera*, above table in its entirety should be treated *in camera*]

165. As shown in the above table, excluding Graver, PDM won [ ] of the number of project awards, [ ] of the tanks, and [ ] of the value of LIN/LOX projects awarded, CB&I won [ ] of the number of project awards, [ ] of the tanks, and [ ] of the value of LIN/LOX projects awarded.

166. As further shown in the above table, excluding Graver, CB&I and PDM have a combined share of [ ] of the value of LIN/LOX awards, [ ] of the number of projects awarded and [ ] of the number of LIN/LOX tanks.

167. When Graver's exit from the market is taken into account, CBI's acquisition of PDM increased the HHI by [ ] points to a level of [ ] based on the

value of projects awarded, increased the HHI by [ ] to a level of [ ] based on the number of projects awarded, and increased the HHI by [ ] to a level of [ ] based on the number of tanks.

168. The LIN/LOX market has remained highly concentrated following the acquisition, with CB&I and AT&V accounting for all five LIN/LOX tank awards during this period. (CX 1758 (demonstrative); Harris, Tr. 7306-7308). Dr. Harris's compilation of the dollar value of LIN/LOX tank awards, during the period 2001 through 2002, shows that concentration as measured by the HHI is [ ]. (CX 1758 (demonstrative); Harris, Tr. 7825-7826).

169. Dr. Harris acknowledged that if PDM had not been acquired by CB&I it might have won some of these LIN/LOX tank awards. (Harris, Tr. 7826). Dr. Harris acknowledged that one reason Air Liquide and BOC turned to AT&V was because they thought they needed some alternative to CB&I. (Harris, Tr. 7827-28). Dr. Harris credited to AT&V the award of Air Liquide's Freeport, Texas, LIN/LOX project, even though after the award, Air Liquide requested CB&I to replace AT&V on the project. (Harris, Tr. 7830; Scorsone, Tr. 5036).

170. AT&V has not replaced the competition that existed between CB&I and PDM. (Simpson, Tr. 3452).

D. Market Shares and Concentration in the LPG Market

171. Analysis of LPG tanks sold between 1990 and early 2001 indicates that CB&I and PDM were the two strongest suppliers of LPG tanks in the United States. (Simpson, Tr. 3363, 3400, 3402-3).

172. CB&I and PDM have built the great majority of LPG tanks constructed in the United States. As shown in the table below, of the fourteen LPG tanks built in the United States between 1990 and 2001, CB&I built [ ] and PDM built [ ]:

[As some of the projects are *in camera*, above table in its entirety should be treated *in camera*]

(CX 486; CX 824; CX 1210, *in camera*; CX 1212 at 7, *in camera*; CX 397, *in camera*; CX 1657 (demonstrative), *in camera*; RX 757; Simpson, Tr. 3368, 3372-3375).

173. As shown in the above table, twelve field-erected LPG projects were awarded between 1990 and early 2001 in the United States. (Simpson, Tr. 3399 (referencing CX 1661, demonstrative)). [

] . (CX 1660 (demonstrative); CX 486; RX 678; CX 397 at 1, *in camera*). No foreign firms built an LPG tank in the United States during this period.

174. Dr. Harris acknowledged that CB&I and its two acquisitions, PDM and Morse, account for all but [ ] of the sales of LPG tanks in the United States from 1990 to the time of the acquisition. (Harris, Tr. 7522).

175. Dr. Simpson calculated that the probability of observing CB&I and PDM win [ ] of twelve projects if some other firm competed on an equal footing with CB&I and PDM is 18 percent. (Simpson, Tr. 3399 (referencing CX 1661, demonstrative)).

176. The value of the LPG tank sold by [ ] was a small fraction of the value of the other LPG tanks sold during this period. (Simpson, Tr. 3395 (referencing CX 1658, demonstrative)). Dr. Simpson testified that if this project is dropped from the sample, then CB&I won [ ] LPG projects, PDM won [ ] LPG projects, and Morse Tank won [ ]. (Simpson, Tr. 3399). Dr. Simpson testified that the probability of observing CB&I and PDM win [ ] projects, if some other firm competed on an equal footing with CB&I and PDM, is 7.5 percent. (Simpson, Tr. 3400).

177. Dr. Simpson testified that an analysis of LPG tanks and ammonia tanks sold between 1990 and early 2001 provides further evidence that CB&I and PDM were the two strongest suppliers of LPG tanks in the United States. (Simpson, Tr. 3400). Dr. Simpson testified that the skill set required to build field-erected ammonia tanks is very similar to the skill set required to build field-erected LPG tanks (Simpson, Tr. 3398 (citing CX 1615 and interviews with industry participants)). Nineteen projects for field-erected LPG tanks and field-erected ammonia tanks were awarded between 1990 and early 2001 in the United States. (Simpson, Tr. 3400 (referencing CX 1660 (demonstrative))). CB&I won [ ] of these projects, PDM won [ ] of these projects, Morse won [ ] of these projects, and AT&V won [ ] of these projects. (Simpson, Tr. 3400 (referencing CX 1661 (demonstrative))). Dr. Simpson testified that the probability of observing CB&I and PDM win [ ] of nineteen projects if some other firm competed on an equal footing with CB&I and PDM is only 2.4 percent. (Simpson, Tr. 3400 (referencing CX 1661, demonstrative)).

178. Dr. Simpson concluded, based on documents, opinions of customers, and on his probability analysis, that CB&I and PDM were the two strongest competitors in the U.S. market for LPG tanks. (Simpson, Tr. 3402-3).

179. Dr. Simpson testified that Morse Tank had a large advantage in competing for a project to build an LPG tank for Texaco in Ferndale, Washington in 1994. Dr. Simpson noted that this LPG tank project was very close to Morse Tank's headquarters and fabrication plant and very far from CBI's headquarters and fabrication plant. (Simpson, Tr. 3386-8 (citing CX 1482 and referring to CX 1195 for proposition that location provides a competitive advantage)). Dr. Simpson noted that a later PDM document describing competitors in the U.S. LPG tank market did not list Morse as a competitor. (Simpson, Tr. 3389 (citing CX 94)).

180. As shown in the following table, in the U.S. market for LPG tanks, between 1990 and early 2001, PDM had sales of [ ], CB&I had sales of [ ], Morse Tank had sales of [ ], and AT&V had sales of [ ]. (Simpson, Tr. 3403-04 (referencing CX 1662, demonstrative)). Based on these sales, PDM had a [ ] percent market share, CB&I had a [ ] percent market share, Morse Tank had an [ ] percent market share, and AT&V had a [ ] percent market share. (Simpson, Tr. 3404).

[As some of the projects are *in camera*, above table in its entirety should be treated *in camera*]

181. CB&I's acquisition of PDM increased LPG market concentration, as measured by the HHI, by [ ] points to a level of [ ]. The combined market share of the merged company is [ ] percent. (Simpson, Tr. 3404-3405).

182. Under the *Merger Guidelines*, the CB&I/PDM merger has resulted in a substantial increase in an already highly concentrated LPG market. The HHI level raises the presumption that the merger will likely create or enhance market power or facilitate its exercise by CB&I. *Merger Guidelines* § 1.51(c).

183. Shortly after the complaint issued in this matter, CB&I acquired Morse, eliminating the firm that had accounted for the next most substantial share of LPG sales prior to the acquisition. (Maw, Tr. 6545). Because CB&I has acquired Morse Tank, the market shares understate the competitive effects of the acquisition. *Merger Guidelines* § 1.52.

184. The Morse acquisition further increased CB&I's share of LPG sales to [ ], leaving AT&V as the only competition to CB&I in the market. CB&I's acquisition of Morse further increased concentration in LPG, as measured by the HHI, by an additional [ ] points to a level of [ ]. (Simpson, Tr. 3404).

185. Calculations by Respondents' expert show a similar result. Dr. Harris presented a demonstrative exhibit depicting LPG sales in the United States from 1992 through 2002. (Harris, Tr. 7282-7284 (referencing RX 947)). Dr. Harris acknowledged that

his demonstrative exhibit regarding sales in the LPG market is essentially the same exhibit used by Dr. Simpson (Harris, Tr. 7284-7285).

186. The figures presented by Dr. Harris confirm that the United States LPG tank market is highly concentrated and that the acquisition of PDM substantially increased market concentration. Of the eight LPG jobs during this period, [ ] were performed by CB&I, [ ] by PDM, [ ] by Morse, and [ ] by AT&V. (Harris, Tr. 7285). The one LPG tank constructed by AT&V was only [ ], much smaller than historical LPG tanks constructed in the United States. (Harris, Tr. 7281).

187. Using his figures for the dollar value of LPG projects sold in the United States from 1992 through 2002, Dr. Harris determined that CB&I accounted for [ ], PDM accounted for [ ], Morse accounted for [ ], and AT&V accounted for [ ]. (CX 1757 (demonstrative); Harris, Tr. 7732-7734). According to Dr. Harris's figures, CB&I and PDM together account for [ ], and together with Morse account for roughly [ ] of the dollar value of LPG tank projects sold in the United States during the period 1992 through 2002. (CX 1757 (demonstrative); Harris, Tr. 7732-7734, 7773-7774; *see* Harris, Tr. 7770 ("looking at LPG projects sold in the United States 1992 through 2002, I think PDM plus CBI plus Morse accounted for roughly 99 percent of the dollar value during that period.")).

188. Using Dr. Harris's dollar sales figures, CB&I's acquisition of PDM increased the HHI by [ ] points to a level of [ ]. (CX 1757 (demonstrative); Harris Tr. 7775-7776, 7759-7762, 7765). CB&I's subsequent acquisition of Morse further increased the HHI by [ ] points to a level of [ ]. (CX 1757 (demonstrative); *see* Harris, Tr. 7772-7773).

E. Market Shares and Concentration in the TVC Market

189. [ ]. (Simpson, Tr. 3489 (citing CX 272; CX 857, *in camera*; CX 264; CX 1040 at PDM-HOU 010889; CX 94 at PDM-HOU 017583)). Since 1960, the only companies that have built TVCs are PDM and CB&I. (Scully, Tr. 1110, 1115 (referencing RX 178); Higgins, Tr. 1267; Newmeister, Tr. 1564). PDM and CB&I are the only TVC suppliers known to customers. (Scully, Tr. 1110; Neary, Tr. 1430 (referencing RX 178); Higgins, Tr. 1267 (referencing RX 178); Gill, Tr. 204-205).

190. Since 1990, PDM built five TVCs, several of which were awarded prior to 1990, and CB&I has been awarded [ ]. (CX 849 at 117-118 (Steimer, IHT) (referencing CX 861 at PDM-HOU00036163); CX 827 at 5; Thompson, Tr. 2061-2062; Scully, Tr. 1169; CX 926 at CBI 007212-HOU).

191. By any measure the TVC market is highly concentrated and the acquisition greatly increased the level of market concentration. Dr. Simpson testified that he would assign a 50-percent market share to CB&I and a 50-percent market share to PDM based on

the opinions of market participants, documents, and the history of awarded projects. (Simpson, Tr. 3492-3, 3495-6). Based on these market shares, the acquisition increased market concentration, as measured by the HHI, by 5000 points to a level of 10,000.
(Simpson, Tr. 3494).

192. As shown in the following table, if CB&I and PDM are assigned market shares based on the dollar value of awarded sales since 1990, CB&I has a [ ] percent market share, and PDM has a [ ] percent market share. (Simpson, Tr. 3493-4).

(CX 1210 at 7, *in camera*; CX 567 at CBI 007139-HOU)

193. As shown in the above table, based on the dollar value of TVC awards since 1990, CB&I and PDM have a combined share of 100%, and the acquisition increases market concentration, as measured by the HHI, by [ ] points to a level of 10,000. (Simpson, Tr. 3494).

194. Under the *Merger Guidelines*, the CB&I/PDM merger has resulted in a substantial increase in concentration in an already highly concentrated TVC market. The HHI level raises the presumption that the merger will likely create or enhance market power or facilitate its exercise by CB&I. *Merger Guidelines* § 1.51(c).

195. Based on the experiences of TVC customers, Dr. Simpson concluded that CB&I's acquisition of PDM would lead to higher prices in the market for TVCs. (Simpson, Tr. 3501).

VI.

THE MERGER WILL LIKELY LESSEN COMPETITION BECAUSE IT ELIMINATES PDM AS CB&I'S CLOSEST COMPETITOR AND OTHER FIRMS CANNOT EFFECTIVELY REPLACE PDM

196. Respondents' high market shares in each of the relevant markets demonstrates that the two firms were the first and second best competitive choices for customers.

197. In addition to market share evidence, the record contains business documents, testimony and actual competitive bidding situations in which CB&I and PDM were the closest competitors, CCFF 204-251, and this vigorous head-to-head competition resulted in lower prices and margins CCFF 249-291.

198. Sellers of LNG, LPG and LIN/LOX tanks and TVCs compete on price, quality, reputation, safety record and timeliness of completion. (CX 1033 at 7; Simpson, Tr. 3037). Prior to the merger, Respondents were far and away the two strongest competitors in terms of offering buyers the best combination of price, quality, reputation, safety record and timeliness of completion. (Simpson, Tr. 3050, 3094).

199. CB&I's acquisition of PDM reduced competition by eliminating the competition between these firms and making it more likely that CB&I could exercise market power. Since PDM was CB&I's closest competitor, it was also the firm to which CB&I would most likely lose sales to when it raised price. Thus, by eliminating competition between CB&I and PDM in the relevant markets, the merger makes it less likely that CB&I would lose sales after increasing prices. *Merger Guidelines* § 2.21 ("The price rise will be greater the closer substitutes are the products of the merging firms, *i.e.*, the more the buyers of one product consider the other product to be their next choice"); *id.* § 2.21, n.21 ("A merger involving the first and second lowest-cost sellers could cause prices to rise to the constraining level of the next lowest-cost seller").

200. Entry by new firms into the relevant markets or expansion by existing firms may deter or counteract the likely anticompetitive effects of a merger if such entry or expansion will be timely (*i.e.*, within two years of the merger), likely and sufficient. *Merger Guidelines* § 3.0. This entry or expansion must duplicate the pre-merger competition provided by PDM against CB&I.

201. In the two years since the merger, no firm has replaced PDM as an effective price restraint on CB&I. CCFF 292-571. To the contrary, CB&I has used its competitive advantages, particularly the significant price gap between CB&I and its competitors, to continue building its market leadership. CCFF 568-592.

202. Respondents cite numerous domestic and foreign firms that they claim will replace PDM as a price restraint on CB&I. These are not "new" entrants, but rather the same firms that historically attempted to compete against Respondents in the relevant markets and failed. CCFF

437-571. Moreover, Respondents' ordinary course of business documents, including those prepared after the merger, fail to identify any other firm as a competitive threat to the same extent, consistency and frequency as CB&I and PDM.

203. These "new" entrants were, and remain, distant competitors, unable to close the competitive gap between them and CB&I. There are numerous marketplace conditions that explain why foreign and domestic firms cannot replace PDM. CCFF 292-420. Respondents and industry participants know this, (CCFF 393-592), which is why Respondents' merger planning documents (CCFF 730-749) and the testimony of industry participants (CCFF 711-727) consistently predict that the merger will likely lead to higher prices.

A. Respondents Viewed Each Other as Their Closest Competitor

204. PDM was CB&I's "main competitor" in the relevant product markets, and CB&I's ordinary course of business documents reflect this fact. (CX 163 at CBI-PL006679; *see also, e.g.*, CX 186 at CBI-PL012446 ("two horse race" between CB&I and PDM/Air Products); CX 227 at CBI-PL045102 ("Principal US Competitor"); Glenn, Tr. 4332 ("principal U.S. competitor for services")).

205. Other descriptions of PDM include the "biggest competitor" (CX 627 at CBI-H006780), and a "formidable competitor" (CX 216 at CBI-PL033886; *see also* Glenn, Tr. 4263).

206. [ ]. (CX 76 at PDM-C 1006121; *see also* CX 660 at PDM-HOU005014 (since 1996, CB&I is PDM's "most aggressive competitor in increasing market share; Scorsone, Tr. 5174; CX 857 at PDM-HOU019513 ([ ]); *See* CX 218 at CBI PL034531 (PDM is "CBI's largest and most mentioned tank competitor")).

207. At other times, CB&I was described as PDM's "only competitor" in the relevant markets. (CX 660 at PDM-HOU005016; *see also* Scorsone. Tr. 5156-57, 5177, 5183; CX 94 at PDM-HOU017580, 017582, 017583)

208. In September 1998, a PDM EC "President's report" to the Board of Directors portrayed CB&I as "PDM EC's major competitor in almost all of the significant markets PDM EC serves... CB&I and PDM EC are often the only competitors for [] cryogenic storage contracts." (CX 68 at PDM-C 1002632; *see also* Scorsone, Tr. 5153-4).

209. A later "President's report" to PDM's Board in November 1998 states that "CBI remains the major competitor to PDM EC." (CX 67 at PDM-C 1002625; see also CX 106 at PDM-HOU004990; CX 116 at PDM-HOU019181 ("CBI is PDM's major competitor for both [LNG] storage tanks and turnkey facilities in the US"); CX 116 at PDM-HOU019176 ("CBI is PDM's competition for LNG tanks alone. Others have bid tanks in recent years, such as Preload

and Graver, but are not now competitive."); CX 119 at PDM-HOU019508).

210. In 1999, PDM's Board was advised that CB&I is PDM EC's "[w]orldwide competitor on all projects," and that PDM EC's objective is to "Be the largest and most profitable storage tank and related systems contractor in the U.S. and Latin America - beat CBI!" (CX 74 at PDM-C 1005928, PDM-C 1005940). PDM EC's president, Mr. Scorsone used the idea of "beating CB&I" as a "rallying" cry for PDM to "focus on." (Scorsone, Tr. 5166, 5167-68). The same document attributes CB&I with the highest and PDM with the second highest market shares for the markets PDM served. (CX 74 at PDM-C 1005933).

211. Tanner & Company, who was retained to locate buyers for PDM in 2000, described CB&I and PDM as the "two main players" in the relevant markets, who "bid against each other a lot." (CX 75 at PDM-C 1006089; *see* RX 26 at PDM-C 1004310 (August 2000 Tanner & Company sales presentation characterizing competition between CB&I and PDM as "stiff")).

1. *Respondents Were the Closest Competitors in the LNG Market*

212. In July 1998, PDM's Carroll Davis wrote to his colleague, Steve Crain, and others that, for the Atlanta Gas Light/Southern Natural Gas LNG project in Etowah, GA, "the real competition [was] between CB&I and PDM." (CX 161 at CBI-PL006113).

213. An LNG/Aerospace marketing presentation, dated November 2000, states that CB&I was "PDM's competition for LNG tanks alone." (CX 116 at PDM-HOU019176).

214. PDM's 2000 Business Plan states that "CBI is PDM EC's domestic competition for LNG tanks." (CX 94 at PDM-HOU017580).

215. PDM characterized CB&I as "PDM EC's only competitor on domestic cryogenic, LNG, LPG, Ammonia and thermal vacuum projects." (CX 107 at PDM-HOU005016).

216. In a 1997 PDM Customer Briefing, PDM determined that with "*only two capable LNG tank builders in the U.S. (PDM and CBI)* our teaming with Air Products has essentially put Lotepro and other liquefaction design companies out of the LNG business in the domestic U.S." (CX 113 at PDM-HOU014838 (emphasis added)).

217. Mr. Scorsone confirmed that PDM and CB&I competed fiercely against one another for LNG tanks. (Scorsone, Tr. 5173).

2. *Respondents Were the Closest Competitors in the LPG Market*

218. Respondents' business documents refer to each other as a "formidable" competitor (CX 216 at CBI-PL-033886) or "major" competitor in the LPG market (CX 116 at

PDM-HOU019181).

219. PDM believed CB&I was its "only competition on tanks over 100,000 bbl [barrel]." (CX 303 at CBI/PDM-H 4001285).

220. Mr. Scorsone testified that CB&I was "PDM EC's major competitor" for LPG tanks. (Scorsone, Tr. 5157, 5174; CX 94 at PDM-HOU017580).

3. *Respondents Were the Closest Competitors in the TVC Market*

221. CB&I's business and strategic documents refer to PDM as CB&I's "only competitor" for TVC projects in the United States. (CX 212 at CBI-PL031721; *see also* CX 264 at CBI-H006780 ("only real competitor"); CX 265 at CBI-H007057 ("single USA competitor").

222. [ ]. (CX 216 at CBI-PL033886, *in camera*; *see also* CX 212 at CBI-PL031721 (PDM's strategic alliance was "the only competition for the thermal vacuum systems market")), [ ]. (CX 1040 at PDM-HOU 010889).

223. A 1998 CB&I e-mail discussing a TVC project for Orbital Sciences discussed a bidding strategy that focused upon beating PDM, and no one else. (CX 272 at CBI-H010889-90).

224. A 1997 memo to a senior CB&I executive notes reaching the objective of maneuvering CB&I "into a position which could provide CB&I significant advantages over Pitt Des Moines." (CX 261 at CBI-H004029).

225. [ ] (CX 242 at CBI-PL 4003341, *in camera*).

226. In its 2000 Business Plan, PDM stated that "The [EC] Division's competition is CBI." (CX 94 at PDM-HOU 017583; *see also* CX 859 at PDM-HOU017583; CX 857 at PDM-HOU019511).

4. *Respondents Were Major Competitors in the LIN/LOX Market*

227. PDM and CB&I were major competitors in the LIN/LOX market. (CX 183 at CBI-PL012437; see CX 660 at PDM-HOU 005016; CX 658 at PDM-HOU 1002551).

228. In a March 1996 memo to Mr. Scorsone, PDM staff anticipated that CB&I, by separating from its former parent, Praxair, would "become a major competitor in [the LIN/LOX]

market." (CX 1040 at PDM-HOU010888). Between 1990 and 1997, PDM identified at least four tanks that were lost due to competition from CB&I. (CX 1049 at PDM-HOU11767-70).

229. In a July 1997 competitor report to Luke Scorsone, PDM's Bill Weber noted that "[s]ince last fall, CB&I has been the most aggressive competitor in increasing market share." (CX 108 at PDM-HOU005018).

230. PDM was the lower price alternative to CB&I in the LIN/LOX market. According to an October 2000 e-mail from Bob Lewis, then CB&I's Vice President of Corporate Business Development, PDM had "[a] tendency to bid much lower than the market leaving a lot of money on the table." (CX 632 at CBI-PL 4000160). In April 1997, Rich Kooy compared CB&I and PDM's LIN/LOX prices and recognized that "[i]n North America we [CB&I] could still be very handily undercut (by as much as 10%) by PDM if they wanted to work at a lower price level." (CX 178 at CBI-PL011835).

B. Industry Members View Respondents as the Closest Competitors

1. *LNG Industry Members*

231. Eckhard Blaumueller, former Director of Pipelines and Peaking Services for People's Energy, testified that "there were only two [suppliers] who had U.S. experience, and those were the parties that we were talking to, Chicago Bridge & Iron and PDM." (Blaumueller, Tr. 302; *see also* Tr. 307-09).

232. Robert Davis, Director of HYCO Services for Air Products, testified that "virtually all, with just few exceptions, of the LNG tanks in this country had been built by CB&I and PDM." (Davis, Tr. 3192-3).

233. James Clay Hall, Chief LNG Project Engineer for Memphis Light, Gas & Water, viewed CB&I as the "industry leader" and PDM was "certainly a close second." (Hall, Tr. 1801). Together, CB&I and PDM provided "very competitive" supply options. (Hall, Tr. 1804).

234. John Newmeister, Vice President of Marketing and Business Development at Matrix Services, Inc., explained that historically the suppliers of LNG tanks in the U.S. were "CB&I, PDM and possibly Graver," but with Graver's exit and CB&I's acquisition of PDM, "the list of qualified tank suppliers decreased to one." (Newmeister, Tr. 2166).

235. Brian Price, Vice President of LNG Technology for Black & Veatch, who competed against CB&I and PDM for the Memphis LNG project, saw first-hand that "the two competitors with the lowest prices were CB&I and PDM." (Price, Tr. 558).

2. *LPG Industry Members*

236. Mr. Newmeister of Matrix had no knowledge of any firm competing for an LPG project in the United States other than CB&I and PDM. (Newmeister, Tr. 1614, 2166).

237. Amy Warren, Contracts Administrator for Fluor, Inc., testified that for Fluor's 2000 LPG project (Sea-3), the only competitors available were PDM and CB&I. (Warren, Tr. 2307-8).

3. *LIN/LOX Industry Members*

238. William Cutts, president of American Tank & Vessel ("AT&V") agreed that, prior to the merger of CB&I and PDM, customers preferred PDM or CB&I for their LIN/LOX tank projects, "almost exclusively [desiring] one or the other or pit[ting] the two against the other." (Cutts, Tr. 2390).

239. Chung Fan, Proposal Manager for Linde BOC Process Plants, testified that before the merger, Linde typically purchased LIN/LOX tanks from PDM, but today CB&I is "the only game in town." (Fan, Tr. 1023, 1026-1027).

240. Cleve Fontenot, former Vice President of Procurement for Air Liquide Process and Construction, testified that CB&I and PDM were the two most qualified LIN/LOX/LAR tank suppliers. Air Liquide's bid slate included, "CBI, PDM and a little bit lower would be Matrix." (Fontenot, Tr. 2021-2). However, Air Liquide "didn't feel as comfortable" with Matrix because the "number of references they had weren't nearly what the other two suppliers [CB&I and PDM] had." (Fontenot, Tr. 2022).

241. [

] ([ ], Tr. 1988, *in camera*; CX 136 at CBI 014195-HOU; CX 289 at CBI/PDM-H4000815).

242. Dr. Hans Kistenmacher, Vice President of Marketing and Sales for Linde BOC Process Plants, LLC, testified that the merger has "reduced the number of vendors, experienced vendors from prior to Graver going out of business, we had three experienced, with PDM we had two, and now we have one." (Kistenmacher, Tr. 876).

4. *TVC Industry Members*

243. John Gill, owner of Howard Fabrication, testified that prior to the acquisition, "before Pitt-Des Moines was taken off the street as a competitor [for TVCs]," "PDM was either number one or number two," and CB&I was, "either number one or number two." (Gill, Tr. 204-205).

244. Kent Higgins, President of Process Systems International, testified that "PDM and

CBI" were the only firms that had the capability to construct TVCs. (Higgins, Tr. 1267).

245. Patrick Neary, Manger of the Environmental Test Organization, testified that Respondents were "the two large field-erected manufacturers" of TVCs. (Neary, Tr. 1430).

246. Mr. Newmeister of Matrix testified that Respondents were the only two firms who have competed in the TVC market. (Newmeister, Tr. 1564).

247. [ ], Product Manufacturing Factory Planning Manager for [ ], testified that Respondents were "the lowest risk and best candidates for success." ([ ], Tr. 1899, 1900). Other firms lack the expertise to be as cost-effective and of equal quality as Respondents. ([ ], Tr. 1900-01, *in camera*).

248. Ronald Scully, President of XL Systems, testified that turnkey suppliers for TVCs were limited to Respondents. (Scully, Tr. 1115, 1237).

249. David Thompson, CEO of Spectrum Astro, who has "seen most of the thermal vacuum chambers in the industrial base in the [United States]," testified that Spectrum Astro "tried to do a survey of everybody in the country that we thought would be a qualified bidder, and the two bidders that we found at the time were Chicago Bridge and Iron and PDM." (Thompson, Tr. 2039-41).

250. Based on "[c]ompany documents and the opinions of market participants and the results of previous projects that had been awarded," Dr. Simpson concluded that Respondents are "the only competitors for large field-erected thermal vacuum chambers." (Simpson, Tr. at 3489, 3492). CCFF 189.

C. Competition from PDM Caused CB&I to Lower Prices and Margins

251. [

]. (CX 260 at CBI-H003010-22; CX 227 at CBI-PL045101; CX 282; CX 183; CX 1321 at CBI-PL069518-29, *in camera*).

252. PDM was the "single largest" reason CB&I lost business in the United States; competition from PDM accounted for 33% of CBI's lost business. (Glenn, Tr. 4331; CX 227 at CBI-PL045101; *see also* CX 23 at PDM-C1002566 (PDM has made "significant market share increases against CBI in both domestic and international markets")). In March 2000, CB&I reported that "in the last three months our business lost report is showing PDM taking some 13 jobs from [CBI] at a value of $25 million." (CX 243 at CBI-PL 4004707; *see* CX 660 at PDM-HOU005014 ("Since the fall of 1996, CBI has been the most aggressive competitor in increasing market share")).

253. In March 2000, Steve Knott, CB&I's sales manager for the United States, e-mailed CB&I's sales team to lament that PDM is "'eating our lunch' and we know much of it is because of a CB&I cost problem." (CX 243 at CBI-PL 4004707).

254. Mr. Knott asked, "What is PDM doing that gives them the ability to be this low, this often? I am not 'coming down' on our group for losing to PDM. We all recognize that we can only sell to the market what the market will pay. Given our current system, we are bumping against pricing levels that are dangerously close to our direct cost." (CX 243 at CBI-PL 4004707).

255. Mr. Knott concluded that "We need to come up with a strategy to combat the effort PDM is making to erode our market share." (CX 243 at CBI-PL 4004707).

256. In late 2000, CB&I's Bob Lewis wrote to Steve Crain, President of CB&I's Western Hemisphere Operations that PDM was bidding "much lower than the market, leaving a lot of money on the table." (CX 278 at CBI-H 4004204).

257. Mr. Glenn testified that the competition between CB&I and PDM caused substantial downward pressure on pricing and operating margins. (Glenn, Tr. 4335-6).

258. In April 1997, CB&I stated that, in North America, CB&I could be "very handily undercut (by as much as 10%) by PDM if they wanted to work at a lower price level; the implication being that MG has seen lower LIN/LOX tank pricing from PDM." (CX 178 at CBI-PL011835).

259. In competing for LIN/LOX jobs, CB&I and PDM would in some instances, set prices that would generate "negative margins." (CX 183). In fact, CB&I lost some projects to PDM because of PDM's "very low" pricing levels. (Crain, Tr. 2592; CX 624).

260. No firm exerted a greater consistent competitive threat than PDM across the relevant markets.

D. Competition from CB&I Caused PDM to Lower Prices and Margins

261. In the late 1990s, PDM began increasing its market share against CB&I. A PDM Board presentation states: "CBI is currently a weakened and vulnerable organization and PDM EC is in an excellent position to exploit this weakness and build profitable market share in domestic and select international markets." (CX 68 at PDM-C 1002634).

262. Recognizing CB&I's weakness, PDM began pricing more aggressively to gain business. Handwritten notes from the files of PDM's President reviews the evolution of PDM: (1) 1996-1997 "focused on more profitable assignments;" (2) 1997-1998 accept **"lower gross profit in pursuit of higher revenues;"** and (3) 1998-1999 PDM **"forced to bid at lower margins"** due to **"competition w/CBI"** and **"seeking more revenues."** (CX 76 at PDM-C1006141-3 (emphasis supplied); *see also* CX 390 at PDM-C 1006145 ("97-98 -> aggressive growth market

share - sacrifice margins")).

263. In May 2000, PDM warned its Board of Directors that "CBI has been extremely aggressive on pricing work in North and South America. They have taken certain projects at levels which would be slightly over PDM EC's flat cost." (CX 64 at PDM-C 1002562).

264. Mr. Scorsone confirmed that he told Tanner & Company about the competition between PDM and CB&I and how the companies were "forced to bid at lower margins" because of this competition. (Scorsone, Tr. 5152).

265. There are no PDM documents that discuss any firm as a greater competitive threat than CB&I in the relevant markets.

E. Competition Between Respondents Resulted in Lower Prices for LNG Customers

266. In 1998, [ ] sent requests for bids to CB&I, PDM/Air Products, and a third competitor, Marlborough Enterprises, for a proposed LNG peak shaving facility. According to CB&I, "[ ] considered the Marlborough bid more of a courtesy proposal with the real competition between CB&I and PDM/AP." (CX 161 at CBI-PL006113). [ ]. (CX 161 at CBI-PL006114; CX 1321 at CBI-PL 069518).

267. In 1998, Peoples Gas of Illinois ("Peoples") sought an LNG tank supplier. (Blaumueller, Tr. 306). Peoples received budget pricing from CB&I and PDM, the only two "real" competitors on the project. (CX 237 at CBI-PL067744; *see also* Blaumueller, Tr. 289, 296; CX 601 at CBI-PL067744 (CB&I's assessment of "competition" – only PDM)).

268. Peoples originally solicited budget pricing from CB&I only, who wanted to "keep the inquiry 'off the street,'" but PDM found out and asked to be considered for the project. (CX 259 at CBI-H003002; Blaumueller, Tr. 296).

269. PDM saw an opportunity to win because CBI's "price is probably substantially high due to their perceived sole source situation." (CX 112 at PDM-HOU 011513-4). PDM planned to undercut CB&I by submitting a "very competitive budget price." (*Id.*)

270. CB&I feared that if PDM bid, the process would become "a classic head-to-head price war." (CX 602 at CBI-H003002-03). In order to combat PDM's aggressiveness, CB&I forced PDM to "play in our 'sandbox'" by persuading Peoples to require that the project would require union labor. CB&I believed that the union labor requirement would prevent PDM from submitting a competitive price because PDM relied primarily on non-union labor. (CX 602 at CBI-H003002-3).

271. Due to extraneous business decisions, Peoples did not complete the project. (Blaumueller, Tr. 296).

272. Another example of head-to-head competition between Respondents that resulted in approximately [ ] lower prices is the Cove Point project. CCFF 785.

F. Competition Between Respondents Resulted in Lower Prices for LPG Customers

273. In 1998, Sea-3 requested Fluor to secure bids for LPG tanks to be constructed in Tampa, Florida. (Warren, Tr. 2275, 2303). Fluor obtained bids only from CB&I and PDM. (*Id.* at 2281, 2303). Fluor told CB&I and PDM that they were the only two bidders. (*Id.* at 2304-05). By leveraging Respondents against each other, Fluor obtained a lower LPG tank price. (*Id.* at 2303-04; *see also* Price, Tr. 556).

274. Dr. Simpson testified that CBI's acquisition of PDM combines the two strongest sellers of LPG tanks in the United States. (Simpson, Tr. 3406). According to Dr. Simpson: "Prior to the acquisition ... CBI's pricing was constrained principally by the presence of PDM EC. When CBI acquired PDM EC, then CBI's pricing would be constrained by much weaker competitors and constrained at a higher price." (Simpson, Tr. 3406). Dr. Simpson testified that he believed that CBI's acquisition of PDM would lead to higher prices for LPG tanks. (Simpson, Tr. 3406).

275. Dr. Harris testified that prior to the acquisition, neither CB&I nor PDM could increase prices of LPG tanks in the United States without risking that each would lose sales to the other. (Harris, Tr. 7539-40, 7543-44).

G. Competition Between Respondents Resulted in Lower Prices for LIN/LOX Customers

276. In order to compete against PDM, CB&I has set prices so low that if CB&I won the business, the project would generate "negative margins." (Crain, Tr. 2594).

277. A CB&I document states that "PDM is the driver on negative margins on these LIN/LOX tanks. We understand that PDM can readily price the LIN/LOX work at -6% margin in the Gulf Coast and Southeast ... Unless there is a reason why PDM would be less aggressive or economical in NV, then I agree with Ron that -2% or -3% should get us on the high side of the target range." (CX 193 at CBI-PL020339).

278. CB&I responded to PDM's offensive by reducing prices to maintain business. In February 2000, in his quarterly report to PDM's Board of Directors, Mr. Scorsone wrote:

> "PDM EC has made significant market share increases against CBI in both domestic and international markets. Disruptions are occurring at CBI as a result of disconnects between their new senior management and long term CBI personnel. PDM EC will take advantage

> of this by providing a more nimble and focused response to customer needs and market opportunities. ... As was done from time to time in 1999 PDM EC will force CBI to take contracts at unattractive prices by exploiting this behavior."

(CX 23 at PDM-C 1002566).

279. LIN/LOX customers used the competition between CB&I and PDM to obtain lower prices. (Hilgar, Tr. 1357 (PDM met all Air Products' procurement criteria and generally offered a lower price than competing tank suppliers); CCFF 1087-1108 (MG Industries)).

280. Linde used PDM's prices as its "benchmark" to compare other firms' prices. (Fan, Tr. 967). Linde was able to leverage PDM's lower prices to negotiate pricing and other concessions from other vendors. (Kistenmacher, Tr. 867-8; *See* Patterson, Tr. 356-9, 362-4 (uses PDM's low price to reduce tank prices even further)).

281. Linde told CB&I that its "budget prices are always higher than PDM's, and that PDM always beats their budget price." (CX 182 at CBI-PL012354; *see also* CX 222 at CBI-PL037594 (PDM beat CB&I for a LIN/LOX tank for Linde in Louisiana by reducing the price in the last round of bidding)).

282. In 1998, CB&I competed against PDM, BSL and Graver for a construction project in Baytown, Texas for Air Products. CB&I projected Graver's and PDM's prices to be at $1,650,000, and BSL's price at over $2,000,000. CB&I's price was $1,793,000. CB&I believed it would be difficult to make up the difference on price without adding additional products to the customer. (CX 198 at CBI-PL023631; *see also* CX 197 at CBI-PL023628 (customer confirmed BSL bid was $2,700,000)).

283. A memo written to Mr. Scorsone in 1996, around the time that CB&I was spun off from Praxair, anticipates that CB&I will become "more active participant in the market, [and] this may push margins downward." (CX 1040 at PDM-HOU010888-89).

284. In 1997, a customer in Georgia obtained an additional 4% price reduction because of PDM's aggressive price cutting against CB&I in the final round of bids. (CX 166 at CBI-PL006870).

285. In May 2000, Luke Scorsone warned the Board of Pitt-Des Moines that "CBI has been extremely aggressive on pricing work in North and South America. They have taken certain projects at levels which would be slightly over PDM EC's flat cost." (CX 64 at PDM-C 1002562).

286. Other documents of Respondents reflect the competitive pressure that PDM regularly placed on CB&I. (*See* CX 614 at CBI-PL039367 (for LOX tank project for Air Products in Eureka, Nevada, PDM's quoted price was "$100,000 lower than CBI's and Matrix's price, and almost $200,000 lower than Graver's price"); CX 222 at CBI-PL037594 (PDM won a

bid from CB&I for a pair of LIN/LOX tanks by dropping their bid on their best and final offer by $40,000); CX 191 at CBI-PL018948 (Air Products had awarded a LOX tank to PDM, which "was the very low bidder and met all of the technical requirements.")).

H. Competition Between Respondents Resulted in Lower Prices for TVC Customers

287. [

]

(CX 242 at CBI-PL 4003340, *in camera*). [

] (*Id.*; *see also* Gill, Tr. 212, 213 (CB&I and PDM competition lowered prices to customers).

288. XL Technologies viewed the competition between Respondents as "always relatively intense." (Scully, Tr. 1175). CB&I's desire to win TVC projects caused the "pricing [of TVCs] to go down." (*Id.*, Tr. 1175-6). The competition was so "intense" that XL Technologies and its partner CB&I worried that the prices to customers would not return a profit: "the costs incurred to get" a project were so high that "if the price of the system isn't high enough, you've lost your profit before you ever begin the job." (*Id.* at 1179-81).

289. Spectrum Astro saw CB&I and PDM "fighting against each other pretty hard to get []our business." (Thompson, Tr. 2115). After receiving CB&I's initial bid, Spectrum Astro was pleased to find that CB&I "had probably low-ended the profit to get the job." (*Id.* at Tr. 2074-75).

290. In August 1998, Orbital Sciences Corp. ("Orbital Sciences") requested bids for a TVC to be built in Virginia. PDM and CB&I were the only suppliers that bid. (Scully, Tr. 1175; *see also* CX 112 at PDM-HOU011527; CX 235 at CBI-PL060195; CX 1196 at PDM-HOU011527). After CB&I learned there was a "significant difference" between its initial bid of $10.2 million and PDM's bid, CB&I further lowered its price by 15% to $8.6 million. (CX 235 at CBI-PL060197; *see also* CX 272 at CBI-H010889).

I. Other Firms Cannot Replace PDM Because Entry into the Relevant Markets Is Not Easy

291. Respondents contend that the merger is not likely to substantially lessen competition because entry by foreign and domestic firms into the relevant markets will deter or counteract the anticompetitive effects of concern.

292. A merger is not likely to create or enhance market power or to facilitate its exercise, if entry into the market is "so easy" that market participants, after the merger, "could not profitably maintain a price increase above premerger levels." *Merger Guidelines* § 3.0.

293. "Entry is that easy if entry would be timely, likely, and sufficient in its magnitude,

character and scope to deter or counteract the competitive effects of concern." *Merger Guidelines* § 3.0.

294. It is not enough for Respondents merely to point to some firm that might win one contract in the relevant markets. Entry that will deter or counteract the likely anticompetitive effects of this merger cannot be a "hit and run" exercise. Entry is sufficient only if the entrant restrains CB&I at the same pre-merger price levels and as consistently as PDM did. "Entry that is sufficient to counteract the competitive effects of concern will cause prices to fall to their premerger levels or lower. Thus, the profitability of such committed entry must be determined on the basis of premerger market prices over the long-term." *Merger Guidelines* § 3.0.

295. Both economic experts agree that entry by new firms would not restore the competition lost through an anticompetitive merger if this entry is at a price above the pre-merger price. (Simpson, Tr. 3151-2; Harris, Tr. 7438).

296. Dr. Simpson testified: "If you have an anticompetitive merger where you have the two strongest competitors in a market merge, then that merged firm could increase price until firms that previously had been fringe competitors begin to serve as a constraint. When it increases price, some of these fringe competitors begin to make sales, but ... the fact that the fringe competitors make sales at the higher price is not sufficient to restore the premerger competitive environment." (Simpson, Tr. 3151-2).

297. Dr. Harris testified that entry will not keep prices from rising above the preacquisition level if entry is only profitable at higher prices. (Harris, Tr. 7451). The mere fact that entry has occurred following an acquisition does not mean that the entry is sufficient to restore the premerger competitive environment. (Harris, Tr. 7436). Entry by firms who can only profitably enter at prices above the competitive level would not restore competition. (Harris, Tr. 7438).

298. Both Dr. Simpson and Dr. Harris testified that the observation that buyers are willing to consider buying from new firms does not always imply that entry is sufficient. (Simpson, Tr. 3281-2; Harris, Tr. 7791). Both Dr. Simpson and Dr. Harris also testified that the observation that buyers sometimes buy from new firms does not, by itself, imply that entry is sufficient. (Simpson, Tr. 3280-1; Harris, Tr. 7792).

299. Both Dr. Simpson and Dr. Harris also testified that the observation that new firms submit bids in a market does not always imply that entry is sufficient. (Simpson, Tr. 3282-4; Harris Tr. 7790). Both Dr. Simpson and Dr. Harris testified that the observation that new firms make some investments to sell into a market does not always imply that entry is sufficient. (Simpson, Tr. 3284-8 (citing RX 738); Harris, Tr. 7791).

300. The economic literature recognizes that entry does not always quickly restore competition, *e.g.*, F.M. Scherer and David Ross, *Industrial Market Structure and Economic Performance*, 366-67 (3rd ed. 1990)).

301. Dr. Simpson testified: "[T]he competition between CB&I and PDM EC that existed prior to the acquisition led to lower prices for buyers than whatever competition exists after the acquisition among CB&I and the foreign firms such as Skanska/Whessoe, TKK/ATV and Technigaz/Zachry." (Simpson, Tr. 3347).

302. There are significant barriers in the relevant markets that make entry by new firms or expansion by existing firms not easy. CCFF 307-391.

303. Dr. Simpson testified that a new entrant would have to possess the same tangible and intangible assets that made CB&I and PDM such strong competitors in order to restore competition in the relevant markets to the level that existed prior to CB&I 's acquisition of PDM. (Simpson, Tr. 3278, 3155). Dr. Simpson identified these tangible assets as a large engineering staff, field erection crews in the U.S., and fabrication facilities in the U.S. (Simpson, Tr. 3155-56). Dr. Simpson identified these intangible assets as reputation, building experience, and bidding experience. (Simpson, Tr. 3214).

304. A new entrant would have to possess the same tangible and intangible assets that made CB&I and PDM such strong competitors in order to restore competition in the relevant markets to the level that existed prior to CB&I 's acquisition of PDM. (Simpson, Tr. 3278). Dr. Simpson testified: [F]or an entrant to acquire these tangible and intangible assets, the entrant would need to spend a lot of money and a lot of time." (Simpson, Tr. 3278). If the new entrant had to abandon the entry, certain types of investments, such as rented office space, might be recoverable. Other types of expenditures, such as the cost of buying projects, would not be recoverable. (Simpson, Tr. 3279). According to Dr. Simpson, the portion of the expenditure that would not be recoverable would make up a "significant portion" of the original investment. (Simpson, Tr. 3278).

305. Dr. Simpson testified that, to compete as effectively as CB&I and PDM had prior to the acquisition, an entrant would need tangible and intangible assets comparable to those possessed by CB&I and PDM. (Simpson, Tr. 3407, 3451). Dr. Simpson identified the tangible assets as fabrication facilities, an engineering staff, and field erection crews. (Simpson, Tr. 3407, 3451). Dr. Simpson identified the intangible assets as reputation, building experience, and bidding experience. (Simpson Tr. 3407, 3451). Dr. Harris agreed that an entrant would need to possess these intangible assets. (Harris, Tr. 7314 (testifies that it is "fair to say" that "it's important to have a good reputation"; "that you have to be able to bid properly"; and that "there is learning by doing.")).

306. In selecting a supplier, customers weigh multiple criteria, including price, delivery schedule, quality, safety record and innovative engineering and design. (Gill, Tr. 206-07; Glenn, Tr. 4335; CX 1569 at 3). An entrant must possess all of these tangible and intangible assets to be able to replace PDM in the relevant markets.

1. *The Lack of a Fabrication Facility in the United States Impedes Entry*

307. Foreign builders of LNG tanks do not have fabrication facilities in the United

States. (Simpson, Tr. 3166). Having a fabrication facility in the United States gave CB&I and PDM a competitive advantage in bidding for LNG tanks in the U.S. (JX 37 (Newmeister, Dep., IHT); RX 738 at 2). Building a fabrication plant would cost about $9 million and take about 9 months. (CX 922).

308. The fact that CB&I and PDM both possessed fabrication plants in the United States gave them a competitive advantage in bidding for the relevant products (Simpson, Tr. 3159, 3163, 3166). For example, when Matrix Services Company sold Brown Steel Company, a division of Matrix that possessed a fabrication facility, it lost some of its competitive strength as a tank builder. (Simpson, Tr. 3160-61 (citing JX 37 (Newmeister, IHT) (loss of Brown Steel's fab facility means more subcontracting), RX 738 (Technigaz is less competitive because it doesn't have a fabrication facility); CX 922 (it costs $9M to build a fab facility in U.S. and takes 9 months)).

2. *Revenue Base and Scale Sufficient to Compete for Large Projects Impede Entry*

309. For a new entrant, having an adequate revenue base is critical. (Izzo, Tr. 6511-12). Substantial revenues are necessary to cover the sunk costs associated with preparing bids CCFF 310-312, and to meet customer demands for performance bonds and ability to pay any liquidated damages CCFF 313-317.

310. A firm needs to expend significant resources in developing proposals and price quotations for the relevant products. For example, a CB&I document reports that CB&I expended $300,000 in design resources and $190,000 in other resources to prepare its TVC proposal for Orbital Sciences' planned chamber. (CX 235 at CBI-PL060198).

311. Large amounts are required to conduct physical tests of materials and tank prototypes or components. For example, Matrix spent $200,000 - $300,000 testing cellular glass and rigid insulation systems that form the ground insulation between the inner and outer tanks for a LIN/LOX tank. (Newmeister, Tr. 1584-5; Cutts, Tr. 2235-6 (AT&V's first project realized a net loss of about $100,000, resulting from the research and development costs AT&V incurred to enter the LIN/LOX market)).

312. If a new entrant is not successful in winning projects, the costs of preparing proposals and prototypes become sunk, non-recoverable costs. (CX 235 at CBI-PL060198). A new entrant would need to be able to absorb those losses as a cost of entry in order to continue competing.

313. An entrant must have a sufficiently large revenue base to secure bonds required by customers. Customers require the tank supplier "to provide a bond to the contractor ... that guarantees the project will get finished." (Stetzler, Tr. 6385). An entrant's ability to bond a project, or bonding capacity, "has to do with your financial strength, and also the size of your company, which how big of a contract are you used to handling." (Stetlzer, Tr. 6385).

314. The amount of financial guarantee that is required varies with the risk profile of the tank supplier. (Izzo, Tr. 6485-86). Mr. Gill testified that, as a general rule, the cost for the bond is "a percentage rate based on your experience in the industry." (Gill, Tr. 198).

315. LNG facility contracts often impose large liquidated damage provisions on the constructor if the project is completed late. (CX 891 at 46-47 (Glenn, Dep.); Izzo, Tr. 6485-86; Bryngelson, Tr. 6154-55).

316. A large revenue base enhances the tank supplier's ability to offer the financial guarantees necessary to win contracts. (CX 891 at 43, 47 (Glenn, Dep.); Izzo, Tr. 6511-12). Customers want suppliers with a large asset base, because there is a larger target to go after if the contractor is late in completing the project and the customer sues for liquidated damages. (Bryngelson, Tr. 6154-55; Warren, Tr. 2297-98; JX 27 at 69 (N. Kelley, Dep.); Izzo, Tr. 6485-86; CX 1121 at CBI-HWH 053087).

317. Mr. Gill testified that his company, Howard Fabrication, with $2.5 million in annual revenues, could not effectively compete in the market for TVCs because it was not large enough to purchase the bonds for TVC projects. (Gill, Tr. 200-01, 234).

318. An entrant would need a large engineering staff to design LNG tanks. (Simpson, Tr. 3156 (citing CX 258 at 1794; CX 1591 at 15262). Dr. Harris agreed that an entrant must have engineering capability. (Harris, Tr. 7249).

319. LPG customers will not purchase LPG tanks from a supplier until they are assured that the supplier has sufficient personnel to design, engineer and construct an LPG tank. (RX 682 at MCG 000059 ("Texaco will verify that bidder is not overcommitted to perform that work."); Warren, Tr. 2295 (Before allowing a company to bid, Fluor reviews a potential LPG tank supplier's volume to ensure the supplier is capable of managing multiple projects simultaneously, and to ensure there is not too much backlog to prevent Fluor from accessing the supplier's resources promptly as needed); *see* CX 415 at 2).

320. LPG tank suppliers need sufficient personnel to handle adjustments to possible schedule changes. (Warren, Tr. 2296 (In order to bid on an LPG project, an LPG tank supplier needs enough staff to handle an adjustment if it becomes necessary to shorten the schedule or recover from delays); *see* CX 415 at 2).

3. *Lack of Know-How Relating to the Relevant Products Impedes Entry*

321. A new entrant would also have to surmount the challenge of developing a sufficient knowledge base to compete in the relevant markets.

322. A new entrant will need to establish the capability to perform specialized metal fabrication. (Hilgar, Tr. 1343-44 (fabrication of the pieces for a LIN/LOX tank is complex due to "the tolerances and the manufacturing processes.... [if the] pieces get to the field and don't fit, you

have a major problem"); Kamrath, Tr. 1995 (customer "would be very concerned about how he manages that, the supervision he provides, the standards and guidance he provides. It's not something that eliminates a supplier, but certainly it raises a concern.")).

323. A new entrant would need to develop the specialized construction capabilities necessary to successfully erect a tank. "The construction of field-erected storage tanks requires experienced engineers and construction workers with specialized know-how in welding techniques, metallurgy and design." (*see also* Hilgar, Tr. 1375).

324. Because of the specialized nature of tank construction, customers look to deal with established, reliable suppliers. Air Liquide wants "to make sure the know-how that is involved is known by the people doing the work so that tank is safe and operable." (Kamrath, Tr. 1994, 1995; *see also* Hilgar, Tr. 1356-1357, 1377-1378 (very important that these tanks are meticulously designed and constructed)).

325. The technology needed to supply TVCs is not readily available, and experience with the technology must be obtained while working for a company that supplies these products. (Scully, Tr. 1097-98). Additionally, new entrants would need to obtain "the ability to fabricate in the field a stainless steel vessel" and satisfy "the quality requirements of leak testing and cleanliness" for a TVC. (Higgins, Tr. 1272-3).

326. [

]. (Cutts, Tr. 2379-80; Kistenmacher, Tr. 881-82; Fahel, Tr. 1628-29, *in camera*).

327. Mr. Cutts testified that LNG tanks are "built out of fairly sophisticated materials. You don't just weld them up any old way....The equipment is quite expensive to develop. You can go buy it, but the stuff you buy has to be modified and tailored, and then you have to build procedures around it. So it's not like you can go buy an automobile. It's unique equipment...." (Cutts, Tr. 2379).

328. [ ] of [ ] testified the lack of knowledge of the industry and the lack of a fabrication plant currently obstruct the [ ] partnership's penetration of the LNG market. (, Tr. 1635-34, 1654, *in camera*)).

329. [

] (JX 30 at 180-81 ([ ]), *in camera*).

330. Other witnesses testified to the specialized expertise, including that relating to the welding of 9% nickel plate, required for the design and construction of LNG tanks. (Hall, Tr. 1792; JX 32 at 37-38 (Rapp Dep.)).

331. Peter Rano, a CB&I Vice President, concedes that CB&I considers its welding procedures for LNG projects to be proprietary work product which it does not want to fall into the hands of its competitors. (Rano, Tr. 6028-29).

332. PDM and CB&I have developed specialized welding procedures, equipment and techniques for welding 9% nickel steel. For example, in 1999, PDM developed and implemented twin wire (two electrodes/one control) submerged arc for welding of horizontal seams of 9% nickel in cryogenic applications. (CX 109 at PDM-HOU006700).

333. PDM has also developed weld procedures and specific equipment for automatic stud welding of stainless steel studs to 9% nickel for use in concrete wall embedments for double and full containment LNG storage tanks. (*See* CX 109 at PDM-HOU006701; Knight, Tr. 2614-15).

334. A new entrant would need to hire engineers with previous experience in designing TVCs, which are "truly one-of-a-kind designs for very specific applications on very technical products." (JX 37 at 127 (Newmeister, IH.); *See also* Higgins, Tr. 1272-3).

4. *Lack of Prior Experience Building Relevant Products Impedes Entry*

335. Both economic experts agree that the economic literature recognizes reputation as a barrier to entry. (Simpson, Tr. 3229-30; Harris, Tr. 7445-8). Carlton & Perloff explain: "Product differentiation (firms produce similar but not identical products) can create a long-run barrier to entry. For example, consumer goodwill toward established brand names may make it more difficult for a new brand to enter... For example, because the product of the first firm in the market is familiar to customers, they may be reluctant to switch to a new brand." D. Carlton & J. Perloff, *Modern Industrial Organization*, at 80 (3d ed. 2000) (hereinafter "Carlton & Perloff"). Dr. Harris agrees. (Harris, Tr. 7445-6; *see* Harris, Tr. 7448 ("reputation matters").

336. There are "tremendous safety considerations" regarding LNG tanks. (Price, Tr. 564-5). If LNG should leak from a tank, the vaporized LNG could lead to fires and death, and liability for losses. (Bryngelson, Tr. 6234-35; *see also* Blaumueller, Tr. 293-4).

337. The same safety and liability considerations drive customers in the other relevant markets to look for tank builders with experience. (Newmeister, Tr. 1609-10; Glenn, Tr. 4073; CX 258 at CBI-H001794; JX 27 at 69-70 (N. Kelley, Dep.); Warren, Tr. 2293-94; *see* CX 415 at 2).

338. Leaks in a TVC can prevent the user from meeting the vacuum specifications required for satellite testing. (Proulx, Tr. 1904-05). In addition, defects in the welding of the chamber can lead to the leakage of contaminants into the chamber, which can interfere with the accuracy of the test results. (Scully, Tr. 1143-44). If a TVC fails during a satellite test, the satellite within the chamber can be damaged. (Neary, Tr. 1454; (Scully, Tr. 1144). Operational problems

with a TVC can have a "bad effect" on the satellite's program schedule, because the test may have to be restarted from the beginning after the problem is resolved. (Scully, Tr. 1145-46).

339. To avoid these catastrophes, customers seek experienced tank suppliers. Mr. Hall of Memphis Light Gas & Water put it succinctly: "If you're going to be handling something like liquefied natural gas [LNG], you don't want some amateur putting it together. The results can be catastrophic." (Hall, Tr. 1789).

340. Dr. Kistenmacher, a vice president at Linde BOC Process Plants, testified that risks associated with leakage cause Lotepro to subcontract the design and construction of LNG tanks to companies that have a long track record of experience in constructing these facilities. (Kistenmacher, Tr. 904-05).

341. Mr. Kelley of ITC testified that he will not purchase an LPG tank from a company with no prior experience because "I don't want to be a guinea pig." (N. Kelley, Tr. 7104-05; *see also* Warren, Tr. 2290-91; CX 415 at 2).

342. LPG customers want a tank supplier with a long track record building several LPG tanks. (Carling, Tr. 4512 (the last ten years would be the most relevant experience); JX 27 at 72 (N. Kelley, Dep.) (would "definitely want [an LPG tank supplier] to have had prior experience building an LPG tank before I would hire them to build an LPG tank for me.")).

343. [

]. ([ ], Tr. 1995-96, [2236-7], *in camera*; *see also* Knight, Tr. 2628 ("[E]xperience building LIN/LOX tanks provides customers with confidence that the product will be designed and built the way it was requested"); JX 25 at 83-4 (Hilgar, Dep.) (describing safety hazards associated with LIN/LOX tanks).

344. Mr. Scully, President of XL Technology Systems, testified that TVC customers want experienced suppliers with "knowledge as to how to deal with the architects and the construction people ... and ability to manage a project." (Scully, Tr. 1147; *see also* Higgins, Tr. 1272; Proulx, Tr. 1756; Neary, Tr. 1455).

345. Companies, such as Black & Veatch and Air Products, that provide the liquefaction systems and other components but not the LNG tanks, are unwilling to partner with an inexperienced LNG tank supplier. (CX 157 at CBI-PL003348 (Black & Veatch "are looking to partner on a project with a firm which has better experience"); Davis, Tr. 3190-1 (Air Products chose to partner with PDM "because we needed to have somebody who would be competent to work with and capable of project execution, and they had demonstrated those capabilities")).

346. Customers will pay a premium for the lower risk from dealing with the more experienced supplier. (Fan, Tr. at 960-1, 1017-8 (did not purchase from AT&V even though AT&V's price was $200,000 lower than CB&I's)).

347. A CB&I customer survey notes that "the main weakness noted about other competitors is that they are generally less experienced and reliable than CBI. Their expertise is generally narrow and limited compared to CBI. Lacking the discipline and financial strength of a CB&I makes using smaller suppliers a more risky proposition. ... CB&I should be able to succeed by presenting itself as the low-risk, best value supplier who has the broadest and deepest capabilities." (CX 218 at CBI-PL034532, CBI-PL034537; *see also* Scully, Tr. 1146-47).

348. It would take an inexperienced supplier in the relevant markets several years to build a track record. (CX 167 at CBI-PL007052). Developing a reputation similar to CB&I's for supplying cryogenic tanks can take as much as ten years. (Cutts, Tr. 2372, 2385).

349. Experienced suppliers minimize defects by learning through trial and error. Mr. Scully of XL Technologies has personally learned from engineering errors and construction errors experienced on TVC projects. Additionally, when working with CB&I, he observed that their employees learned from past mistakes made in the process of supplying TVCs. (Scully, Tr. 1140-41).

350. [

] ([, Tr.] 1637-38, *in camera*).

351. CB&I has worked many "years" to "streamline its processes" and lower its costs. (CX 392 at 3).

352. The construction of an LNG import terminal, from the initial ground breaking to completion, takes four to five years. (Outtrim, Tr. 700; *see also* CX 162 at CBI-PL006153; CX 214 at CBI-PL033809).

353. If FERC approval is required, the total time to complete the LNG peakshaving project would increase by an additional year, thereby delaying entry by another year. (CX 168 at CBI-PL007235).

354. Mr. Scully testified that a TVC with a 30-foot diameter can take about two years to design and construct. (Scully, Tr. 1108).

355. [

] . (CX 629 at CBI-PL033069, *in camera*).

356. Learning by doing represents a barrier to entry in each of the markets. (Simpson, Tr. 3237). Dr. Simpson testified that economic studies have found that producers in a number of industries (*e.g.*, air frame production, chemical processes, construction of nuclear power plants)

become more efficient as their cumulative output increases. (Simpson, Tr. 3230) Dr. Simpson noted that as these producers produce more and more of a product, they learn better ways of producing that product. (Simpson, Tr. 3231).

357. Builders of LNG tanks benefit from learning by doing. Samuel Leventry, CB&I's vice president of technology services, testified: "Again, if you have the same people doing the same work more continuously, there's going to be some efficiencies in that." (CX 497 at 68 (Leventry, Dep.); CX 392 at 4).

358. Learning by doing in each of the markets is specific to individual countries. Dr. Simpson testified that some learning by doing is specific to the United States. (Simpson, Tr. 3242) This learning includes becoming familiar with U.S. regulations, knowing the local work force and identifying who the better subcontractors are. (Simpson, Tr. 3242-43). A foreign company that has built LNG tanks overseas would therefore still need to learn by doing in order to compete in the United States LNG market. (Simpson, Tr. 3242 (citing CX 1204); CX 1204; CX 1575; RX 738 at 2).

359. According to Dr. Simpson, CB&I and PDM had been building these tanks for about 40 years. Over time, as they built more of these tanks, they figured out ways to lower their costs. When CB&I bought PDM in 2001, CB&I bought the only other company that had worked its way down the learning curve. Thus, if an entrant were to enter now, it would have higher costs than CB&I because it has not worked its way down the learning curve. Because CB&I would have lower costs than this entrant, CB&I could increase its price by some amount without losing sales to this entrant. In this way, learning by doing represents an entry barrier in this industry. (Simpson, Tr. 3237-38).

360. Dr. Harris acknowledges that entry is more difficult if an incumbent firm has lower costs. (Harris, Tr. 7443). If a prospective entrant found that it has a substantial cost disadvantage, that would affect the likelihood that it would enter. (Harris, Tr. 7443).

361. Both economic experts agree that the economic literature recognizes learning by doing as a barrier to entry. (Simpson, Tr. 3238; Harris, Tr. 7440).

362. Learning by doing can provide a cost advantage to incumbent firms in a market. Jean Tirole, an authority identified by Dr. Harris (Harris, Tr. 7416-7), cites Bain (1956) to explain how learning by doing can provide established firms an absolute cost advantage over entrants that would prevent supranormal profits of the established firms from being eroded by entry: *"Absolute cost advantages* The established firms may own superior production techniques, learned through experience (learning by doing) or through research and development (patented or secret innovations)." J. Tirole, *The Theory of Industrial Organization* 306 (1988); *id*. at 305. Dr. Harris agrees. (Harris, Tr. 7440).

363. If the learning-by-doing cost advantage is substantial enough, other firms may choose not to enter the market. Carlton & Perloff, at 363. Dr. Harris agrees. (Harris, Tr. 7441).

364. Dr. Harris further agreed with Scherer & Ross that it is possible that "when learning economies are important, the capturing of an initial advantage by some company could set in motion a dynamic process that ends with the relevant product more or less permanently monopolized." Scherer & Ross, at 372. (Harris, Tr. 7441).

5. *Inability to Complete Projects on Schedule Impedes Entry*

365. According to CB&I's 1995 10-K, "competition is based primarily on performance and the ability to provide the design, engineering, fabrication, project management, and construction required to complete projects in a timely and cost-efficient manner. Chicago Bridge believes its position is among the top in its field." (CX 1030 at 7).

366. According to Mr. Kelley, whether a tank supplier can construct a tank on schedule "is often a critical factor." (JX 27 at 67 (N. Kelley, Dep.)). An LPG customer, such as ITC, relies on a tank supplier's expected completion date to accept shipments of LPG, delays in schedule exposes the customer to the risk of financial loss for each day the customer cannot accept shipment: "there's monthly rental that you don't get ... and your money is hanging out there not making money for you for that period of time." (JX 27 at 66 (N. Kelley, Dep.)).

367. To minimize the risk of delays, Fluor reviews a potential LPG tank supplier's referrals to ensure that in the past the supplier performed adequately, was able to meet the schedule, and avoided problems, before it allows a tank supplier to bid on an LPG project. (Warren, Tr. 2291-92; *see* CX 415 at 2).

368. TVC customers are also concerned about the supplier's ability to meet the project schedule, as delays in testing a satellite can engender financial liabilities for satellite manufacturers. A key procurement criteria for [ ] when selecting a supplier for the [ ] was the supplier's ability to meet its expedited schedule on prior projects. ([ ], Tr. 1897-98, *in camera*). To mitigate the risk of a delay in the construction of the [ ], [ ] spent an additional [ ] million to ensure that it could test its new [ ] at [ ] if the [ ] was not completed on time. ([ ], Tr. 1898-99, *in camera*).

369. TRW's selection criteria requires potential suppliers to show a history of successfully performing five chamber projects, financial viability including the ability "to pay their bills for this venture," and "technology innovation." (Neary, Tr. 1443-44, 1492).

6. *Lack of Knowledge about Tank Construction Business Conditions in the United States Impedes Entry*

370. LNG tank suppliers have a "home court advantage" when supplying tanks in their own countries. (Simpson, Tr. 3227). Dr. Simpson demonstrated this with a world map on which Dr. Simpson identified the locations where various firms have built LNG tanks. (CX 1649;

Simpson, Tr. 3227-8). One explanation for this home court advantage is that purchasers in a particular area want to buy from companies that have previously supplied tanks in that area. (Simpson, Tr. 3229).

371. In order to compete for the relevant products, an entrant will need to establish a local presence in the United States. Respondents and customers perceive that familiarity with the United States, its codes, and local labor, provides a company that has experience building the relevant products in the markets with a competitive advantage. CCFF 373-386.

372. Prior to the acquisition, CB&I and PDM had a competitive advantage over other firms because they had an efficient core group of workers for projects, and other workers that repeatedly interacted with those workers and were familiar with CB&I and PDM's procedures. (Simpson, Tr. 3207-08, 3212).

373. Dr. Simpson testified that by hiring workers throughout the U.S. and using these workers on projects, CB&I and PDM have learned over time who the good workers are and thus learn which workers to hire for which projects. Over time, the workers learn what procedures CB&I and PDM use. As these workers become familiar with these procedures, they become more productive. (Simpson, Tr. 3167, 3207-10 (citing CX 615 at 72-73 and Hall, Tr. 1797-78)).

374. Regional companies are generally limited to knowledge of the work force in their regions. (Simpson, Tr. 3210-12). Because they do not know the work forces in other regions, they would have some difficulty in doing work in those regions. (Simpson, Tr. 3210-12) (citing to CX 485 at 97).

375. Respondents' ordinary course of business documents and statements to the investment community emphasize that they are uniquely positioned to take advantage of their local knowledge of localized business conditions in the United States. This local knowledge gives Respondents a competitive advantage. CCFF 377-386.

376. On Texaco's Ferndale project, Mr. Raymond Maw of Morse and Mr. James Crider of Texaco testified that Morse's proximity to Texaco's Ferndale facility gave Morse a competitive advantage over other bidders. (Maw, Tr. 6599-600; Crider, Tr. 6721).

377. Morse's local presence also gave Morse "a $70,000 cost advantage for transportation" over the other bidders on the Ferndale project. (Maw, Tr. 6564-5).

378. Mr. Norman Kelley confirmed that a local presence is preferred, because local companies are "just more accessible [] and it's easier to do business." (JX 27 at 91 (N. Kelley, Dep.)). Mr. Kelley stated that "it would be hard [for an LPG company with no local presence in the United States]... to get business to start out with." (JX 27 at 73 (N. Kelley, Dep.)). "If they don't have anything in the [S]tates for you to go look at, why, I'm not going to go to France to look at their stuff." (JX 27 at 73-74 (N. Kelley, Dep.)).

379. Mr. Blaumueller testified that it is not a "prudent risk" to purchase from a supplier with no experience building LNG tanks in the United States. (Blaumueller, Tr. 310).

380. For Black & Veatch, until a new entrant has built an LNG tank in the United States, "the risks, potential risks, have not gone away." (Price, Tr. 578).

381. An inexperienced supplier can incur delays in securing the necessary regulatory approvals from FERC. Mr. Blaumueller testified that the FERC approval process can add approximately twelve months to the process of building an LNG tank. (Blaumueller, Tr. 316).

382. Customers place a premium on the value of CB&I and PDM's substantial experience in obtaining project approval. [

]. (Sawchuk, Tr. 6072-73; *see also* , Tr. 719, *in camera* [

]); , Tr. 703, *in camera* [

]).

383. [ ] testified that it is "too big of a hurdle" for a new entrant to come in and beat CB&I; it will take years before foreign LNG tank firms can establish themselves as effective competition to CB&I: [

] ([ ], Tr. 703, 716, 727, *in camera*).

384. Bidding experience is another country-specific intangible asset that gives CB&I a competitive advantage over other firms.

385. If a firm that is bidding for a particular project lacks good information about the actual cost of completing that project, there would be some error in its estimate of the cost of completing the project. The firm might bid too low, or it might bid too high. If the firm bids too low, it runs the risk of winning the project at a price at which it would lose money. This type of error is called the winner's curse. To guard against the winner's curse, a firm that is uncertain of the actual cost of completing a project will include a cushion in its bid. As the firm's uncertainty increases, the size of the cushion increases. Given this, economic theory would predict that bid quotations from firms that are less knowledgeable about the cost of completing projects in the United States, such as recent entrants, will tend to have a larger cushion than bids from firms that are experienced and knowledgeable about costs in the United States, such as CB&I and PDM. These larger cushions translate into higher bids for recent entrants. (Simpson, Tr. 3249-50 (citing Eric Rasmussen, *Games & Information*, 590-91, 588-89 (1989))).

7. *Entrants Face Higher Sunk Costs Because They Must Buy their Way into the Markets*

386. Dr. Simpson testified that an entrant seeking to develop building experience, bidding experience, and a reputation faces a "catch-22" situation. Dr. Simpson testified that, in order to win projects, a firm must have a good reputation and be a low-cost provider. However, it is difficult for a firm to establish a good reputation and become a low-cost provider until that firm has actually won projects. (Simpson, Tr. 3252-53). In order to overcome the "catch-22 situation," a new firm may try to buy its way into the market by offering prices that are lower than its costs. (Simpson, Tr. 3254).

387. Dr. Harris conceded that foreign LNG tank companies may have to buy their way into the U.S. LNG tank market in order to overcome reputation barriers and higher costs (Harris, Tr. 7252-53).

388. A process by which a new firm would attempt to buy its way into a market would represent a significant cost of entry. (Simpson, Tr. 3254 (citing CX 1204)). Because projects in the relevant markets are infrequent, it would take an entrant a number of years to buy several projects, enter the market, and recover its original investment. (Simpson, Tr. 3257; CX 1204). In Dr. Simpson's expert opinion, the expectation that it would take several years for an entrant to recover its original investment would make entry less likely. (Simpson 3257).

389. Dr. Simpson's review of the record indicates that U.S. LNG tank customers would prefer a U.S. supplier over a foreign supplier at the same price, due to the fact that U.S. suppliers know the market, have experience in constructing the tanks, and will be more likely to meet the projects' schedules. (Simpson, Tr. 3257).

390. Based on his examination of the pre-merger contribution margins and profit margins in the relevant markets Dr. Simpson concluded that it would not have been profitable for a firm to buy its way into the market before the acquisition. (Simpson, Tr. 3257-58). Because the contribution margins, or the profit that new entrants would make on the last units sold, on the relevant products were small (under 15 percent) prior to the acquisition, a new firm's cost of entry would likely not be offset by the contribution margins that it would make on projects. (Simpson, Tr. 3258).

391. [
]. ([ ], Tr. 4752-53, *in camera*).

J. Other Firms Cannot Replace PDM Because of Respondents' Competitive Advantages

392. CB&I and PDM were the only two companies that had extensive experience building the relevant products in the United States. CCFF 136, 151, 172, 192. As a result of their

extensive localized experience and knowledge, Respondents have a distinct competitive advantage against other firms, particularly foreign suppliers. CCFF 400-418.

393. Respondents have emphasized in this proceeding the value of their experience as a source of competitive advantage. As CB&I's Chief Engineer described in Respondents' Motion for Perpetual *In Camera* Treatment of certain engineering documents, "CBI has, for many years, **worked to streamline its processes to reduce costs and improve quality**." (CX 392 at 3 (emphasis supplied)). CB&I expressed concern that information regarding its own and PDM's "best practices initiative would be valuable to a competitor." (CX 392 at 3). Indeed, as Respondents pointed out, "CB&I has been in business for over a hundred years; it was unable to develop the best practices from PDM without combining the two companies." (CX 392 at 3).

394. CB&I went on to describe how "In the storage tank business, **innovations provide benefit to the innovator for a lengthy period of time**. In this way, our business is different than high-technology business, which involve technologies that quickly become obsolete over time. Because of the long-lasting benefits that our innovations will generate, I believe it is imperative that information regarding these innovations be protected from public view indefinitely." (CX 392 at 4) (emphasis supplied)).

395. In a March 2000 presentation, CB&I stated that its "110 years of industry experience" gave CB&I a "Competitive Advantage." (CX 230 at CBI-PL055446).

396. [

] (CX 111 at PDM-HOU008396, *in camera*).

397. Mr. Price testified that Respondents' experience in the United States gave them a competitive advantage over other companies because both companies "know the lay of the land, if you will, in the U.S. and are, in our opinion, better able to quantify that and price accordingly." (Price, Tr. 589-90).

398. CB&I's acquisition of PDM has only increased this local knowledge competitive advantage. In a 2002 bid proposal, CB&I emphasized that its acquisition of PDM "has also increased our abilities and expertise for projects such as yours." (CX 449 at 7403).

1. *Respondents Have Unequaled Competitive Advantages in the LNG Market*

399. According to CB&I's Chief Engineer, CB&I has worked "years" to "streamline its processes" and lower its costs. (CX 392 at 3). CB&I's acquired "experience with special materials," as characterized by a March 2000 presentation, gave CB&I a "strong position with proprietary technology" in LNG. (CX 230 at CBI-PL055440).

400. These efforts have resulted in a cost advantage over other competitors on LNG projects. When asked, post-acquisition, about CB&I's ability to compete for LNG projects, Mr.

Glenn informed investors that for LNG tanks "we can win the work *every time* technically." (CX 1731 at 44; Glenn, Tr. 4380, emphasis added).

401. Mr. Glenn recognized that other companies could not compete at CB&I's cost level without going out of business, saying "if [other companies] want to dive in and take the work for less than they can execute it for, that's fine, we'll just sit and watch them go out of business, too." (CX 1731 at 44; Glenn, Tr. 4380).

402. Mr. Newmeister of Matrix testified that a new entrant into LNG tanks would be likely to operate at a higher cost level than an experienced supplier like CB&I for some time while the entrant learned from its mistakes. (Newmeister, Tr. 1605-6).

403. In actual LNG tank bidding projects where foreign firms competed against CB&I, foreign competitors have bid at higher prices than CB&I did (or could have) and have been unable to match CB&I's prices. This can be seen in the stories of the Dynegy project CCFF 979-1007, the [ ] projects CCFF 832-883, and the Memphis project CCFF 930-944.

2. *Respondents Have Unequaled Competitive Advantages in the LPG Market*

404. CB&I and PDM were each other's closest competitors because they enjoyed the same cost advantages, as a result of their similarly extensive experience. CCFF 113, 122-123, 304-307, 322-420.

405. [ ] (CX 486; CX 824; CX 1210, *in camera*; CX 1212 at 7, *in camera*; CX 397 at 1, *in camera*; RX 757).

406. There are no LPG tank suppliers in the United States that can match Respondents' track record. (CX 152). (See CX 160 at CBI-PL004768; CX 171 at CBI-PL009817; CX 172 at CBI-PL009975; CX 179; CX 190 at CBI-PL017044; CX 207 at CBI-PL031456; CX 217 at CBI-PL 034420; CX 244 at CBI-PL4005377; CX 417 at CBI 026845-52-HOU).

407. CB&I is recognized as one of the leading tank builders in the world and markets itself as the "largest tank builder in the world." (CX 258 at CBI-H001794). CB&I has been building refrigerated storage tanks, such as LPG tanks, since World War II. (CX 258 at CBI-H001794). CB&I has built over 1100 field-erected low-temperature and cryogenic tanks, which includes LPG tanks. (CX 258 at CBI-H001793).

408. [ ]. (CX 890 at CBI 069832 ("Schedule is a major advantage for CB&I."); CX 124 at PDM-HOU 2011161 ([ ] CX 217 at CBI-PL-034447, *in camera*.

409. Customers know of no competitive suppliers, other than CB&I and PDM, of field-

erected LPG tanks in the United States. (Newmeister, Tr. 1614; Warren, Tr. 2307-08, 2309, 2283-4 (post-acquisition, CB&I is now the only supplier that is prequalified to bid on LPG tanks)).

410. Dr. Harris stated that he has no evidence that any of the foreign tank companies that he (Dr. Harris) identified on his demonstrative exhibit RX-948 have chosen to construct LPG tanks in the United States. (Harris, Tr. 7779). Dr. Simpson testified that neither TKK, Skanska-Whessoe, nor Technigaz would be sufficient to restore the preacquisition level of competition in the LPG market. (Simpson, Tr. 3407; *See* RX 738 at ¶ 15, *in camera* ([ ] has "no plans" to compete for single containment LNG tanks, LIN/LOX tanks, LPG tanks or TVCs)).

411. Dr. Simpson testified that firms such as AT&V, Matrix Services, and Wyatt Field Services would not be able to restore the preacquisition level of competition in the LPG market. (Simpson, Tr. 3408-9). Dr. Simpson noted that AT&V is much smaller than PDM was and that all three firms lack the building experience and the reputation that PDM possessed. (Simpson, Tr. 3409).

3. *Respondents Have Unequaled Competitive Advantages in the LIN/LOX Market*

412. [ ]. (*See* CX 171 at CBI-PL009817; CX 244 at CBI-PL005377; CX 449 at CBI-E 007403, CX 471 at PDM-CH 003456; CX 1152 at CBI-HWH 075021; CX 1486 at CBI 059970; CX 1488 at CBI 059894; CX 224 at CBI-PL-039363-390; CX 244 at CBI-PL-4005377 ("CB&I has built over 600 field erected cryogenic storage tanks of all types.")).

413. PDM's lower cost structure for LIN/LOX tanks gave it a cost advantage over CB&I. In its Marketing Analysis, CB&I admitted that its "[c]ost structure [in low temperature and cryogenic] is too high, particularly on small jobs." (CX 217 at CBI-PL034421).

414. CB&I and PDM personnel comparing pricing data on a LOX tank for Air Liquide in Longview, Texas, three weeks after the acquisition had occurred, "found that the PDM cost was much lower than the CB&I cost for the same project. PDM bid this work for 9% S&GA and 1 or 2% profit. CB&I's final number included about 9.5% S&GA and -12% profit." (CX 136 at CBI 014195-HOU).

415. Post-acquisition, CB&I now enjoys the competitive advantages of CB&I and PDM's combined experience and PDM's low cost structure. CCFF 1082.

4. *Respondents Have Unequaled Competitive Advantages in the TVC Market*

416. PDM gained efficiencies and reduced costs by assigning experienced employees on TVC projects. In an e-mail written relating to the Spectrum Astro TVC project, Mr. Scorsone

wrote that "[t]he retirement of Fred Dilliott will hurt our ability to manage [the Spectrum Astro project]" and "Bob Watson has left the company and this will hurt our ability to manage the engineering and startup program." (CX 1685 at CBI/PDM-H 4000903).

417. Mr. Scully testified that CB&I and PDM's extensive experience in TVC has established an industry-wide confidence level in the two firms that has evolved over the years. (Scully, Tr. 1110, 1040).

418. According to a CB&I marketing analysis document, [

] (CX 217 at CBI-PL034470, *in camera*).

419. CB&I does not consider Howard capable of fabricating a TVC, let alone having the capability to design, engineer, and field erect a TVC. (Scorsone, Tr. 5061 ("I think that would be a real stretch for Howard, very much so.")

K. Foreign and Domestic Firms Cannot Replace PDM

1. *CB&I Does Not Foresee Other Firms Restraining Its Market Power*

420. Respondents argue to the Tribunal that any number of foreign and domestic firms can replace PDM. However, Respondents have not produced any business records or statements from executives inside or outside of the courtroom that any one of these "entrants" have restrained CB&I's market power since the merger, or that one of these firms has replaced PDM as CB&I's closest competitor to the same extent as PDM did before the merger.

421. Respondents ordinary course of business documents and communications to the public prior to the commencement of this proceeding uniformly characterize the competitive landscape as dominated by CB&I and unthreatened by foreign and domestic firms.

422. Although Respondents suggest that international companies, *e.g.*, TKK, IHI, Hyundai, Technigaz, and Whessoe, are competitors who can compete effectively at pre-merger prices, a PDM document identifies these firms as competitors only on international projects. (CX 116 at PDM-HOU019181; *see* CX 96 at PDM-HOU 2009785).

423. [

] (CX 213 at CBI-PL033084, *in camera*).

424. In its 2001 10-K, CB&I represents to its investors that "Because of our long-standing presence in numerous markets around the world, we have a prominent position as a local contractor in those markets." (CX 1033 at 4).

425. This "long-standing presence" has provided CB&I with a competitive advantage over other competitors. CB&I management believes that CB&I is a "leading competitor in its

markets," and that "it is viewed as a local contractor in a number of regions it services by virtue of its long-term presence and participation in those markets. *This perception may translate into a competitive advantage* through knowledge of local vendors and suppliers, as well as of local labor markets and supervisory personnel." (CX 1033 at 8; CX 1032 at 8; CX 1575 at 6-7 (emphasis added))

426. In its amended 10-K, filed April 1, 2002, CB&I notes that "[o]ur experience, particularly in risk management and project execution, enables us to recognize and capitalize upon attractive opportunities in our primary end markets...We believe that our ability to identify attractive customers and rapid growth markets *will provide a competitive advantage* during changing market conditions." (CX 1033 at 5 (emphasis added))

427. According to CB&I's 10-K, filed April 1, 2002, "[b]ecause of [CB&I's] long and outstanding safety record, we are invited to bid on projects for which other competitors do not qualify." (CX 1033 at 4).

428. On October 31, 2002, Mr. Glenn touted CB&I's competitive advantage over other competitors in a conference call with the investment community: "[W]e're really proud of the fact that, you know, a lot of owners out there, if they go to build a sophisticated project, like an LNG project or an LNG tank, they don't want to take a chance on a low price and a potential second class job or shoddy welding or any of that kind of stuff ... We have an excellent track record." (CX 1731 at 44-45).

429. Mr. Glenn added that CB&I has a pricing advantage: "short of somebody coming in, which they do, and just taking a big dive on the price, that we can win the work every time technically. And if they want to dive in and take the work for less than they can execute it for, that's fine, we'll just sit and watch them go out of business, too." (CX 1731 at 44-45).

430. Mr. Glenn described CB&I's "high" margin levels and faith that CB&I can maintain its position against competitors because "we can still be low bidder and make more money on it than most of our competitors, if not all of them." (CX 1731 at 41-42).

431. Mr. Glenn expressed little concern about CB&I's future competitiveness against foreign and domestic competitors: "The results speak for themselves, so I will only comment that our markets and prospects appear more attractive to us today than at any time in our recent past... I would give you a general comment that our prospect list and the projects that we're attracting looks better to us today than at any time since the IPO [initial public offering of stock in 1997] certainly. If you had to pick a number, I don't know, maybe it's 30 percent or something, but it's a big number." (CX 1731 at 4, 27-28).

432. A key merger planning document acknowledges that Respondents have a "pricing advantage" against competitors, and it is the plan of Respondents to use this "pricing advantage as necessary to not lose market share to competitors during the merger." (CX 1544 at CBI 057941).

433. Another key merger planning document states that one of the "objectives" of the merger is to "ensure that we do not allow smaller competitors to take share and pursue business in our attractive markets." (CX 101 at PDM-HOU002359).

434. The same merger planning document states that foreign and domestic firms will not impinge CB&I's post-merger growth because "barriers to entry" will be created. (CX 1544 at CBI 057941).

435. Mr. Scorsone's business conduct reflects Respondents' inattention to foreign or other domestic companies. Mr. Scorsone admitted that he could not recall whether Respondents actually maintained a file of press releases concerning the activities of foreign LNG suppliers (Scorsone, Tr. 5096). Mr. Scorsone further admitted that the press releases relating to joint ventures with foreign LNG tank suppliers were received from attorneys, and testified that if he ever did receive these releases in the course of business, he "probably threw them out." (Scorsone, Tr. 5097).

2. *The Firms Cited by Respondents as Entrants Cannot Replace PDM*

436. An entrant faces two disadvantages in competing against CB&I. It lacks the reputation that CB&I has, and it lacks the cost advantages that CB&I has gained through learning by doing. (Simpson, Tr. 3259). If an entrant decides that it will not buy its way into the market, then it will have to wait for a project where, for some reason, its services are preferred to the incumbent firm. (Simpson, Tr. 3258-9). Dr. Simpson then noted that foreign LNG tank builders had not been able to win projects in the U.S. when CB&I and PDM were competing. Dr. Simpson then noted that CB&I is the "best positioned company to win a particular project," and that it will win projects if it bids at or near its cost of constructing the project. (Simpson, Tr. 3261). If, however, CB&I bids double its cost, it is more probable that a foreign entrant will be able to win projects. (Simpson, Tr. 3261).

437. Dr. Simpson testified that a new entrant would not gain sufficient learning by doing and reputation from "winning a single job or a small number of jobs" to compete on an equal footing with CB&I in the United States. (Simpson, Tr. 3253-4, 3261). As evidence for this, Dr. Simpson cited two examples. Dr. Simpson noted that Morse Tank was successful in winning a project to build an LPG tank in Washington state in 1994. However, after having completed that project, Morse Tank did not win any other projects to build LPG tanks in the U.S. Dr. Simpson then noted that later PDM documents identifying competitors for LPG tanks in the U.S. do not list Morse Tank as a competitor. (CX 116 at PDM-HOU019181; CX 859 at PDM-HOU 017571) Based on this, Dr. Simpson testified: "the Morse Tank experience suggests that it was a one-time job that this Morse Tank company was able to win, but winning that job did not make them a competitor on an equal footing with CB&I or PDM EC." (Simpson, Tr. 3262).

438. Dr. Simpson testified that ATV's entry into the market for pressure spheres represents a second example where winning one or two jobs did not allow an entrant to compete on an equal footing with an established incumbent firm. (Simpson, Tr. 3262-3). Pressure spheres

are large, field erected structures for storing gases under pressure. (Simpson, Tr. 3263). Dr. Simpson noted that respondents cite a partnership between TKK, a Japanese engineering firm, and ATV, a U.S. construction firm, as being a new entrant into the LPG market whose presence would help discipline CBI's pricing. (Simpson, Tr. 3263).

439. Dr. Simpson noted that although ATV won and completed three projects to build pressure spheres in the mid 1990s, it has not won any subsequent pressure sphere projects. (Simpson, Tr. 3263). Dr. Simpson then analyzed the sales of pressure spheres from 1995 to the time of the acquisition. According to Dr. Simpson, ATV won its first pressure sphere project in 1993. By January 1995, ATV should have completed this project. If completing one project placed ATV on an equal footing with incumbent firms, then ATV should have had a one-third chance of winning subsequent pressure sphere projects. Of the 57 pressure sphere projects awarded between 1995 and the time of the acquisition, CB&I won 31, PDM won 25, and ATV won 1. Given this sample, Dr. Simpson computed the probability that ATV would have won 1 or fewer pressure sphere projects if it had a one-third chance of winning. Dr. Simpson calculated this probability as being extraordinarily small. (Simpson, Tr. 3274-7 (*citing* CX 1651)). Dr. Simpson testified: "[b]ased on this, I inferred that you cannot assume that a company competes on an equal footing with established firms simply because it has completed one project." (Simpson, Tr. 3276).

440. [
]. (Simpson, Tr. 3265 (citing to CX 86 at CH002617; CX 1163 at CBI-H001114, *in camera*)). Dr. Simpson concluded that buyers of pressure spheres do not regard ATV as a good substitute for CB&I (Simpson, Tr. 3277).

441. Foreign LNG tank suppliers, such as Skanska/Whessoe, and partnerships between foreign LNG tank suppliers and domestic firms, such as AT&V/TKK and Technigaz/Zachry, cannot replace PDM because these firms have higher costs and lack the experience necessary to effectively compete against CB&I for LNG projects. CCFF 448-482, 555-7 (AT&V/TKK); CCFF 530-541 (Whessoe); CCFF 542-556 (Technigaz/Zachry).

442. Dr. Simpson testified that Skanska/Whessoe and the partnerships of TKK/ATV and Technigaz/Zachry appear to be best positioned of the possible entrants to compete in the U.S. To the extent that these companies have problems, other possible entrants would have even greater problems. (Simpson, Tr. 3329).

443. Dr. Simpson testified that partnerships between foreign engineering firms and U.S. construction firms would be at a competitive disadvantage when compared with an integrated firm. (Simpson, Tr. 3212-13 (citing to CX 1033 at 4-5)). Dr. Simpson noted that when foreign engineering firms partnered with U.S. construction firms in 1994 to bid for the Memphis LNG peak shaving project, their bids were much higher than those of CB&I and PDM. (Simpson, Tr. 3213-14).

444. Dr. Simpson testified that the economic literature recognizes circumstances where an integrated firm would be more efficient than a loose partnership. (Simpson, Tr. 3214).

According to Dr. Simpson: "In any type of business environment, certain contingencies would arise. With an integrated firm, you have one decision-maker who can look at this contingency and determine how the firm is going to meet it, but if it's a partnership and one of these contingencies arise, they have to look at the contract to see how each party is going to behave under this contingency, and the contract may not specify that, and in that case, they have to sit down and negotiate again. So, what the economic literature says is that integrated firms will be more efficient in this regard." (Simpson, Tr. 3214).

445. Foreign companies have not replaced the competition provided by PDM, and in fact, have not won any LPG tank contracts in the United States for the last decade. (Scorsone, Tr. 2842-43). Among domestic firms, the only firms to have built an LPG tank in the United States since 1990 were AT&V and Morse, neither of whom are able to replace PDM. AT&V lacks the track record and reliability that PDM and CB&I provided, and is not as competitive on quality. CCFF 467. Morse has since been acquired by CB&I and no longer competes. CCFF 529.

446. Firms such as Matrix, AT&V and BSL have sought LIN/LOX business from time to time, but were not significant competitors to CB&I and PDM. These firms have not competed on a regular basis, lack the experience and reliability that PDM and CB&I provided, and are not as competitive regarding pricing or quality. CCFF 512-525; CCFF 448-482; CCFF 483-489.

447. Smaller companies, such as Howard Fabrication and XL Technology Systems lack the size and the capability to replace PDM in the TVC market. CCFF 502-511, 569-570. Mr. Scully of XL Technologies is not aware of any foreign companies that have either supplied or bid on a TVC in the United States. (Scully, Tr. 1147-48).

3. *AT&V Cannot Replace PDM*

448. Respondents cite AT&V as a potential replacement for PDM in the LNG market the LPG market and the LIN/LOX market.

449. AT&V faces numerous problems that make it unlikely to replace PDM as CB&I's closest competitor.

450. [ ] . (CX 460 at CBI-E 007235; JX 23 at Exh. 1 ([ ]); Simpson, Tr. 3292-3315). [ ]. (CX 460 at CBI-E 007235; JX 23 at Exh. 1, *in camera* ([ ]); CX 1033 at 28). CB&I employs approximately 1,000 engineers. (CX 460 at CBI-E 007235). CB&I estimates that AT&V has only a small engineering staff. (CX 460 at CBI-E 007235).

451. [ ]. (Simpson, Tr. 3315 (citing JX 23a at 44, *in camera* ([ ])). Dr. Simpson testified that capacity constraints at AT&V would prevent AT&V from working on as many projects as PDM had worked on prior to its acquisition by CBI. (Simpson, Tr. 3316-7).

452. Respondents' cast a negative image of AT&V in their profile of competitors. A PDM "Competitor Profile" states that AT&V's "quality" and "safety" are "poor." (CX 86 at PDM-CH 002617). Another PDM document notes that on past projects, AT&V "performed poorly in terms of supplying a quality tank or sphere and has not met customer safety standards. Kellogg and Bechtel threw AT&V off projects due to poor quality or poor safety practices. Moreover, in the past, Dupont, Shell-Norco and Exxon (Baton Rouge) would not let AT&V to bid on their projects." (CX 606 at PDM-CH 002617). CB&I describes AT&V's safety practices as "severely lacking ... and are being labeled as an undesirable risk by many." (CX 263 at CBI-HOU-004606).

453. AT&V has recently experienced significant construction problems on-going projects that has customers wary of ever doing business with AT&V. CCFF 466, 477-479.

454. [ ], admits his firm faces reputational and marketing disadvantages compared to Respondents. ([ ], Tr. 2421-22, *in camera*). "[ ] is not a household name for cyrogenic tanks." ([ ], Tr. 2385, *in camera*). [ ] contrasts CB&I by comparing it to the "Coca-Cola" brand-name. ([ ], Tr. 2385, *in camera*). [ ] ([ ], Tr. 2389, *in camera*).

455. AT&V has had financial problems in the past that caused some suppliers to put them on a cash-only basis. (CX 606 at PDM-CH 002617).

456. [ ] ([ ], Tr. 2393-94).
. CCFF 557. [ ] has never built an LNG tank in the United States. ([ ], Tr. 2336, *in camera*).

457. [ ] does not view AT&V as an LNG tank supplier, and concludes that AT&V [ ] first. (CX 691 at [ ] 01 032).

458. It is unlikely that AT&V will be able to effectively replace PDM because PDM & CB&I are able to build larger field-erected LPG tanks than AT&V. (CX 303, CBI/PDM-H 4001285 (CB&I is PDM's "only competition on tanks over 100,000 [barrels])). AT&V's competitiveness is generally limited to "small tanks...$500K & under." (CX 86, PDM-CH 002618).

459. [ ] (CX 397 at 1, *in camera*). [ ] (CX 397 at 1, *in camera* (AT&V tank measured [ ] in diameter and [ ] high, which translates into an approximate volume of [ ] cubic feet, or [ ] barrels.).

460. Large LPG tank projects require substantial engineering work and require several

crews for various tasks, such as procurement, estimating, construction, piping and electrical. (CX 258 at CBI-H001794).

461. Dr. Harris concedes that AT&V has "capacity constraints that would prevent it from building an LPG tank while working on other projects." (Harris, Tr. 7595).

462. Industry participants do not consider AT&V to be a competitive supplier of LPG tanks in the United States. Fluor has not accepted AT&V as a qualified bidder on LPG tank projects. (Warren, Tr. 2309 (Fluor had never considered sole sourcing a field-erected LPG tank from any supplier other than CB&I or PDM.)). Matrix does not consider AT&V as a competitor for LPG tanks. (Newmeister, Tr. 2202 (Mr. Newmeister is "not aware of any [LPG tanks] that [AT&V] ha[s] built.")).

463. Dr. Harris does not think it is accurate to say that "AT&V could constrain CB&I's pricing in ... LPG tanks." (Harris, Tr. 7596).

464. It is unlikely that AT&V will be able to replace PDM in the LIN/LOX market. AT&V performed poorly on recent projects for BOC. CCFF 466 and Air Liquide CCFF 477-479.

465. BOC awarded a LIN/LOX contract to AT&V in 2000 for a LIN/LOX tank in Midland, NC. (RX 290 at CB&I 046596-NEW; RX 291 at CBI-046598).

466. BOC had to budget 500 man-hours of additional BOC engineering time to ensure that AT&V delivered the LIN/LOX tanks "on time, on schedule, on budget"; this was AT&V's first experience building LIN/LOX tanks. (JX 28 at 43-46 (V. Kelley, Dep.); RX 290 at CB&I 046596-NEW).

467. Dr. Kistenmacher of Linde BOC testified that AT&V has "a very poor track record." (Kistenmacher, Tr. 862). Although AT&V originally quoted a very low price on its projects for BOC, "they had many change orders, [so] that in the end the price was higher than of the conventional vendors." (Kistenmacher, Tr. 932).

468. Mr. Victor Kelley of BOC testified that "there was a design run of pipe [on the BOC project] that could have caused liquid oxygen to settle and then dissipate, creating a hazardous atmosphere in that location." (V. Kelley, Tr. 5269). During the construction, there was also a "welding error" that caused the steel plate that comprises the tank to buckle at a weld joint. (V. Kelley, Tr. 5273-74).

469. Linde BOC Process Plants does not appear likely to purchase LIN/LOX tanks from AT&V in the future. Dr. Kistenmacher testified that AT&V's track record of building "one plant for BOC [and] one for an undisclosed client" is "not sufficient for me" to purchase a tank from AT&V. (Kistenmacher, Tr. 861-2 ("PDM has built many more tanks, many, many more, and it was never a question that PDM didn't have the proper track record.")).

470. Like Linde, [Air Liquide], is unlikely to award future projects to AT&V because of problems with AT&V's performance. CCFF 477.

471. [

] ([ ], Tr. 2235-36, *in camera*).

472. [ ] [ ] admitted, "If PDM were in existence at that time and had a credible and competitive bid, we would have been far less likely to take the risk of developing a new supplier." ([ ], Tr. 2236, *in camera*).

473. [ ] testified that has "not performed well from our perspective," and that "ability to manage a project is far worse than I would have possibly imagined." ([ ], Tr. 2251, 2253, *in camera*).

474. While bid to [ ] specifications, ... it's been very difficult to get them to actually execute to those specifications." ([ ], Tr. 2241; *see also* [ ], Tr. 2241-46, *in camera* (listing other construction problems with [ ]), 2246-47, *in camera* (discussing delays in schedule with [ ]).

475. [ ] has informed AT&V it would not go forward on the [ ] project unless AT&V "conformed to the manufacturer's specifications." ([ ], Tr. 2246).

476. [ ] has refused to agree to provide liquidated damages in the event they do not perform the contract. ([ ], Tr. 2250).

477. Based on its experience on the [ ] project, [ ] has no interest in working with [ ] on any other projects. ([ ], Tr. 2255-56).

478. [Mr. Kamrath] testified that if [ ] terminated [ ], "[t]he only people I'd feel confident in completing this for us is [ ], ... [b]ecause of their technical capability, because of their history, because of our good performance and good relationship we've had with them over many years." ([ ], Tr. 2252).

479. [ ] recently asked [CB&I] to take over the project, but CB&I refused. (Scorsone, Tr. 5036).

480. Based on word-of-mouth regarding AT&V's performance on the BOC and [ ] projects, other LIN/LOX customers are reluctant to work with AT&V. Air Products has not qualified AT&V as a LIN/LOX tank supplier, due to its concern over AT&V's performance and poor reputation. (Cutts, Tr. 2355-56; Hilgar, Tr. 1369).

481. [ ], of [ ] testified that he would have concerns about working with AT&V on a LIN/LOX project. ([ ], Tr. 472, *in camera*). [ ] further testified that "[

]" ([ ], Tr. 472, *in camera*); *see* CX 41 at CBI-E 007336, *in camera* (August 2001 report by CB&I salesman stating that [ ] [ ]).

482. AT&V has never constructed a TVC. (Cutts, Tr. 2334).

4. *BSL Cannot Replace PDM*

483. BSL has never built a tank in any of the relevant product markets in the United States. CCFF 136, 146, 151, 164, 172, 180, 192. (Hilgar, Tr. 1380).

484. Because it is based overseas, CB&I observed that it is difficult for BSL to build tanks cost-effectively in the United States. (*See* CX 164 at CBI-PL006714 ("BSL can supply very good material at a very competitive price from their shop in France but their field cost are outrageous.")).

485. On a LIN/LOX project in Baytown, Texas, BSL's price was "very high," more than 10% over the third-highest bid. (CX 608 at CBI-PL023631).

486. Mr. Fan testified that, in a 1999 bid, BSL's price was "more than 15% higher" than PDM. (Fan, Tr. 954-5).

487. In response to Air Products' request that BSL lower its pricing for U.S. projects, BSL developed an arrangement with InterFab, a U.S. construction firm. (Hilgar, Tr. 1379-80). Under this arrangement, BSL would design, manufacture and ship the tank components from France and InterFab would perform the field erection of the tanks in the U.S. (Hilgar, Tr. 1378-79).

488. BSL bid on a LIN/LOX tank project for Air Products in partnership with InterFab. (Hilgar, Tr. 1378-79). BSL's pricing on this project was off "by 30 percent, something higher or close to that 20 percent." (Hilgar, Tr. 1379). BSL's arrangement with InterFab "did not provide an economically viable solution" for Air Products. (Hilgar, Tr. 1378-79).

489. After the bidding experience with InterFab, BSL stopped submitting bids to Air Products for LIN/LOX projects in the United States. (Hilgar, Tr.1380)). BSL has exited the U.S. LIN/LOX market. (Harris, Tr. 7323).

5. *Chart Industries Cannot Replace PDM*

490. Prior to the acquisition, Chart Industries partnered with PDM on some TVC projects. (Higgins, Tr. 1269-70).

491. Chart has never built an LNG, LIN/LOX or LPG tank in the United States. CCFF 136, 146, 151, 164, 172, 180, 192.

492. According to Mr. Higgins, the President of the Chart division that supplies the systems and equipment attached to TVCs, Chart is not "capable" of field-erecting a TVC by itself. (Higgins, Tr. 1266-67).

493. Chart is not interested in supplying TVCs. (Higgins, Tr. 1267, 1272). It wants to partner with an experienced chamber builder and considers CB&I as "[t]he only experienced players out there at this time." (Higgins, Tr. 1272).

494. [

] (CX 242 at CBI-PL 4003340, *in camera*).

6. *Chattanooga Boiler & Tank Cannot Replace PDM*

495. Chattanooga Boiler & Tank ("Chattanooga") cannot replace PDM as a competitor in the LIN/LOX market. Chattanooga is unable to provide LIN/LOX tanks at pre-merger price levels CCFF 500-501, and industry participants do not consider Chattanooga to be a competitor in the LIN/LOX market. CCFF 501-502.

496. Chattanooga has never built an LNG or LPG tank or a TVC in the United States.[3] CCFF 136, 146, 172, 180, 192.

497. Chattanooga has not built a LIN/LOX tank since at least 1990. (CX 623 at FTC0000399; Stetzler, Tr. 6413-15).

498. Chattanooga has never created any strategic plans or pricing strategy for designing, engineering, fabricating, or erecting LIN/LOX tanks. (Stetzler, Tr. 6421-22, 6426). Mr. Stetzler, Chattanooga's president, testified that the supply of LIN/LOX tanks is "not really a business that we've been participating in" because Chattanooga's marketing staff has told Mr. Stetzler that there isn't "sufficient demand" to enter the LIN/LOX market. (Stetzler, Tr. 6422).

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[3] Chattanooga once built a vacuum facility that is used by NASA to refuel the space shuttle booster engines store. (Stetzler, Tr. 6341). The facility creates a vacuum condition to prevent an explosion during the refueling process. (Stetzler, Tr. 6341). The facility does not support hot or cold temperatures necessary to test satellites, which is the purpose of TVCs. (CX 623 at FTC000400; Stetzler, Tr. 6406).

499. [
]. (CX 189 at CBI-PL015105; [ ], Tr. 457, *in camera* (Chattanooga's price was [ ] higher than [ ]).

500. In discussing how customers would react to Chattanooga, CB&I questioned whether the customer will "trust a 'newbie' firm like CBT to do cryo tanks." (CX 40 at CBI-E007246). An August 2001 report from a CB&I salesman reports that MG Industries "has doubts" of Chattanooga's "abilities." (CX 41 at CBI-E007336).

501. Mr. Cutts of AT&V does not consider Chattanooga as a competitor for LIN/LOX tanks in the United States. (Cutts, Tr. 2333).

7. *Howard Fabrication Cannot Replace PDM*

502. Howard Fabrication is a domestic company that supplies shop-fabricated thermal vacuum chambers and thermal vacuum systems. Howard Fabrication has never supplied, and does not have the capability necessary to supply, a TVC with a diameter greater than 20 feet. (Gill, Tr. 182, 193).

503. Howard has never built an LNG, LPG or LIN/LOX tank in the United States. CCFF 136, 146, 151, 164, 172, 180.

504. Mr. Gill does not consider Howard to be a competitor of CB&I or, prior to the acquisition, of PDM. (Gill, Tr. 195, 201). Mr. Gill does not believe his firm has a "real chance" to win a contract for a TVC. (Gill, Tr. 192; *see* Simpson, Tr. 3514-15 (Howard is not a competitor in the market for TVCs).

505. Mr. Scorsone agreed: supplying a TVC of the size needed by TRW "would be a real stretch for Howard." (Scorsone, Tr. 5061).

506. Although Howard has submitted bids on past TVC projects, it has been eliminated from the final bidding phase. (Gill, Tr. 212). As a result, Mr. Gill does not believe that his pricing had a material effect on competitive bidding. (Gill, Tr. 212).

507. With only $2.5 million in annual revenues, Howard does not have the financial resources to obtain the financial performance guarantee bonds required by customers for large projects. (Gill, Tr. 181; CX 261 at CBI-H004031; Neary, Tr. 1470). A TVC project customer may require a $13.5 million bond to guarantee the completion of the project, and Howard Fabrication cannot obtain such a bond because it does not have the necessary "security or liquid assets equal to about three times of that bond." (Gill, Tr. 199-200). Howard was not even able to obtain a bond of $5 million for a large, shop-fabricated thermal vacuum chamber procured by Aerojet. (Gill, Tr. 234).

508. Howard does not employ any engineers with experience engineering and designing

a TVC. (Gill, Tr. 194-95). To replicate PDM, Howard would need "35-40 engineers with support staff and general administration staff to go along with that; the computerized design equipment for finite element analysis; the construction equipment; the large shop to support that; and, you know, it's a — just a completely different animal." (Gill, Tr. 249).

509. Howard's shop resources only allow it to fabricate chambers with diameters at or below 20 feet. (Gill, Tr. 192).

510. Howard does not own the type of equipment necessary to fabricate and erect a thermal vacuum chamber in the field, such as gantry burners, large plate rolls, annular rolls, post stress treat furnaces, automatic profile blasters, preblast and prime units, large horizontal boring mills, vertical boring mills, shape burning machines, and transportable cranes. (Gill, Tr. 196-97).

511. Mr. Gill of Howard considers gaining the resources and capability that PDM had in TVCs as "a big jump" for his company. (Gill, Tr. 248-249). He described this "big jump" as going from "a couple million dollars in sales to many hundred millions of dollars of sales." (*Id.*)

8. *Matrix Cannot Replace PDM*

512. Matrix is a less experienced and less reliable supplier than either CB&I or PDM for LIN/LOX tanks. CCFF 514-518. Customers and industry participants consider Matrix to be a weaker competitor than PDM, CCFF 519-526, 241. and there is evidence that Matrix's costs are higher than CB&I or PDM. CCFF 156, 524, 403, 1067, 1101-1103, 1108. Therefore, it is unlikely that Matrix will be able to replace PDM in the LIN/LOX market.

513. Matrix has never built an LNG tank or an LPG tank in the United States. (Newmeister, Tr. 1596, 1609).

514. [ ] 2001 analysis of Matrix's competitiveness concluded that "to our knowledge, [ ] has not supplied tanks for LNG or Cryogenic Liquid service especially in the large tanks (100,000 m3 plus) used for the LNG Import Terminals." (CX 691 at [ ] 01 032). "[T]he reality for today is that in the US, [ ] are the leading company in the LNG Tank business and [ ] will need to demonstrate [its] capabilities in this market" first. (CX 691 at [ ] 01 032).

515. [ ]. (CX 705 at 8; Kamrath, Tr. 1987 (Longview, TX in 2001); [ ], Tr. 456-57, *in camera* ([ ]); Fan, Tr. 960-962, 1018 (Farmington, NM in 2002, and "many" other pricing proposals to Linde)).

516. Matrix believes that it has not won these projects either because its pricing has been too high or because the customer did not believe that Matrix was sufficiently qualified. (Newmeister, Tr. 2155-58; Kamrath, Tr. 2000-01; *see also* Hilgar, Tr. 1381-82).

517. Matrix has not been price competitive, and its bids have been too high on recent

projects. (Newmeister, Tr. 2156-58; Fan, Tr. 960-62 (on 2002 project, Matrix bid over $900,000, while CB&I bid $814,000); Kistenmacher, Tr. 860; Fontenot, Tr. 2029 (CB&I was at least 5% below Matrix on Air Liquide's recent Longview, Texas project); [ ], Tr. 457 (*in camera*) ([ ])).

518. Air Liquide's representative testified that Matrix's prices have "never been below what we'd seen from any of the other competitors." (Kamrath, Tr. 2000-2001; *see* CX 289 at CBI/PDM-H4000815)).

519. Since 1996 when it began developing engineering and marketing expertise for the LIN/LOX market, Matrix has designed and constructed only four LIN/LOX tanks. (Newmeister, Tr. 1587).

520. Two major purchasers of LIN/LOX tanks, Air Liquide and Linde, do not consider Matrix experienced enough to qualify it as their LIN/LOX tank supplier. (Fontenot, Tr. 2021-2022 (pre-acquisition, the companies on Air Liquide's "bid slate" included CBI, PDM "and a little bit lower would be Matrix;" "I didn't feel as comfortable ... with Matrix," as the "number of references they had weren't nearly what the other two suppliers had."); Kamrath, Tr. 2022).

521. [ ] testified that, [

] ([ ], Tr. 2253, *in camera*).

522. Air Products, who purchased a LIN tank from Matrix, believes that Matrix has "more limited capacity to produce field-erected cryogenic storage tanks," as compared to CB&I or PDM, and that the former PDM is "much deeper in crews and manufacturing capabilities than Matrix is." (Hilgar, Tr. 1354, 1382-83; JX 25 at ¶ 14 (Hilgar Dec.)).

523. Matrix sold its fabrication facility, known as Brown Steel, in late 2000. (Newmeister, Tr. 1589-90). By losing its fabrication capability, Matrix is required to subcontract the fabrication work for these tanks, and subcontracting could increase Matrix's costs. (Newmeister, Tr. 1569, 1570, 1602 (no company has been a viable LIN/LOX competitor while subcontracting out fabrication); Hilgar, Tr. 1381-1382 (Air Products would require Matrix to become re-qualified if they sold off their fabrication facility)). Therefore, as Mr. Newmeister testified, the sale of Brown Steel could have the effect of diminishing Matrix's competitive strength. (Newmeister, Tr. 1590-1591, 1595; *See* Harris, Tr. 7309 (Matrix's sale of Brown Steel competitively disadvantages Matrix in the LIN/LOX Market)).

524. Matrix cannot replace PDM's presence in the TVC market. (Scully, Tr. 1115-16; Higgins, Tr. 1268-69). Although Chart Industries ("PSD") was planning to use Matrix to fabricate the shop-built chambers for the Raytheon TVC project (Higgins, Tr. 1268-69), Mr. Higgins, the President of the Process Systems Division of Chart Industries, would not partner with

Matrix on a large TVC project because it does not have the capability to engineer and construct these large chambers. (Higgins, Tr. 1267-68).

525. Matrix has not expended any significant resources on developing its capability to engineer and design TVCs. (JX 37 at 89-90 (Newmeister, Dep.)).

9. *Morse Constructors Cannot Replace PDM*

526. Morse Constructors will not replace PDM. Morse is a "niche" player whose ability to compete is restricted to the Northwest. (CX 1485 at MCG-03741 (CB&I assessment of Morse); *see also* CX 1484 at MCG-03746 (CB&I due diligence report)).

527. Morse has never built an LNG or LIN/LOX tank or a TVC in the United States. CCFF 136, 146, 151, 164, 192.

528. Morse built one LPG tank in Ferndale, Washington, in 1994, and Morse has not constructed any low-temperature tank since 1994. (Maw, Tr. 6546-7) Morse also has not bid on another LPG tank, or any other relevant product, in the United States since 1994. (Maw, Tr. 6589).

529. On November 30, 2001, Morse was acquired by CB&I. (Maw, Tr. 6545). As a result, "Morse [will] not compete against another arm of CB&I for an LPG tank." (Maw, Tr. 6661-62).

10. *Skanska/Whessoe Cannot Replace PDM*

530. Skanska/Whessoe has significant competitive disadvantages that make it unlikely Skanska/Whessoe can replace PDM. Skanska/Whessoe has higher costs than PDM that hinder it from offering competitive prices on LNG projects. CCFF 135, 142, 442, 860, 870-880, 883, 903. Whessoe has a reputation for poor quality and reliability. CCFF 537-538, 542.

531. Skanska/Whessoe has never built an LNG, LIN/LOX or LPG tank or TVC in the United States. CCFF 136, 146, 151, 164, 172, 180, 190.

532. The price quoted by Whessoe for the Memphis project in 1994 establishes that Whessoe's prices are substantially higher than Respondents LNG tank prices. CCFF 135, 953.

533. The prices quoted by Whessoe to [ ] in 1998 show that Whessoe's prices are substantially higher than Respondents' LNG tank prices. CCFF 870-878, 880, 883, 903.

534. Since CB&I acquired PDM, the price quoted by Whessoe to Dynegy show that Whessoe's prices are substantially higher than CB&I's LNG tank prices. CCFF 991, 1000-1001.

535. Since CB&I acquired PDM, the price quoted by Skanska/Whessoe to CMS

energy for an LNG tank was [ ] than the price submitted by CB&I. ([ ], Tr. 6285, *in camera*).

536. Whessoe, the LNG tank building firm Skanska purchased, has a spotty record constructing LNG facilities. CB&I was chosen over Whessoe for an additional fourth tank on an LNG tank project managed by Enron in Dabhol, India due to concerns about Whessoe's ability to timely complete the original three tanks. (CX 301 at CBI/PDM-H4002566).

537. Dr. Simpson viewed Whessoe's experience building three LNG tanks in Dabhol, India as a negative for Whessoe. (Simpson, Tr. 5751). Dr. Simpson testified: "[J]ust because a project ends up turning out okay doesn't necessarily mean that a company's performance on it was good. The fact that Enron had to assign some of its own people to it and had to kind of sweat out the project for a while I think would be a negative for Whessoe." (Simpson, Tr. 5751).

538. On the Atlantic LNG project in Trinidad, Bechtel precluded Whessoe from bidding on the last of three LNG tanks, although Whessoe had built the first two tanks, citing Whessoe's poor performance during the construction of the first two tanks. (JX 32 at 57-58 (Rapp, Dep.)). "Whessoe did not perform at all well in Trinidad, and Bechtel had to provide substantial project management support." (CX 693 at [ ] 01 028).

539. [

] (CX 135 at CBI 009268-HOU, *in camera*).

540. Only CB&I and PDM submitted bids for the third LNG tank for an expansion of the Atlantic LNG expansion in Trinidad. (JX 32 at 57-58 (Rapp Dep.)).

541. PDM noted Whessoe's historically poor performance in communications with consultants. In August 1999, Luke Scorsone wrote that he expected a potential customer, Unocal, to look favorably upon PDM relative to Whessoe on a project, "given that Noell Whessoe has performed poorly at Trinidad and Dabhol." (CX 115 at PDM-HOU017554). Dr. Simpson testified: "The record indicates that one customer, Bechtel, is not willing to consider them (Skanska); indicates that they've had problems in the past. The competitors of Whessoe are knowledgeable about these problems, and these competitors have an incentive to share the information about Whessoe's poor record with customers, as is indicated by that e-mail from Sam Kumar." (Simpson, Tr. 3329).

11. *[Technigaz/HP Zachry] Cannot Replace PDM*

542. The joint venture formed between [SN Technigaz] and [HP Zachry Construction] to compete on LNG project is unlikely to replace PDM. [Technigaz/Zachry] is not capable of competing against CB&I for the majority of CB&I's domestic LNG work: single-containment tanks. CCFF 547. [Technigaz/Zachry] also lacks the experience and the local knowledge that CB&I possesses and PDM possessed. CCFF 376. In fact,

[Technigaz/Zachry] avoids competing with CB&I for U.S. projects, and does not bid on projects in direct competition with CB&I. CCFF 554-555.

543. [ ] has never built an LNG, LPG or LIN/LOX tank or a TVC in the United States. CCFF 136, 146, 172, 180, 192.

544. The press release announcing the Technigaz/Zachry partnership states only that the partnership will pursue LNG projects and makes no mention of the other relevant products. (RX 35).

545. [ ] ([ ], Tr. 3290-1 (citing *in camera* documents). [ ]. (*Id*.)

546. [ ] admits it is not capable of competing against CB&I for single containment tanks. ([ ], Tr. 4725, *in camera*). [ ], Vice President of Marketing of [ ], testified it is likely that CB&I would have a large advantage over [ ] for single-containment LNG tanks. ([ ], Tr. 4711, *in camera*).

547. [ ] expertise is in concrete construction. ([ ], Tr. 1645-46; [ ], Tr. 4707, *in camera*). [ ]. ([ ], Tr. 1645-6, *in camera*). [ ]. ([ ], Tr. 4724-25, *in camera*).

548. [ ] does not have a sense of the cost of building LNG tanks in the U.S. ([ ], Tr. 4755-56, *in camera*).

549. [ ] added that CB&I would have an advantage in fabrication and erection of inner 9% nickels tank for even a full containment tank. ([ ], Tr. 4721, *in camera*). [ ] employees do not have experience in welding 9% nickel steel. ([ ], Tr. 1629, *in camera*).

550. To compete for LNG projects, [ ] would need to acquire specialized equipment relating to welding, cranes, testing and installation equipment for insulation, all at a significant cost. ([ ], Tr. 1640-41, *in camera*).

551. [ ] of [ ] testified that [ ] would have to depend on less experienced field crews than those to which CB&I has access in the United States. ([ ], Tr. 4713, *in camera*).

552. [ ], who had been closely involved in establishing the partnership between [ ] and [ ], testified that [ ] plans to pursue LNG

projects selectively, with the first criteria being who will be competing against [ ] ([ ], Tr. 1672-73, *in camera*; *see also* [ ], Tr. 4750, *in camera*).

553. [Technigaz/Zachry] has chosen not to bid on recent projects where CB&I is also a bidder. [Technigaz/Zachry] chose not to bid against CB&I for an LNG project in [ ] because "the [ ] part' of the joint venture believed that "CB&I would know more about how to construct that project than we could and that CB&I may be more equipped to perform that project than we would." ([ ], Tr. 1653-54, *in camera*). [Technigaz/Zachry] bowed out of the bidding process, citing that labor and construction issues would make the work "very difficult to perform." ([ ], Tr. 1652-53, *in camera*).

554. [Technigaz/Zachry] also chose not to bid against CB&I on either [ ], [ ], or [ ] for similar reasons. (*See* [ ] Tr. 1659, *in camera*; [ ], Tr. 4749, *in camera*).

555. In [ ], [Technigaz/Zachry] submitting a price for LNG tanks to [ ] but was eliminated from the field because its price was substantially higher than Whessoe and TKK. ([ ], Tr. 4690-91 ([ ] told us to "sharpen our pencil to be more competitive next time"). CCFF 1003. This means that on the [ ] project, [ ] was less competitive on price than Whessoe and TKK, and would have been even less competitive than CB&I [ ]. [ ].

556. [ ] testified that [ ] will stop competing for LNG projects in the United States if it is not successful after 3-5 bids. ([ ], Tr. 4752-53 (*in camera*)).

12. *TKK Cannot Replace PDM*

557. TKK, a Japanese LNG tank builder, has teamed with AT&V to supply LNG tanks in the United States. (Cutts, Tr. 2437-38). Pursuant to this partnership, AT&V will supply the field labor for the erection of the LNG tank and share some of the responsibility for estimating the costs of the project. (Cutts, Tr. 2327-8).

558. TKK will "carry the lead responsibility" for engineering and design of the LNG tank. (Cutts, Tr. 2327). TKK will train AT&V employees on how to construct LNG tanks, including the use of TKK's welding equipment. (Cutts, Tr. 2379). Mr. Cutts anticipates that the newly trained AT&V employees will need several years of experience constructing LNG tanks before they work as efficiently as experienced CB&I employees. (Cutts Tr., 2379-80).

559. Although it has bid on LNG projects, TKK has never built an LNG, LPG, LIN/LOX tank or TVC in the United States. CCFF 136, 146, 172, 180, 192.

560. Based on the prices submitted for the Memphis LNG project, CB&I and PDM have as much as a 59% cost advantage over TKK for U.S. LNG projects. CCFF 952.

561. On the Dynegy project, CB&I's price for LNG tanks (had it submitted such pricing information) would have been substantially below TKK's prices. CCFF 996-997.

562. TKK considers the United States to be "one of the most difficult if not the most difficult" countries in which to operate. (Cutts, Tr. 2340). TKK views forming a corporation, complying with tax laws, OSHA regulations and environmental regulations as overly burdensome and a barrier to entry into the U.S. market. (Cutts, Tr. 2339-40). TKK is "cautious" about supplying LNG tanks in the United States because it "does not find the atmosphere in America to be a user-friendly atmosphere." (Cutts, Tr. 2329-30).

563. The success of the joint venture between TKK and AT&V will depend to a significant extent on the capabilities of AT&V, the local contractor. (Carling, Tr. 4521). "[T]he number one barrier to entry" in the LNG market is the customer's "attitude or appreciation for what you've built in the past and/or what you build in the future." (Cutts, Tr. 2344).

564. AT&V has experienced construction problems and delays on recent projects for other customers that have damaged its reputation. CCFF 473-475; 480-481.

565. Linde believes the TKK/ATV partnership creates an unacceptable level of risk for TKK as AT&V's partner for LNG projects. (Kistenmacher, Tr. 905). (*See* Carling, Tr. 4522-3) (to assess capabilities of AT&V, would examine its track record on similar projects).

566. Dr. Simpson believes that the TKK/ATV partnership is not sufficient to restore the pre-acquisition level of competition. (Simpson, Tr. 3288-9). According to Dr. Simpson, the results of the bidding for an LNG tank project for Memphis Light, Gas & Water indicate that a partnership of TKK and Graver Tank was not competitive. (Simpson, Tr. 3290). Dr. Simpson noted that ATV has less experience than Graver did. (Simpson, Tr. 3290).

13. *XL Technologies Cannot Replace PDM*

567. XL Technology Systems ("XL Technologies") was created in 1995 by Ronald Scully to produce thermal vacuum systems for satellites (Scully, Tr. 1113). CB&I bought the company in 1999 and changed its name to XL Technology Systems, Inc. (Scully, Tr. 1113). CB&I sold the company back to Mr. Scully in 2002. (Scully, Tr. 1113).

568. XL Technologies has never built an LNG, LIN/LOX or LPG tank in the United States. CCFF 136, 146, 172, 180, 192.

569. XL Technologies admits that it is not capable of supplying a TVC without partnering with an experienced chamber supplier such as CB&I. (Scully, Tr. 1118, 1134, 1252; *see* CX 262 at CBI-H004037).

570. On February 28, 2002, CB&I sold its XL Technologies subsidiary to Mr. Scully. (Scully, Tr. 1130). CB&I did not transfer to XL Technologies the assets, engineering know-how,

equipment or personnel necessary to the field-erection of large TVCs. (Scully, Tr. 1133).

L. CB&I's Market Power Extends to All Types of LNG Tanks

571. Respondents argue that a "trend" towards full-containment tanks will enable foreign firms, skilled in building concrete structures, and will erode CB&I's market share and market power. This argument is specious for at least two reasons. First, there is no evidence from FERC – the regulatory agency that decides why types of LNG tanks must be built – that it has mandated a "trend" towards full-containment tanks. CCFF 574. Second, Respondents have as much experience in constructing full-containment tanks as any other firm, and has localized competitive advantages against these firms in the United States. CCFF 358, 377-378 . The recent record of CB&I success in negotiations for full-containment tanks in the United States underscores these competitive advantages. CCFF 578, 585, 586.

572. Full-containment tanks are more likely to be used "[i]f you are closer to population in more of an urban setting or close to an urban setting, full-containment typically is used just for the extra bit of safety it has." (Bryngelson, Tr. 6133).

573. [
]. (RX 157 at [ ] 02 004; CX 124 at PDM-HOU2011156; CX 1075 at CBI-001240-PLA; CX 1161 at CBI/PDM-H4008131-133, *in camera*; JX 23a at 89 ([ ]), *in camera*; [ ], Tr. 4724-25, *in camera*).

574. [

]. ([ ], Tr. 697-98, 727-28, *in camera*; Bryngelson, Tr. 6133). Respondents presented no evidence from FERC that there is a "trend" toward full-containment LNG tanks in the United States.

575. Given a choice, customers will seek the lowest-cost LNG tank to build. (Izzo, Tr. 6523; Kelly, Tr. 6260, 6274-75).

576. CMS Energy, which may shortly begin construction of an LNG tank facility in Louisiana, has received approval for a single-containment tank. (J. Kelly, Tr. 6260, 6271). CB&I will construct the LNG tank for CMS Energy. (Kelly, Tr. 6260).

577. The Dynegy project will consist of a full-containment tank. (Puckett, Tr. 4541). CB&I repeatedly refused to quote a price unless it was awarded the project on a turnkey basis, and ultimately Dynegy did not accept CB&I's price quote because it was submitted too late in the bidding process. CCFF 996.

578. [ ] is likely to purchase a full-containment tank for an upcoming project. (JX 31 at 74 (Sawchuk, Dep.)). [ ] has decided to negotiate for sole-source agreements with CB&I for

this and two other pending LNG projects in the United States. (Glenn, Tr. 4180).

579. [
]. (CX 758 at CBI-PL031543-59, *in camera*; CX 145 at PDM-S 001430-431).

580. Dr. Simpson testified that he believes that an independent PDM would be a strong competitor for full-containment LNG tanks in the U.S. Dr. Simpson based this on the fact that PDM had built full-containment LNG tanks overseas. (CX 145 at PDM-S 001430-001431). According to Dr. Simpson, if PDM could compete on an equal footing in other parts of the world, they should have an advantage in the U.S. where they know the regulatory environment, the subcontractors, and the work force. Dr. Simpson also noted that PDM had built a double-containment LNG tank in Puerto Rico. (Simpson, Tr. 3350).

M. CB&I's Post-Merger LNG Project Wins Show that Other Firms Cannot Replace PDM

581. Respondents contend that entry by foreign and domestic firms will erode CB&I's market share and market power. The evidence of post-merger negotiations for LNG projects in the United States that may be built in the future indicates the opposite conclusion: CB&I is likely to maintain or increase its dominant position in the United States LNG tank market.

582. There are at least 11 new LNG projects in the United States today that are in various stages of development. Depending on business conditions, some or all may never be built. Of these 11 projects, CB&I has won or has the inside track on winning at least six projects (CMS, [ ] (three projects), El Paso, Poten & Partners), a chance of winning in four other projects (Yankee Gas, Freeport LNG, Calpine and Williams/Dominion Resources), and has refused to submit pricing in a timely manner in the 11th project (Dynegy).

583. CMS Energy intends to build an LNG import terminal in Louisiana. CMS Energy has awarded the tank portion of the contract to CB&I. (Glenn, Tr. 4399).

584. [ ] is evaluating the possibility of constructing three new LNG import terminal facilities in the United States. CCFF 832. [ ] has decided to negotiate for sole-source agreements with CB&I for the three projects. (Glenn, Tr. 4180).

585. [
]. (Glenn, Tr. 4177, 4234; CX 1478 at CBI 010191-HOU, *in camera*).

586. CB&I is negotiating a sole-source contract to construct an LNG import terminal for Poten & Partners in the Northeastern United States. (Glenn, Tr. 4399).

587. Yankee Gas is considering entering into a turnkey arrangement with CB&I or CHI. CCFF 1008.

588. In addition to the projects that are being negotiated as, or may become, sole-source arrangements, four other projects are under consideration, but the nature of the bidding process – open competitive bidding or sole-source arrangement – has yet to be decided. The three pending LNG projects are for Freeport LNG, Calpine and Williams. (Glenn, Tr. 4140-2, 4145-8).[4]

589. Because the LNG tank owner has not decided how to structure the bidding process for the LNG tanks, it is unclear who will win the projects.

590. CB&I has at least a 50% chance of winning each project. (Glenn, Tr. 4267; CX 1729 at 9). Mr. Glenn will not allow CB&I to spend "any time or money in projects where we don't think we have a really good chance of winning. I mean, if there are three bidders, it's a 33 percent chance, we'd probably pass on that one. If there are three bidders and we've got a 40 or 50 or 60 percent chance of winning it, we'll go after it." (CX 1729 at 10). CB&I's current "capture rate" is markedly higher than PDM EC's 34% capture rate in 1999, and higher still than PDM EC's 2000 capture rate goal (37%). (CX 94 at PDM-HOU017585).

591. CB&I declined to submit a price quote for the Dynegy project unless Dynegy structured the project as a turnkey project. (Glenn, Tr. 4245, 4247-8). CCFF 984.

N. Respondents' Critical Loss Analysis Is Flawed and Underestimates the Profitability to CB&I of a Price Increase in the Relevant Markets

592. Dr. Harris uses a critical loss analysis to assess whether new entrants collectively can prevent CB&I from exercising market power. (Harris, Tr. 7255-58)

593. [ ] ([ ], Tr. 3817, *in camera*). A critical loss analysis can be used to determine whether a hypothetical monopolist can profitably increase price by 5 percent. (James Langenfeld and Wenqing Li, "Critical Loss Analysis in Evaluating Mergers," *Antitrust Bull.* (2001), at 299-337; Barry C. Harris & Joseph J. Simons, "Focusing Market Definition: How Much Substitution is Enough?," 12 Research in L. & Econ., at 207 (1989); Simpson, Tr. 2993-94).

594. Dr. Simpson testified: "...[A]s the hypothetical monopolist increases price, it earns a higher profit on those units that it continues to sell....[I]t also loses profit because it's not selling as many units as it had before....For the hypothetical monopolist, the price increase is profitable if the additional profit that it gets from getting a higher price on the units that it continues to sell exceeds

[4] It is uncertain whether these three projects will ever be completed. (Izzo, Tr. 6521; Eyermann, Tr. 7043-7044; CX 1607 at 1).

the profit that it loses because it's selling fewer units." (Simpson, Tr. 2994; CX 1639).

595. When the hypothetical monopolist increases price, the profit that it loses on the units that it no longer sells is the difference between the price that it had obtained for those units and its variable costs of producing those units. (Simpson, Tr. 2995). The difference between price and variable cost is sometimes called the contribution margin. (Simpson, Tr. 3017).

596. The size of the contribution margin determines the critical loss, which is the amount of sales that a firm could lose before a given price increase becomes unprofitable. (Simpson, Tr. 2998). A critical loss analysis then compares this critical loss with information about the hypothetical monopolist's likely loss of sales if it were to increase price to determine whether a price increase would be profitable. (Harris, Tr. 7259; Simpson, Tr. 2998-99, 3530).

597. A critical loss analysis could also be used as a tool to measure competitive effects if one is careful and recognizes several important caveats. (Simpson, Tr. 3525-6; Langenfeld, "Critical Loss Analysis," at 299, 313).

598. Dr. Harris, in performing his critical loss analysis to assess whether new entrants can collectively prevent CB&I from exercising market power, makes at least four major errors. He underestimates the critical loss, which is the sales loss that would make a price increase unprofitable for CB&I. (Simpson, Tr. 3527-30; CX 1669). He overestimates the amount of sales that CB&I would actually lose as a result of a price increase. (Simpson, Tr. 3536). He ignores differences between using a critical analysis to define a market and using a critical loss analysis to measure market power within a market. And, he fails to check whether his conclusions are consistent with other evidence. (Simpson, Tr. 3537).

599. Dr. Harris testified that an important step in performing a critical loss analysis involves estimating the contribution margin. (Harris, Tr. 7259). Since the contribution margin is the difference between price and variable cost, estimating the contribution margin requires that one identify a firm's variable costs. (Harris, Tr. 7259; Simpson, Tr. 3004).

600. The concept of variable cost, for the purpose of computing a critical loss, is an economic concept rather than an accounting concept. (Simpson, Tr. 3876). Variable costs are those costs that vary with output. (Carlton & Perloff, at 29; Simpson, Tr. 2995). A cost does not need to vary with every minor increment of output to be a variable cost. (Simpson, Tr. 2997).

601. [ ]. ([ ], Tr. 5774, *in camera*). [ ]. ([ ], Tr. 5774, *in camera*). [ ] ([ ], Tr. 5774, *in camera*). [ ] ([ ], Tr. 5774, *in*

camera).

602. Dr. Simpson performed a critical loss analysis for product market definition. (Simpson, Tr. 2993, 3416-7). Dr. Simpson identified CB&I's variable costs by applying economic theory to information from CB&I executives and from CB&I and PDM documents. (Simpson, Tr. 2999). [

]. (Simpson, Tr. 3017; CX 1641, *in camera*).

603. [

]. (Harris, Tr. 7342, 7900-02; CX 1641, *in camera*). Dr. Harris estimated that variable costs accounted for only [ ] percent of the pre-acquisition price of LNG tanks and only [ ] percent of the pre-acquisition price of LPG tanks, LIN/LOX tanks, and TVCs. (Harris, Tr. 7900-04; CX 1641, *in camera*).

604. Dr. Simpson testified that the differences in their critical loss estimates means that he and Dr. Harris then reach different estimates of what loss of sales would make a given price increase unprofitable. (Simpson, Tr. 3528; CX 1668 (demonstrative)). For instance, Dr. Simpson explained that if variable cost is 85 percent of price, then the initial contribution margin is 15 percent, and a firm could lose 25 percent of its sales before a 5-percent price increase became unprofitable, but, with an initial contribution margin of 33 percent, a firm could lose only 13 percent of its sales before a 5-percent price increase became unprofitable. (Simpson, Tr. 3529).

605. Materials, sublet, freight, and transportation constitute roughly [ ] of the cost of an LNG tank. (CX 539, *in camera*; CX 1641, *in camera*). [

]
(Simpson, Tr. 3004-5; CX 1641, Harris, Tr. 7902, *in camera*). Sublet is the cost of any subcontracts, freight is the cost of shipping the materials to the job site, and transportation is the cost of moving workers to the job site. (Simpson, Tr. 3004).

606. Field erection costs constitute about [ ] of the cost of an LNG tank. (CX 539, *in camera*; CX 1641, *in camera*). Field erection costs are variable. (Simpson, Tr. 3005). CB&I and PDM EC hired construction workers for individual jobs. Gerald Glenn, CBI's CEO stated: "[P]eople in the field operations are -- they come and go as the work comes and goes. So if you need a welder for six weeks, you hire him for six weeks and you terminate him and he's hired again at the next job. So they go from project to project." (CX 431 at 72 (Glenn, Dep.))

607. CB&I and PDM EC documents indicate that employment of construction supervisors depends on the overall level of work at the company (Simpson, Tr. 3005-6; CX 1563).

608. Prior to the acquisition, project management accounted for about [ ] of the total price of an LNG tank. (CX 539, *in camera*; CX 1641, *in camera*). Although CB&I and PDM documents indicate that employment of project managers depends on the overall level of work at the company (CX1563; CX 1033, Simpson, Tr. 3007-10), [ ]. (Harris, Tr. 7902; CX 1641, *in camera*).

609. Prior to the acquisition, fabrication accounted for about [ ] of the total price of an LNG tank. (CX 539, *in camera*; CX 1641, *in camera*). The cost of fabrication represents a variable cost. CB&I and PDM sometimes purchased fabricated steel. (Scorsone, Tr. 4894-5). Where CB&I uses subcontractors for fabrication, the fabrication is "clearly a variable cost," since it "is an expense that they would not have to bear if they did not get the project." (Simpson, Tr. 3011). Using an outside fabricator indicates that in-house fabrication is also a variable cost, since if the company did not do a certain project, that would free up capacity to avoid the expense of subcontracting for fabrication for another project. (Simpson, Tr. 3011). Finally, CB&I changes its fabrication work force in response to changes in workload. (Simpson, Tr. 3012).

610. While respondents' expert, Dr. Harris, acknowledges that the fabrication costs shown in CX 1641 which reflect costs for the [ ] LNG tank are variable, he contends that fabrication is a fixed cost for LPG tanks, LIN/LOX tanks, and TVCs. (Harris, Tr. 7343-44; 7902-03; 7940-41). Such a contention is illogical. If CB&I could fabricate tanks at zero variable cost, they would never subcontract their fabrication. (Simpson, Tr. 3012). Therefore, Harris' conclusion that fabrication is a totally fixed cost is not consistent with CBI's behavior. (Simpson, Tr. 3012).

611. Prior to the acquisition, engineering and drafting accounted for about [ ] percent of the total price of an LNG tank. (CX 539, *in camera*; CX 1641, *in camera*). The cost of engineering and drafting represents a variable cost. Mr. Leventry, CBI's vice-president of technology services, said that CB&I would definitely let go of some engineers if there were a reduction in workload (CX 497 at 63 (Leventry, Dep.); *see also* CX 497 at 38 (Leventry. Dep.) ("people get terminated all the time"). Mr. Scorsone also testified if CB&I lost half of its business across all of its product lines it would make reductions in its engineering department. (Scorsone, Tr. 4910-11). Also, CB&I included engineers in a voluntary retirement offer designed to adjust the size of its workforce to its workload (CX 1033, Simpson, Tr. 3015 (citing CX-497)). [ ]. (Harris, Tr. 7902, CX 1641, *in camera*).

612. Prior to the acquisition, selling, general, and administrative costs accounted for about [ ] of the total price of an LNG tank. (CX 539, *in camera*; CX 1641, *in camera*). Some of this cost would be fixed and some of this cost would be variable (Simpson, Tr. 3016). Dr. Simpson explained: "For instance, there would be some administrative costs

associated with administering a particular project, and if a company does not win that project, they would not have to bear that administrative cost." (Simpson, Tr. 3016-17).

613. Because Dr. Harris relies almost exclusively on Mr. Scorsone to identify variable costs, Dr. Harris incorrectly labels some variable costs as fixed costs. In fact, in at least one instance, Dr. Harris concedes that his reliance on Mr. Scorsone led him to incorrectly label a variable cost as fixed. Relying on his interview with Mr. Scorsone, Dr. Harris initially treated LNG tank fabrication costs as fixed. (Harris, Tr. 7344-45). However, Dr. Harris later acknowledged that, because CB&I purchases its fabricated steel from overseas for its LNG tanks, the fabrication cost for LNG tanks should be treated as variable. (Harris, Tr. 7344). Therefore, Dr. Harris conceded that Dr. Simpson was correct in treating all LNG tank fabrication cost as variable. (Harris, Tr. 7344).

614. After learning that Mr. Scorsone had erroneously classified LNG tank fabrication costs as fixed, Dr. Harris adjusted his critical loss calculation to make it closer to Dr. Simpson's calculation. (Harris, Tr. 7902-04). [

]. (CX 1641, *in camera*). Dr. Harris acknowledged that if Mr. Scorsone is wrong in classifying other costs as fixed, Dr. Harris's critical loss calculation would be incorrect. (Harris, Tr. 7904-05).

615. Additional evidence further indicates that Dr. Harris incorrectly identified some variable costs as fixed costs.

616. Dr. Harris testified that variable cost is a proxy for the actual cost saved as a result of a reduction in sales. (Harris, Tr. 7887). [

] (CX 1641, *in camera*; Harris, Tr. 7902), even though Mr. Scorsone testified that PDM would have incurred <u>none</u> of the cost items of the Cove Point LNG tank if PDM did not build the tank. (CX 535 at 218 (Scorsone Dep.); Harris, Tr. 7905-07).

617. Dr. Harris acknowledged that fixed costs do not increase as the size of the tank increases and that variable costs are affected by the size of the tank. (Harris, Tr. 7923-24). Dr. Harris further acknowledged that variable costs may vary with the complexity of a project. (Harris, Tr. 7924). Also, Dr. Harris acknowledged that while fixed costs generally do not increase if a job schedule is accelerated, variable costs may increase. (Harris, Tr. 7924).

618. Dr. Harris treated all field erection supervision costs as fixed, even though Mr. Scorsone said the number of hours required for field erection supervision depends on the size, specifications and complexity of the project. (Harris, Tr. 7907).

619. Dr. Harris treated all project management costs as fixed even though the number of project management man-hours required for a job depend on the size and complexity of the project and the number of subcontractors that have to be managed. (Harris, Tr. 7946-47).

620. Dr. Harris treated all engineering costs as fixed even though the number of engineering man-hours required for a project depends on the size, specifications and complexity of the project. (Harris, Tr. 7907, 7934 (Larger jobs have a higher engineering content), 7935 ("Q: ... you treat all engineering costs as fixed even though engineering costs for a large tank are greater than engineering costs for a small tank? A: Yes, that's correct.")).

621. Dr. Harris treated all drafting costs as fixed even though drafting man-hours are affected by the size and complexity of the tank. (Harris, Tr. 7936-38).

622. Dr. Harris treated all fabrication costs as fixed, for projects other than LNG tanks, even though Mr. Scorsone testified that the number of hours required for fabrication depends on the size, specifications and complexity of the project. (Harris, Tr. 7907). CB&I uses a computer program to calculate the fabrication man-hours of a tank based on the diameter and height of the inner and outer tank. (Harris, Tr. 7938-39). CB&I's fabrication man-hours also vary with the shape and size of the roof and the design of the bottom plates of the tank. (Harris, Tr. 7940).

623. Dr. Harris treated field-erection supervisors and foremen as fixed costs even though, in some circumstances, as a job gets larger, more field erection foremen and supervisors may be added to a job. (Harris, Tr. 7942-43).

624. Finally, Dr. Harris's critical loss analysis, as he has applied it in this case, understates the profitability of a price increase for any relevant project because of the way Dr. Harris has chosen to define fixed cost and contribution margin. Dr. Harris treats personnel and assets as a fixed cost in his critical loss analysis as long as they can be employed anywhere within the company, even though in the accounting sense, the personnel and assets are not fixed with respect to any project or any relevant product. (Harris, Tr. 7981). This ignores the opportunity cost of personnel and assets used to design, engineer, fabricate and construct the products in this case.

625. An opportunity cost is the forgone value of an asset in an alternative use. (Harris, Tr. 7888). Opportunity costs may be included in the actual cost of a product. (Harris, Tr. 7887). In order to justify use, in the production of a product, of an asset that has an alternative use, a profit maximizing firm will set a price for the product that takes into account the opportunity cost of the asset, *i.e.*, what the asset could have earned in the alternative use. D. Carlton & J. Perloff, *Modern Industrial Organization* (3d ed. 2000). at 33-34. (Crain, Tr. 2594; CX 624 (When CB&I had "Idle resources" to utilize, it would bid projects at "negative margins")). Thus, even some costs that appear to be fixed are in fact variable because the underlying asset can be redeployed to alternative uses. *Id*.

626. Dr. Simpson testified: "[I]f you think of a company as having a portfolio of projects that they might be working on, if they assign a worker to one project, that means that the worker cannot work on another project, so there's what's termed an opportunity cost for having a worker on a particular project. If they were to lose a project and they could reassign that worker to another project and do that project instead, then that worker would be variable." (Simpson, Tr.

5774)

627. Because CB&I can redeploy assets and personnel to other markets, it does not lose the contribution margin earned with these assets and personnel if CB&I increases price in any of the markets in this case and experiences a reduction in the volume of sales of the relevant product as a result of the price increase. When CB&I's total volume of work changes, CB&I adjusts its staffing accordingly. (CX 1033 at 32; Scorsone, Tr. 4910-11).

628. Dr. Harris could only identify a few costs that CB&I could not shift to other lines of business or to work outside the United States when its United States TVC business is slow. (Harris, Tr. 7926 ("Engineers move around. Fabrication somewhat but less so. Fabrication – project management can move around. ... Erection management can move around as well")) Dr. Harris could not identify any category of cost that CB&I would have to charge to its United States TVC business irrespective of its level of work in that market. except for some minor fabrication costs. (Harris, Tr. 7928-30). Further, Dr. Harris only identified some local costs relating to field erection and fabrication that CB&I would have to charge to its United States LNG tank business irrespective of its level of work in that market. (Harris, Tr. 7930-32). Dr. Harris made the same observations with respect to CB&I's United States LPG tank business and with respect to CB&I's United States LIN/LOX tank business. (Harris, Tr. 7933).

629. Dr Harris acknowledged in his deposition that a lot of the costs that he characterized as fixed are actually variable when a company is considering large, strategic moves. (Harris, Tr. 7910-11). CB&I's acquisition of PDM and CB&I's decisions regarding how to maximize its profits following the acquisition are large, strategic moves.

630. Mr. Scorsone testified that losing a project would not cause CB&I to alter its staffing. (*See* Scorsone, Tr. 4906. However, this simply means that if nothing changes, i.e., CB&I does not get a new project, its staffing requirements are unaffected. (Harris, Tr. 7912 ("if nothing changes, then I would agree.")) However, taking on new LNG projects would put pressure on CB&I to increase staffing and therefore incur additional costs. As explained by Gerald Glenn, "I don't know that there's enough resources – if all that gets going and LNG projects, I think we'd tax the skilled resources in our business to be able to do that." (CX 1731 at 34; Harris, Tr. 7915-16 (CB&I would probably have to hire some people in order to take on a new LNG project)).

631. After calculating the contribution margin and thus the critical loss, the next step in a critical loss analysis involves estimating the amount of sales that the firm would lose if it increased price and then comparing this estimate to the critical loss. (Harris, Tr. 7258; Simpson, Tr. 3592–30). Dr. Harris made major mistakes in performing this step.

632. Dr. Harris assumed that a price increase would not be profitable to CB&I based on his observation that CB&I has only been awarded "18% of the dollars at risk post merger" projects in the relevant markets since the acquisition. (Harris, Tr. 7342-43, 7358-59). However, Dr. Harris did not examine the volume of sales CB&I would gain if it lowered its price or the volume of sales CB&I would lose if it raised its price. When asked if CB&I would gain sales if it decreased

price by 10 percent in the markets in this case, Dr. Harris responded: "It might. I'm not sure that I can answer that." (Harris, Tr. 7899-7900). Dr. Harris denied that CB&I would experience fewer losses of customers to competitors in the markets in this case if competitors raise their price when CB&I raises its price following the acquisition. (Harris, Tr. 7895). However, Dr. Harris provided no explanation for his conclusion. Dr. Simpson testified that he believes that CB&I would lose few sales if it increased the price of LNG tanks, LPG tanks, LIN/LOX/LAR tanks, and large, field-erected TVCs by 5 to 10 percent. (Simpson, Tr. 3531).

633. A profit maximizing firm will choose the price increase that produces the greatest increase in profits. (Harris, Tr. 7887). Even if a small price increase may not be profitable, a large price increase may nevertheless be profitable. (*Id*.) Dr. Simpson testified that a critical loss analysis, in determining which costs are variable, should consider various possible price increases across all of the markets in the FTC complaint. (Simpson, Tr. 5778-9).

634. Dr. Harris testified that he and his staff prepared a list of LNG, LPG, LIN/LOX, and TVC projects awarded after the acquisition. (Harris, Tr. 7346-7) Dr. Harris then testified that CB&I had lost six of the ten projects on his list and had lost "something like 82 or 83 percent of the dollars available to be won here." (Harris, Tr. 7356-7). [ ] (RX 951, *in camera*) [ ] (Harris, Tr. 7357). Based on his assessment of his list, Dr. Harris claimed that CB&I could not have a cost advantage over the competition. (Harris, Tr. 7356-7).

635. Dr. Harris, however, based his claim on a highly inaccurate and highly distorted compilation of project awards. [ ]. (RX 951; Puckett, Tr. 4557 (Decision on tank supplier planned for October 2002)).

636. While including Dynegy's Hackberry project, on which CB&I did not bid, Dr. Harris failed to include five United States LNG tank projects for which CB&I is currently negotiating contract terms with the customer for a sole-source arrangement. (Glenn, Tr. 4234, 4399).

637. Dr. Harris included Atlantic's Trinidad LNG project as a loss by CB&I and a win by TKK/AT&V, although the project is an LNG ***export*** terminal (not a relevant market) outside of the United States (Glenn, Tr. 4238;), and there is no evidence that AT&V is even involved in the project. (JX 11 at 1).

638. While including the Trinidad project, Dr. Harris excluded El Paso's projects in the Bahamas and at Altamira, Mexico, for which El Paso has selected CB&I as the sole-source supplier, and CB&I is currently negotiating contract terms with El Paso. (Glenn, Tr. 4234).

639. Dr. Harris treated Air Liquide's Freeport, Texas LIN/LOX tank as a win for

AT&V and a loss by CB&I although Air Liquide has found AT&V's performance unacceptable, Air Liquide has requested CB&I to complete the project, and CB&I has refused. (Scorsone, Tr. 5036-7).

640. Dr. Harris treated Raytheon's El Segundo, California TVC as a win by XL/Votaw and a loss by CB&I. Dr. Harris acknowledged that the project is not a large, field erected TVC, but Dr. Harris failed to disclose, in his direct testimony, that Raytheon picked XL for the project when XL was part of CB&I and the bid was accepted by Raytheon in part because CB&I was going to do the job. (Hart, Tr. 384-5, 402, 405; Harris, Tr. 7787-88). Mr. Hart testified that he picked XL because CB&I's technical capability was better than Howard's. (Hart, Tr. 384-5; Harris, Tr. 7788). Mr. Hart further testified that he was not informed that Votaw, rather than CB&I, would build the chamber until well after Raytheon had awarded the contract to CB&I's subsidiary, XL. (Hart, Tr. 405; Harris, Tr. 7790).

641. [

]. (RX 951, *in camera*) [

] (RX 951, *in camera*; Harris, Tr. 7354-5).

642. In using a critical loss analysis to analyze whether CB&I has market power, Dr. Harris ignored differences between using a critical loss analysis for market definition and using a critical loss analysis for assessing market power within a market. Dr. Harris underestimated the profitability of a price increase to CB&I because he failed to take into account the sales diversion between CB&I and PDM and because he failed to take into account price reactions of other firms to a price increase by CB&I following the acquisition.

643. James Langenfeld and Wenquing Li explain that "in a differentiated product market, there are two important adjustments in calculating the firm's critical loss and in estimating the firm's actual loss of sales in the competitive effects analysis, as compared to the critical loss analysis in market definition studies. The first adjustment is to take into account the sales diversion between the merging firms when calculating the critical loss. When the sales diversion between the merging firms is taken into account, the formula for calculating the critical loss must be modified, and more information than the firms' premerger profit margins is needed to calculate the break-even critical loss. The second adjustment is to take into account price reactions of other nonmerging firms in the market in estimating the actual sales loss." J. Langenfeld and Wenquing Li, Critical loss Analysis in Evaluating Mergers, The Antitrust Bulletin, Summer 2001 299, 313. (Harris, Tr. 7893-94).

644. Dr. Harris appeared to be confused regarding the distinctions between use of a critical loss analysis for market definition and use of critical loss in analyzing the effects of an acquisition. Dr. Harris stated that the "question makes no sense at all" when he was asked if it is correct that the terms of sale of all other products are held constant when a critical loss test is used for market definition purposes, even though he acknowledged that he himself had made the statement in an article he had written. (Harris, Tr. 7884-86).

645. Dr. Harris did not recall that Langenfeld and Li instruct, in their article, that in using a critical loss analysis to analyze the competitive effects of a merger it is necessary to take into account the sales diversion between the merging firms. (Harris, Tr. 7892-93). When shown the statement by Langenfeld and Li, Dr. Harris acknowledged that in certain contexts the sales diversion between the products of the merging firms would matter. (Harris, Tr. 7894). Dr. Harris denied, however, that sales diversion matters in this case. (*Id*.)

646. Dr. Harris then stated that he considered sales diversion between CB&I and PDM prior to the merger, but claimed that he could not take it into account after the merger. (Harris, Tr. 7897). This admission by Dr. Harris means that Dr. Harris failed to consider whether following the acquisition, CB&I could profitably increase the price of its tank specification, in any of the markets, and capture a significant portion of any lost sales by offering PDM's tank specification as an alternative. Likewise, Dr. Harris failed to consider whether following the acquisition, CB&I could profitably increase the price of PDM's tank specification and capture a significant portion of any lost sales by offering CB&I's tank specification as an alternative. Dr. Harris simply assumed that a price increase would not be profitable to CB&I without considering the profitability of either of these pricing strategies.

647. CB&I conducts union work through its CB&I Services Inc. and non-union work through CB&I Industrial. (CX 1033 at 8). Following the acquisition, CB&I planned to inform at least one LNG tank customer that it could not choose to have its project performed by a non-union workforce and would have to accept, at higher cost, union workforce job. Previously the choice of union or non-union work had been left to the customer. (*Id*.) However, Dr. Harris could not comprehend that CB&I could increase the price of non-union jobs and pick up some of the loss in sales through its union work. (Harris, Tr. 7918 ("That makes no sense to me at all.")).

648. Langenfeld and Li explain that if other firms in the market increase their price in response to the price increase by the merged firm, the merged firm will lose sales to the other firms in the market only to the extent of the relative increase in its price compared to the price of the other firms: "Accordingly, the merged firm will experience fewer losses of customers to competitors in the market than if all competitors kept their prices constant, and it is more likely that a price increase will be profitable. ... When the price responses of the nonmerging firms in the market are taken into account, the actual loss of sales for a given price increase by the merged firm will decrease." J. Langenfeld and Wenquing Li, Critical Loss Analysis in Evaluating Mergers, The Antitrust Bulletin, Summer 2001 at 319. (Harris, Tr. 7896).

649. Economic theory predicts that other firms will increase their prices if CB&I increases its prices. (Simpson, Tr. 3526; *See* C. Davidson and R. Deneckere, Long-Run Competition in Capacity, Short-Run Competition in Price, and the Cournot Model, Rand Journal of Economics, 17, 1986, 404; Dalkir, Serdar, John Logan, and Robert Masson, "Mergers in Symmetric and Asymmetric Noncooperative Auction Markets: The Effects on Prices and Efficiency," 18 International Journal of Industrial Organization, at 395 (2000)).

650. When asked if he agreed with Langenfeld and Li that the price reactions of other

firms in the market should be taken into account in estimating the actual sales loss, Dr. Harris first claimed that Langenfeld and Li "got it wrong" factually but acknowledged that what they wrote is logically correct. (Harris, Tr. 7894-95). Dr. Harris then claimed that price responses of other firms "has absolutely nothing to do with this case" (Harris, Tr. 7896), but moments later claimed that he had taken into account the price reactions of other firms in conducting his critical loss analysis. (Harris, Tr. 7898 ("Yes, I considered that.")). Despite Dr. Harris's claim, he made no reference to the price reactions of other firms in his various assertions that CB&I cannot profitably increase price. (*See generally* Harris, Tr. 7152-8000).

651. Dr. Harris failed to check whether the conclusion that he drew from his critical loss analysis, that CB&I does not currently have market power, is consistent with CB&I documents and CBI's post-acquisition behavior. (*See generally* Harris, Tr. 7152-8000).

652. Dr. Simpson testified that one could evaluate the competitive effects of an acquisition by examining whether price increased. (Simpson, Tr. 3541-2) According to Dr. Simpson: "[I]f there's a price increase, that would be one type of evidence that would indicate that the acquisition was anticompetitive." (Simpson, Tr. 3542) Dr. Simpson also testified that one could evaluate the competitive effects of an acquisition by examining the competitive strength of the two firms prior to the acquisition and using economic theory to assess how the combination of the two firms would affect pricing in the marketplace. (Simpson, Tr. 3542)

653. Similarly, Dr. Harris testified: "[T]he right way to do critical loss ... is to go find out how the company itself behaves, ... how they behave in the real world and factor that into your critical loss analysis." (Harris, Tr. 7342). However, Dr. Harris failed to follow his own advice. Dr. Harris did not view the evidence of post-merger pricing as demonstrating price increases after the acquisition. (Harris, Tr. 8080 (Cove Point price increase); Harris, Tr. 8089 (Memphis Light, Gas & Water price increase).

654. Dr. Simpson testified that the Bureau of Economics policy for analyzing mergers is simply to apply economic theory and economic methods to the facts in the case. (Simpson, Tr. 5743).

O. Dr. Simpson Established that the Merger Will Likely Lessen Competition

655. "Prior to the acquisition, CBI's pricing was constrained by PDM EC, an equally strong company. When CB&I acquired PDM EC, ... CB&I could increase their price until other firms, such as Technigaz or Whessoe, began to constrain their pricing. But since these other firms were less good they cannot constrain the price as at low a level as PDM EC had." (Simpson, Tr. 3072-3).

656. LNG tanks are sometimes sold through a sealed bidding process. (Simpson, Tr. 3073) "In a sealed bidding process what a bidder tries to do is identify who the other bidders will be, estimate what their costs will be, and then predict what their bidding behavior will be, and based upon having done this, then the bidder in a sealed bid submits the bid that would maximize

their expected profit." (Simpson, Tr. 3073).

657. "[W]hen one strong bidder acquires the other strong bidder, the combined firm is much less concerned about losing, and as a result it may increase its price." (Simpson, Tr. 3073).

658. Dr. Simpson testified that economic theory predicts that if a merged firm increases its price, then other firms in the market will also increase their prices. (Simpson, Tr. 3074). Dr. Simpson cited CX 88 as evidence of this type of behavior in this market. (CX 88 at PDM-CH006397; Simpson, Tr. 3074-6).

659. Dr. Simpson testified that in an environment where bidders submit sealed bids, a three-to-two merger or four-to-three merger can also harm competition. (Simpson, Tr. 3076-7) (citing Dalkir, Serdar, John Logan, and Robert Masson, 2000, "Mergers in Symmetric and Asymmetric Noncooperative Auction Markets: The Effects on Prices and Efficiency," International Journal of Industrial Organization, 18, 383-413, p. 395) Dr. Simpson noted that buyers believe they get better prices with more bidders. As evidence of this, Dr. Simpson cites Mr. Hall's testimony as an example of one customer who will go "to great lengths to increase the number of bidders from two bidders to four bidders." (Simpson, Tr. 3076-7; Hall, Tr. 1801-2).

660. The Dalkir article supports two very general propositions. (Simpson, Tr. 5762). The first is that, in an environment where projects are sold in a sealed bidding process, a merger that combined two bidders would lead to less favorable pricing for the buyer. (Simpson, Tr. 5762-6). The second is that, in an environment where projects are sold in a sealed bidding process, when the merged firm increased its price, the other firms in the market would increase their prices. (Simpson, Tr. 5763). Dr. Simpson testified that the Dalkir, et al. article does not consider a scenario in which the two lowest cost producers merge. (Simpson, Tr. 5764).

661. Dr. Simpson testified that buyers sometimes have information about the costs of other firms (Simpson, Tr. 3077-9, citing to CX 1175, CX 185). In a bidding contest where the various bidders know the costs of competing bidders, economic theory predicts that the lowest-cost bidder would undercut the second lowest-cost bidder by a slight amount and obtain the project at basically the second lowest-cost bid. (Simpson, Tr. 3077). In these cases, a merger of the two lowest-cost competitors in the market means price is set by the third lowest bid rather than the second lowest bid. (Simpson, Tr. 3079).

662. Instances where the second best bidder sets the price do not describe all sales of LNG tanks in the United States, because according to this theory, CB&I should always win if it is the lowest-cost bidder. (Simpson, Tr. 3086-8). According to Dr. Simpson, observations of CB&I losing a project post-acquisition are accounted for by a different type of analysis than oral-auction theory. (Simpson, Tr. 3088). Dr. Simpson testified that the bidding theory also incorporates the idea that a low-cost bidder could occasionally lose a bid. (Simpson, Tr. 3089).

663. Dr. Simpson testified that buyers in these markets may attempt to play the various bidders off against each other in order to obtain lower prices. In these cases, buyers look at bids

obtained for a particular project and then give the various bidders feedback regarding where their bids rank with respect to one another. The bidders then respond by changing their bids. (Simpson, Tr. 3079-3080) (citing to CX 272, CX 192, CX 221, CX 147 as examples)).

664. Dr. Simpson testified that a bidding process where buyers play bidders off against each other can resemble an oral (open-outcry) auction (Simpson, Tr. 3086). In an oral (open-outcry) auction, the lowest-cost bidder wins the bid at a price slightly lower than the second lowest-cost bidder's cost. (Simpson, Tr. 3084-5). In this type of auction, a merger of the two lowest-cost bidders means that the second lowest bid no longer establishes the price. Rather, the third lowest bid establishes the price. (Simpson, Tr. 3085-6). (citing to the Merger Guideline and Tschantz, Steven, Philip Crooke, and Luke Froeb, 2000, "Mergers in Sealed versus Oral Auctions," International Journal of the Economics of Business, 7(2), 201-212.).

665. A PDM document (CX 921) states: [
] (CX 921 at CB&I 003613-HOU, *in camera*). Dr. Simpson testified that this suggests that CB&I "will increase price and earn a higher profit margin and have less sales" post-acquisition. (Simpson, Tr. 3098). Sales decline when prices increase, and, as Dr. Simpson testified, higher profit margins could not stem from efficiencies in this case because efficiencies would cause sales to either stay the same or increase. (Simpson, Tr. 3098).

666. Dr. Simpson testified that makers of liquefaction units, such as Black & Veatch and Lotepro, would be hurt by a reduction in competition for LNG tanks. (Simpson, Tr. 3125). According to Dr. Simpson: "The price for an LNG peak-shaving plant would have two components, the tank and the liquefaction unit and some of the other stuff. So when buyers are looking at purchasing one of these, they look at the overall price. To the extent that the tank component increases in price, that increases the overall price. To the extent that this higher price prompts buyers to purchase fewer of these peak-shaving plants, that would hurt the makers of the liquefaction units. So, ... the makers of the liquefaction units would be concerned about a price increase for LNG tanks." (Simpson, Tr. 3126).

667. Dr. Simpson testified that he believes that CB&I's acquisition of PDM is likely to reduce competition in the LNG market and in each of the other markets alleged in the complaint. (Simpson, Tr. 2984, 3127).

668. Dr. Simpson testified that the acquisition "already has led to higher prices." (Simpson, Tr. 2985). While evidence of actual anticompetitive effect is rare, finding such evidence confirms that the acquisition is likely substantially to lessen competition. (Simpson, Tr. 2989). Dr. Simpson testified that the evidence of anticompetitive harm in this case provides confirmation that CBI's acquisition of PDM reduced competition. (Simpson, Tr. 3149).

669. Because CB&I's business strategy is to sell its tanks in combination with other larger portions of a project, such as process units or import terminals, the likely reduction of competition in LNG tanks will, in turn, affect competition in LNG peak-shaving facilities and LNG import terminals. (Simpson, Tr. 3127, 3149, 3151 (citing to CX 186)). Dr. Simpson testified that

the reduction in competition for LNG tanks would flow over into the other parts of LNG import terminals because CB&I has a preference for selling LNG tanks and the other parts of an LNG terminal together. (Simpson, Tr. 3354). Dr. Harris conceded "If CB&I had market power that would allow them to harm competition in those vertical integration markets ..." (Harris, Tr. 7349).

P. Dr. Harris Overlooked Critical Evidence Inconsistent with His Conclusions

670. Dr. Harris' conclusions and analysis regarding the effects of the acquisition are unreliable because they lack support in the record and are contradicted by unrebutted evidence ignored or rejected by Dr. Harris. Dr. Harris made virtually no reference to CB&I's and PDM's internal documents in his direct testimony and, on cross examination, showed little recollection of the companies' key documents. (*See generally* Harris, Tr. 7152-8000).

671. At trial, Dr. Harris could not identify any CB&I or PDM planning documents that he thought supported his testimony. (Harris, Tr. 7579-80 ("I just can't do it.")). Dr. Harris did not recall pointing to any internal planning documents to support his direct testimony regarding competition in the relevant markets following the acquisition. (Harris, Tr. 7578-79). He was unable to identify any such documents when asked to do so on cross examination. (Harris, Tr. 7578). Moreover, Dr. Harris was unable to identify any CB&I business plan that supports the testimony given by Dr. Harris, by Mr. Glenn or by Mr. Scorsone. (Harris, Tr. 7580-81). Dr. Harris did not ask Respondents to provide to him any of CB&I's post-acquisition planning documents that were not in the discovery record of this matter. (Harris, Tr. 7580).

672. Dr. Harris acknowledged that Respondents' documents showed that prior to the acquisition, competition between CB&I and PDM was intense (Harris, Tr. 7588) and that "they cared very much about competition with each other" (Harris, Tr. 7589). Dr, Harris acknowledged that competition in general put pressure on CB&I to lower its costs. (Harris, Tr. 7588).

673. Dr. Harris was unaware of a statement in PDM's 2000 strategic plan that claimed CB&I as its "only competitor" in cryogenic tanks in the United States. (Harris, Tr. 7554; CX 660). Dr. Harris was unaware of another statement in PDM's strategic plan that stated that prior to the acquisition PDM regarded CB&I as PDM's only competitor in LNG tanks in the United States. (Harris, Tr. 7554).

674. Dr. Harris was unaware of a statement in PDM's most recent strategic plan (2000) that stated that "CB&I is PDM EC's only competitor on domestic cryogenic, LNG, LPG, ammonia and thermal vacuum projects." (Harris, Tr. 7556 ("I was not specifically aware of this sentence."); Harris, Tr. 7568 ("I was not specifically aware of this document. That's not – this statement, this sentence."); *see* CX 660 at PDM-HOU 005016).

675. Further, although Dr. Harris testified that he had conversations with Mr. Scorsone about the case, he stated that did not discuss PDM's 2000 strategic plan with Mr. Scorsone and that it did not occur to Dr. Harris to ask Mr. Scorsone about the document. (Harris, Tr. 7561). Indeed, Dr. Harris never asked anyone about the document. (Harris, Tr. 7564, 7566).

676. In an attempt to reconcile inconsistencies between his conclusions and PDM's strategic planning documents, which recognized CB&I as PDM's only competitor in these markets, Dr. Harris speculated that the document was "just with blinders on" (*i.e.* with the narrow focus on who PDM competed with for current projects when the plan was developed). (Harris, Tr. 7558). However, Dr. Harris admitted , "I don't know why they focused on what they focused on." (Harris, Tr. 7578 ("I don't know why they did that, why they focused back then – I'm *ignorant* of that fact.") (emphasis supplied)). Dr. Harris acknowledged that he did not discuss with anyone from CB&I or PDM his unsupported notion that CB&I's and PDM's internal documents were written with a narrow view of competition. (Harris, Tr. 7566).

677. Dr. Harris acknowledged that Respondents' internal business plans were honest attempts to identify the significant competitive forces faced by Respondents. (Harris, Tr. 7582-83).

678. Dr. Harris failed to recall that, prior to the acquisition, Mr. Scorsone expected that a combination of CB&I and PDM would enable the combined firm to increase price and margins. (Harris, Tr. 7491 ("I don't specifically remember that.")).

679. Dr. Harris testified at length regarding his perception of the competitive environment faced by CB&I following the acquisition. (*See* e.g. Harris, Tr. 7356-7). However, when asked about CB&I deleting, following the acquisition, references to competition in the mandatory disclosure of risks in its S-1 SEC filings and prospectuses, Dr. Harris responded, "I don't remember precisely what they did in their filings." (Harris, Tr. 7497).

680. Further, Dr. Harris acknowledged that he did not remember the details of CB&I's October 31, 2002 conference call with financial analysts in which CB&I executives recounted CB&I's competitive environment. (Harris, Tr. 7862-63; CX 1731 at 44). When confronted with the statements by Mr. Glenn regarding the competitive environment in which CB&I operates, Dr. Harris acknowledged that CB&I's statements to investors are "not consistent with [Dr. Harris's] view of the market." (Harris, Tr. 7867-68 ("that's not consistent with my understanding of the market."); CX 1731).

681. When asked about CB&I management's recent statement to CB&I's investors that CB&I is well-positioned to capitalize on a major share of the LNG tank market, Dr. Harris responded, "I don't recall the specifics." (Harris, Tr. 7852; CX 1731 at 12; CX 1729 at 9). When confronted with the public statement by Mr. Asherman, CB&I's executive vice president and chief marketing and sales officer, the Economist stated that he did not know what the term "capitalize on market share" meant and thus could not comment on whether he agreed with Mr. Asherman's statement. Dr. Harris did not ask the CB&I executive what he meant by the statement. (Harris, Tr. 7853). Dr. Harris did not recall Mr. Asherman's further statement to investors, on July 17, 2002, that CB&I does not see any significant shifts in the marketplace in which it operates. (Harris, Tr. 7882-83; CX 1729 at 10). However, Dr. Harris acknowledged that the CB&I executive's statement is "not consistent with my understanding." (Harris, Tr. 7883).

682. Dr. Harris had only a vague recollection of Mr. Glenn's statements to investors that "LNG tank projects are driving CB&I's backlog" and that the CB&I "prospect list and the projects CB&I is tracking look better to CB&I today than at any time [since CB&I became an independent company]." (Harris, Tr. 7853; CX 1731 at 24, 28).

683. Dr. Harris had only a vague recollection of PDM EC's determination in January 2000 to bid a very competitive price on the Cove Point LNG tank because PDM knew that it would be bidding against CB&I for the project. (Harris, Tr. 7843; CX 293 at CBI/PDM-H 4008141). When asked about PDM increasing its proposed bid for the Cove Point LNG tank after signing the letter of intent with CB&I, Dr. Harris confessed: "I don't remember every little price, ... I don't remember the details." (Harris, Tr. 7498).

684. When asked whether PDM had provided a firm, fixed price to Boeing prior to the acquisition, Dr. Harris responded, "They ***may*** have. I don't remember that clearly." (Harris, Tr. 7504). When asked whether, following the acquisition, CB&I increased by over 50% its margin on the Spectrum Astro TVC contract, Dr. Harris responded, "I remember general facts ... But I don't remember the numbers, so I can't answer your question with any specificity."(Harris, Tr. 7506).

685. When asked whether, prior to the acquisition, PDM provided firm prices $^{+}/_{-}$ 5% when requested by Linde BOC Process Plants LLC, Dr. Harris acknowledged: "I don't remember one way or the other." (Harris, Tr. 7508-9).

686. In presenting his analysis and opinions regarding the competitive effects of the acquisition, Dr. Harris overlooked significant testimony regarding non-competitive behavior by CB&I and PDM during the pendency of the acquisition. When asked about CB&I and PDM suspending fractious or unruly competition in TVCs after entering into the acquisition letter of intent, Dr. Harris stated: "I'm unaware of such an instance." (Harris, Tr. 7466).

687. Dr. Harris bases his conclusions regarding entry and competitive effects in the LNG tank market primarily on his observations regarding Dynegy's Hackberry LNG project. His testimony reveals a misunderstanding on his part regarding what happened in the Dynegy project and serious flaws in his analysis of entry and competitive effects.

688. Explaining his conclusion that competitors in the United States LNG market have changed since 2001 (Harris, Tr. 7220-23), Dr, Harris noted that CB&I has "clearly lost the Dynegy job." (Harris, Tr. 7223). Dr. Harris testified at length about the significance of this "loss" in his analysis. Dr. Harris testified that the Dynegy project represents "a natural market experiment." (Harris, Tr. 7263).

689. Dr. Harris bases his critical loss analysis on CB&I losing the Dynegy project. (Harris, Tr. 7263 ("I looked at critical loss and have determined that CB&I has lost more – way more business than they could have afforded to lose even if they had tried a price increase.... ")). He concluded from CB&I's "loss" of the Dynegy project that CB&I must not have lower costs

than foreign firms. (Harris, Tr. 7264 ("If . . . CB&I is the lowest-cost producer . . . CB&I should have been able to win this job and be able to win it – well, just win the job.")).

690. Dr. Harris infers that CB&I cannot have lower costs, in the United States, than foreign LNG suppliers, because, according to Dr. Harris, Dynegy would be taking a risk of losing multiple millions of dollars by not accepting CB&I's tank bid if the other bidders were not competitive. (Harris, Tr. 7349-50).

691. None of the conclusions Dr. Harris draws from his Dynegy "natural market experiment" has any validity. CB&I did not lose the Dynegy project; CB&I declined to bid. Apparently recognizing that Dr. Harris had stretched the facts, Respondents asked Dr. Harris, at the conclusion of his direct testimony, for clarification of his statement that CB&I "lost" the Dynegy project. (Harris, Tr. 7347-48). He acknowledged that the term "lost" may be inappropriate, but he failed to explain how the various conclusions he had testified to based on what he had perceived to be CB&I's "loss" of the Dynegy project, would withstand CB&I's failure to bid on the project. (*Id*.).

692. When asked whether CB&I declined to bid separately for front-end engineering and design services for Dynegy's Hackberry LNG project, Dr. Harris responded, "I'm not sure. I get the FEED and the EPC issues confused." (Harris, Tr. 7511-2).

693. Dr. Harris concluded that the Hackberry project was an unacceptable loss to CB&I, but he failed to factor into his analysis of his natural experiment regarding the LNG jobs not taken by CB&I the statement by Mr. Glenn that CB&I would not object to some slowdown in the pace of new LNG projects. (Harris, Tr. 7862-63; CX 1731 at 37).

694. Based on his flawed observation that Dynegy was happy with the other bidders, Dr. Harris concluded that CB&I has no ability to exercise market power. (Harris, Tr. 7349). However, Dr. Harris acknowledged that Dynegy "on its own" does not itself have the expertise to analyze the bids on the Hackberry project and make an informed selection. (Harris, Tr. 7794-7796). Accordingly, Dynegy hired Black & Veatch to evaluate the bids. (Price, Tr. 609-10; Harris, Tr. 7796). Dr. Harris did not remember that Mr. Price, Dynegy's engineering consultant from Black & Veatch, testified to his belief that competition between CB&I and PDM EC would have produced more favorable terms than those offered to Dynegy by other bidders. (Harris, Tr. 7796; Price, Tr. 622, 626-28, 630).

695. Dynegy cannot ignore the rules it has established for competitive bidding of the Hackberry project, because doing so would discourage competitive bidding on future Dynegy projects. Dr. Simpson testified: "There are reasons why Dynegy would not be willing to accept a late bid even if Dynegy thought that the late bid might end up being lower, the reasons being that Dynegy would do business with vendors in the future, and if it looks as if Dynegy is willing to bend their rules in one case, that this could have adverse effects in their dealings with other firms." (Simpson, Tr. 3338). Dr. Simpson also testified: "Another reason why a buyer would be - might be reluctant to accept a late bid is that the late bidder hadn't complied with the way the buyer

wanted things done initially, and to the extent that the buyer thought that might indicate that the person submitting the late bid would not follow the buyer's instructions in other areas, . . . that would be a basis for why the buyer would be reluctant to purchase from that late bidder." (Simpson, Tr. 3341-2).

696. Further, Dr. Harris's conclusion that not accepting a delinquent bid from CB&I cost Dynegy at the risk of losing "multiple millions of dollars" if CB&I was the lowest cost producer is based on the unfounded assumption that CB&I would have bid its cost. (Harris, Tr. 7349-50). If CB&I had bid on the tanks, it would have maximized its profit by bidding at a price just below the cost of the other bidders. *Merger Guidelines* § 2.21 n.21; (Simpson Tr. 5762).

697. The other "natural market experiment" relied on by Dr. Harris to support his conclusions with respect to the U.S. LNG tank market is also based on a misinterpretation of the evidence by Dr. Harris. Dr. Harris misconstrued the results in Trinidad to speculate that prices have not changed in Trinidad and that foreign firms are able to "compete with a cost structure similar or better than CB&I." (Harris, Tr. 7351). Dr. Harris ignores CB&I's price increases for materials and other cost escalations. (JX 11 at 1). ***After*** adjusting for changes in cost between the third and fourth tank, CB&I increased the price of the Trinidad LNG tank by 5-6 percent. (*Id*., emphasis supplied).

698. CB&I is likely to have increased its margin on the fourth tank by more than [ ] percent. CB&I's actual costs in performing the work would be reduced as compared to its costs for the third tank because its engineers, project manager, supervisors and foremen were familiar with conditions at the site and conditions in Trinidad, CB&I had a skilled LNG tank crew in place, and CB&I had already transported equipment to the site. (Harris, Tr. 7801-03). However, Dr. Harris did not examine CB&I's failure to pass through its cost savings on the fourth LNG tank in Trinidad (Harris, Tr. 7801-03 ("I didn't do that analysis.")), but acknowledged that CB&I would have been more likely to have won the project if it had chosen to pass through its cost savings. (Harris, Tr. 7808-09).

699. Dr. Harris contradicted himself in his testimony regarding pricing of LNG tanks in Trinidad. In his direct testimony Dr. Harris claimed to compare the prices of the third and fourth LNG tanks in Trinidad and testified that the results are "strong evidence that prices . . . have not changed in LNG." (Harris, Tr. 7351). However, on cross examination, when asked whether he was aware that CB&I had increased the price of the fourth tank in Trinidad by 15% over the price of the third tank, Dr. Harris disavowed his previous testimony, stating that "[i]t does not make sense" to compare prices on different LNG projects (Harris, Tr. 7798-99) and that if he had done so in his direct testimony he "should have been saying margins" (Harris, Tr. 7800; Harris, Tr. 7803 ("I meant to say 'margin,' but I may have said 'prices' inadvertently.")).

700. Despite his testimony, Dr. Harris examined neither CB&I's bids nor CB&I's estimates on the third and fourth tanks in Trinidad and did not even ask Respondents to show him its bids or estimates on the two projects. (Harris, Tr. 7807-08).

701. Although Dr. Harris claimed that CB&I's loss of an LNG tank project in Trinidad is relevant to analysis of the effects of the acquisition in the United States, he failed to consider El Paso's selection of CB&I as the sole-source supplier for an LNG tank in the Bahamas and for an LNG tank in Altamira, Mexico. (Harris, Tr. 7676-77; Glenn, Tr. 4234).

702. The "natural experiments" relied on by Dr. Harris are specious. The results observed by Dr. Harris are under CB&I's control and influence, and Dr. Harris misinterpreted the facts in examining the results. Dr. Simpson testified that he did not view post-acquisition events in the markets named in the FTC's complaint as a natural experiment because CB&I could control the outcome of the "experiment." (Simpson, Tr. 5758).

703. Other experiments Dr. Harris could have conducted, but failed to examine, confirm the anticompetitive effects of the acquisition: Did competition between CB&I and PDM cause prices to fall prior to signing by CB&I and PDM of the acquisition letter of intent? (Harris, Tr. 7839, 7840). Would CB&I and PDM cease fractious competition after signing the acquisition letter of intent? (Harris, Tr. 7646). Would CB&I invite a competitor to coordinate on a bid following the acquisition? (Harris, Tr. 7647-48). Would PDM increase the price of the Cove Point LNG tank after signing the acquisition letter of intent? (Harris, Tr. 7648-51, 7839-40). Would CB&I increase the price of the Cove Point LNG tank following the acquisition? (Harris, Tr. 7652-53, 7840). Would CB&I increase the price of large, field-erected TVCs following the acquisition? (Harris, Tr. 7654-55).

704. Dr. Harris did not recall that Mr. Glenn had recently acknowledged praise for the market discipline CB&I has demonstrated during the past two years. (Harris, Tr. 7857-58; CX 1731 at 42-43). Dr. Harris concluded that increased price discipline by CB&I following the acquisition is not relevant to this case. (Harris, Tr. 7860).

705. Despite his speculation that CB&I does not have lower costs than the firms with which it competes following the acquisition, Dr. Harris acknowledged that he did not have any basis to either agree or disagree with the recent statement by CB&I's CEO that "because of our concentration on lowering our costs and keeping our costs down, we can still be low bidder and make more money on it than most of our competitors, if not all of them." (Harris, Tr. 7862). Dr. Harris did not even recall Mr. Glenn's statement that "we think that short of somebody coming in, which they do, and just taking a big dive on the price that we can win the work every time technically. And if they want to dive in and take the work for less than they can execute it for, that's fine. We'll just sit and watch them go out of business, too." (Harris, Tr. 7865-66; CX 1731 at 44-45).

706. When pressed to state whether he agrees with CB&I's CEO that CB&I can win LNG projects every time unless someone offers a price below its cost of doing the work, Dr. Harris acknowledged that Mr. Glenn's statement is not consistent with Dr. Harris's assumption regarding costs. (Harris, Tr. 7867-68 ("That's not my understanding.")).

707. Dr. Harris repeatedly avoided giving direct answers to questions. Dr. Harris

equivocated when asked if he agreed with CB&I's CEO's statement that "for sophisticated projects like LNG projects and LNG tanks customers don't want to take a chance on a low price and a potential second-class job or shoddy welding or any of that kind of stuff." (Harris, Tr. 7868; CX 1731 at 44). Only when pressed by the Court to give a non-evasive answer did Dr. Harris acknowledge "[t]hat's consistent with my understanding." (Harris, Tr. 7869).

708. Dr. Harris could not say whether he agreed or disagreed with Mr. Glenn, and claimed that he lacked sufficient context to make any sense of Mr. Glenn's August 1, 2000, statement to investors, that "in some of the larger projects we don't have as much competition and it utilizes more resources and with our cost structure we can still be very competitive and make up good returns, so we are not out buying projects, the margins in our work coming in, including the large projects, are as good or better than the margins that you're seeing now." (Harris, Tr. 7874-76; CX 1730 at 30). However, Dr. Harris did not ask Mr. Glenn what he had in mind when he said "we are not out buying projects." (Harris, Tr. 7876).

709. Dr. Harris drew unsupported parallels between the facts of this case and facts in prior cases on which he had worked. In his direct testimony Dr. Harris represented: "The Baker Hughes case I think is very, very close in facts to this case." (Harris, Tr. 7166). However, when confronted on cross examination, with the stark and significant differences between the record in this case and the record in *Baker Hughes* (Harris, Tr. 7467-525), Dr. Harris acknowledged, "I've thought often over the years about the logic of that case, so I have thought a lot about it, but I have not thought about the facts – the detailed facts of that case probably in ten or fifteen years." (Harris, Tr. 7478-79). When confronted with one fundamental difference in the facts, the court's finding in *Baker Hughes* that the market in that case was mainly an import market, Dr. Harris simply acknowledged: "They may have. Most of the purchases were of imported rigs, but I don't remember one way or the other exactly what the court said." (Harris, Tr. 7479).

Q. Industry Members Are Concerned that the Merger Will Likely Lead to Higher Prices and Poorer Quality

710. Based on his experience in soliciting bids for the construction of an LNG tank to store liquid methane, Mr. Eckhard Blaumueller predicts that CBI's acquisition would lead to higher prices. (Blaumueller, Tr. 281-282, 323-324).

711. Since the acquisition, [ ] has noticed that CB&I fails to "show signs of wishing to reduce costs or schedule through technical innovation." (CX 693 at [ ] 01 027). CB&I is reticent to consider "novel tank concepts that do not require welded steel plate." (CX 693 at [ ] 01 027)

712. Robert Davis of Air Products stated that, if Air Products cannot partner with CB&I to compete on LNG projects, that "would make it more difficult for us to compete successfully with them... [W]e couldn't find another domestic tank builder with their experience and their market presence." (Davis, Tr. 3199-200). "To my knowledge, today, the LNG tank supply would be CBI." (Davis, Tr. 3198).

713. Mr. Cleve Fontenot, VP of Air Liquide, testified that "The reason we felt that there would be a cost increase to Air Liquide is that less competitive situation on similar type of major equipment where we have seen constriction of markets in the past, we have seen some price increases, to us at least." (Fontenot, Tr. 2031).

714. John Gill of Howard Fabrication testified that the post-acquisition pricing for these chambers "can't be as good" as when two suppliers are competing for these projects. (Gill, Tr. 211). Mr. Gill further testified that "[w]ith the lack of a second competitor in the market, I'm sure [customers of TVCs] are not better off." (Gill, Tr. 249).

715. Clay Hall testified that Memphis Light, Gas & Water is concerned that prices will rise "[b]ecause we don't see anyone out there with experience that could come into the market and compete with CB&I/PDM ... in the United States," and because Memphis does not know "where we're going to get competition for our bids in the next few years." (Hall Tr. 1830).

716. Even if a new company were to enter the market, Mr. Hall remains concerned because "[t]here's a long time between these projects, they're highly specialized, and even if additional firms come into this market, it would be our concern that they wouldn't be able to exhibit the depth of experience that these firms provide." (Hall, Tr. 1831).

717. Joseph Hilgar of Air Products believes that the price of cryogenic storage tanks will increase as a result of the acquisition. "I would think that you remove a competitor ... from a marketplace that had three to four bidders in our business, it's my estimation the price could go up, yes." (Hilgar, Tr. 1353; *see also*, JX 25 at ¶ 14 (Hilgar Aff.) ("If CB&I purchases PDM, I believe that the price of field-erected cryogenic storage tanks will increase, because one of the low-cost, preferred bidders will be removed from the market.")).

718. David Kamrath, CEO of Air Liquide Process and Construction, testified that "The concerns were that with Graver/Iteq going out of business and CB&I acquiring PDM, there was only one viable tank supplier left in the industry." (Kamrath, Tr. 1991). Mr. Kamrath also described why that was a concern for Air Liquide: "When there's only one supplier, the concern will always be that there's no constraint on pricing, there's no competition, and the pricing will have a tendency to rise." (Kamrath, Tr. 1991; *See* Fontenot, Tr. 2025).

719. Dr. Hans Kistenmacher, vice-president of Linde BOC Process Plants, testified that his company is concerned that "our choices of qualified vendors has been dramatically limited to one vendor, and relative to my experience in the industry, that means we have less competition, and less competition in my view always leads to higher prices." (Kistenmacher, Tr. 878)

720. Patrick Neary of TRW testified that TRW estimates that, post-acquisition, "the growth [in price] would probably be a 50 percent increase in the future." (Neary, Tr. 1456-57).

721. Mr. John Newmeister, president of Matrix, testified that CB&I's acquisition of

PDM is likely to increase prices of LPG tanks because "when a customer knows in the tank business that they have limited competition, they raise their price. They adjust to the market conditions to increase the maximum profitability." (Newmeister, Tr. 2203).

722. [

]. ([ ], Tr. 701, *in camera*). [ ] testified that the [ ] was supplied by CB&I on a sole-source basis cost that was [ ] more than comparable facilities, [

] ([ ] , Tr. 720-21, *in camera*).

723. [ ] also testified that LNG facility owners are "[concerned about being able to find other tank manufacturers and LNG facility constructors that can provide the same services in the U.S., and they're concerned about costs and customer service basically.]" ([ ], Tr. 725, *in camera*).

724. Michael Patterson, Director of Engineering at MG Industries, [

]

([ ], Tr. 476, *in camera*).

725. Brian Price of Black & Veatch testified that "the lack of a domestic supplier that we can go to bid with on a peak-shaving unit that includes a tank puts us at a disadvantage to compete on that project." (Price, Tr. 636).

726. Ronald Scully, who was a CB&I employee at the time of the acquisition, testified that the acquisition may lead to higher pricing for TVCs. (Scully, Tr. 1181).

727. David Thompson of Spectrum Astro testified that the acquisition of PDM removed one of "two vicious competitors." (Thompson, Tr. 2099).

728. The concerns of industry participants verifies Dr. Simpson's testimony that post-acquisition, prices of the relevant products are likely to increase because CB&I's pricing is "constrained by much weaker competitors and constrained at a higher price." (Simpson, Tr. 3406). If past competition between PDM and CB&I led to lower prices for the relevant products "then the elimination of that competition should enable the merged firm to set a higher price." (Simpson, Tr. 3406, 3501).

R. CB&I and PDM Recognized that the Merger Would Reduce Competition and Lead to Higher Margins and Prices

729. Respondents' merger planning documents and testimony at trial illustrate CB&I's own belief that PDM's demise created an opportunity for CB&I to raise prices and margins in the United States. CCFF 730-749.

730. [

]

(CX 213 at CBI-PL033037, *in camera*). [

] (CX 213 at CBI-PL033084, *in camera*).

731. PDM also assessed the benefits of acquiring CB&I in 1999, and determined that acquiring CB&I would give PDM "Market dominance in Western Hemisphere." (CX 74 at PDM-C 1005941). Scorsone admitted that when he wrote the document he believed PDM could achieve "market dominance" by acquiring CB&I. (Scorsone, Tr. 5169).

732. In August 2000, CB&I and PDM agreed to merge, thereby transforming aspirations of "market dominance" and creating a "competition void for 1-3 years" into reality. (CX 79 at PDM-C 1002684).

733. Gerald Glenn saw the merger as a "once-in-a-lifetime opportunity." (CX 1627 at 133; Glenn, Tr. 4271-4272). Glenn added that the acquisition could provide "the next major step in our announced strategy to achieve significant growth in sustainable revenue, profitability and shareholder value." (CX 79 at PDM-C 1002684).

734. At PDM's offices, in August 2000, PDM began to analyze the benefits of the merger. In a document titled "Benefits of Combining PDM with CBI," PDM listed the following benefits: (1) "Dominance of the cryogenic (LNG/LOX/LIN) markets;" and (2) "Allows CBI to have a low cost USA tank producer." (CX 621 at PDM-HOU006702).

735. Dan Knight, PDM's then account manager and today CB&I's Business Development Manager, added that PDM had "been beating CBI for years in this market, and as long as they recognize why that has happened ... this merger will benefit us all." (CX 621 at PDM-HOU006702).

736. Numerous documents describe Respondents' internal assessment of where the merged firm stood in the competitive landscape.

737. At CB&I, Glenn stated that CBI/PDM had "unequaled capability in our chosen field." (CX 1720 at CBI/PDM-H 4000784). Rich Goodrich, Executive Vice President and Chief Financial Officer, called CBI/PDM the "900 pound gorilla." (CX 1681 at CBI/PDM 4005289). Daniel Knight, the same person who anticipated that the combination of CB&I & PDM would "create barriers to entry," stated, in a post-acquisition e-mail, that "We are by far the 'big-dog' of the industry and I think we need to better educate our customers of what they gain by buying from CBI." (CX 459 at CBI-E 007218; *see* CX 101 at PDM-HOU002359). CB&I boasted internally regarding the LNG market that "no other company in the world is more uniquely or strategically positioned to capitalize on that emerging market." (CX 823 at CBI-E 009355).

738. Mr. Glenn testified that CB&I "bought the company with the intention that the overall company's revenues and profitability would go up." (Glenn, Tr. 4259; *See* CX 1532 at 1; CX 1719 at 1 (CB&I tells its investors, "This acquisition is a major step in CB&I's strategy to achieve sustainable growth in revenues and profitability.")).

739. At PDM, Scorsone thought CB&I/PDM will be a "powerhouse." (CX 72 at PDM-C 1004409). Scorsone later added that CB&I/PDM "will truly be the world leader in storage tanks." (CX 1686 at CBI/PDM-H 4005550; Scorsone, Tr. 5203). At trial, Scorsone reiterated his belief that CBI/PDM would be a "dominant force." (Scorsone, Tr. 5203, 5204).

740. Having agreed to merge, CB&I and PDM personnel began the business of integrating and implementing the objectives of the merger.

741. In October 2000, Scorsone and other executives held a "brainstorming" session. (Scorsone, Tr. 5204). The "brainstorming" team compiled a list of objectives entitled "PDM Merger Objectives Brainstorm Results." (CX 101 at PDM-HOU002359).

742. Among other things, the "PDM Merger Objectives Brainstorm Results" outlined the following objectives of the merger: (1) "Create barriers to entry as they can be built;" (2) "Defend an expanding market share;" (3) "Ensure that we do not allow smaller competitors to take share and pursue business in our attractive markets;" (4) "Put plans in place to command premiums for the services we provide;" and (5) "Improve pricing to achieve margin growth from 12.5% to 17%." (CX 101 at PDM-HOU002359-60).

743. Scorsone circulated the "PDM Merger Objectives Brainstorm Results" document to key members of the integration team with the instruction that they read it to "introduce you to this process." (CX 1683 at CBI/PDM-H 4005384; Scorsone, Tr. 5206).

744. Shortly after the "brainstorming" session, Scorsone and other members of the integration team held an "Integration Kick-off Meeting." (CX 1544 at CBI 057915; CX 1682 at CBI/PDM-H 4005307).

745. Consistent with the principles outlined in the "PDM Merger Objectives Brainstorm Results" document, the "kick-off meeting" agenda prioritized the objectives of the merger: (1) "Ensure we do not allow smaller companies to take share and pursue business in our attractive markets;" (2) "Defend an expanding market share;" (3) "Create barriers to entry;" and (4) "Use pricing advantage as necessary to not lose market share to competitors during the merger." (CX 1544 at CBI 057941).

746. [

]. (CX 921, *in camera*).

[

] (CX 921 at CBI 003613-HOU, *in camera*). [

] (CX 921 at CBI 003609-HOU, *in camera*; Simpson, Tr. 3099-100).

747. Dr. Simpson testified that instances where CB&I has increased price following its acquisition of PDM indicate that CBI's management believes that they can profitably increase price. (Simpson, Tr. 5781)

748. As will be discussed below, the objectives developed during the "brainstorming session" and the "kick-off meeting" soon became reality.

VII.

THE MERGER HAS HAD ACTUAL ANTICOMPETITIVE EFFECTS

A. The Merger Has Resulted in Higher Prices and Margins in All Markets

749. Complaint Counsel has established that the merger will likely have anticompetitive effects through evidence of (1) Respondents' dominant position in highly concentrated markets, (2) the elimination of PDM as CBI's closest competitor, and (3) the inability of foreign and domestic firms to replace PDM as a competitive constraint on CBI.

750. Although not required to do so under Section 7 of the Clayton Act or Section 5 of the FTC Act, Complaint Counsel also presented evidence that in the two years since the merger, Respondents have in fact implemented anticompetitive price and margin increases.

751. Examples of anticompetitive effects include, among others, an LNG project in Cove Point, Maryland CCFF 778-831; LNG projects for [ ] CCFF 832-833; an LNG project in Memphis, Tennessee CCFF 848, 930-955; an LNG project in Fairbanks, Alaska CCFF 956-978; an LNG project for Dynegy CCFF 979-1007; an LNG project for Yankee Gas CCFF 1008-1027; LIN/LOX projects for Linde and Praxair in New Mexico CCFF 1059-1087 and for MG Industries 1088-1108; and TVC projects for Spectrum Astro CCFF 1109-1165; [ ] CCFF 1182-1221 and TRW CCFF 1166-1181.

752. The evidence of actual anticompetitive effects further belies Respondents' argument that entry by foreign and domestic firms will deter or counteract any anticompetitive harm that may flow from the merger.

1. *CB&I Publicly Acknowledges that Competition Has Been Substantially Lessened*

753. Beginning in 1997, CB&I filed a series of "S-1" forms with the Securities and Exchange Commission in connection with a public stock offering. The S-1s contain statements of "Risk Factors" that investors should be aware of before purchasing CBI's stock. (CX 1633 at 13; CX 1635 at 11; CX 1714 at 14; CX 1715 at 14; CX 1716 at 10).

754. One of the "Risk Factors" that CB&I warned about before the acquisition was the impact that competition from firms such as PDM had on CBI's profitability.

> In recent years, **competition has resulted in substantial pressure on pricing and operating margins**. The Company expects overcapacity and other competitive pressures in the industry to continue for the foreseeable future... The Company's competitors, either alone or together with competitors having sufficient resources, could engage in a variety of actions, including

> **aggressive price competition**, increased commitment of resources to compete, offering a higher level of customer service and efforts to recruit the Company's customers, which may have the effect of delaying or preventing the implementation of the Company's business strategy or **adversely affecting the Company's ability to compete profitably**...."

(CX 1633 at 18 (emphasis supplied); *see also* CX 1635 at 18; CX 1714 at 18; CX 1715 at 19-20; CX 1716 at 15).

755. CBI's statements in its S-1 filings about the competitive pressures exerted by PDM are consistent with Respondents' contemporaneous business records and testimony in this case about the vigorous head-to-head competition between CB&I and PDM before the merger. CCFF 203-290.

756. Today, CB&I does not face the same competitive pressure from PDM or any other domestic or foreign firm. In November of 2001 (nine months after completing the acquisition of PDM) and in July 2002 (four months before the start of the FTC's trial), CB&I filed prospectuses with the SEC in connection with two separate stock offerings, the first for 1.3 million shares and the second for 2.7 million shares. (CX 1718 at 1 of 15 (filed as of November 9, 2001); CX 1021 (dated July 2, 2002)).

757. Unlike the S-1s filed before acquiring PDM, the post-merger prospectuses contain discussions about "Risk Factors" but say nothing about competition having a negative impact on prices and margins or forcing CB&I to bid at less than attractive rates. Indeed, the "Risk Factors" section ignores competitors entirely. (CX 1021 at 7-13; CX 1718 at 3 of 15 - 9 of 15).

758. The 2002 prospectus contains a separate section about "Competition," but CBI's discussion only highlights its market leading position: "We believe that we are a leading competitor in most of the products and services that we sell. Price, quality, reputation, safety record and timeliness of completion are the principal competitive factors within the industry. There are numerous regional, national and international competitors that offer products and services similar to ours." (CX 1021 at 36).

759. By its own admission, CB&I no longer encounters (1) "substantial pressure on pricing and operating margins," (2) "aggressive price competition," (3) conditions "adversely affecting the Company's ability to compete profitably," or (4) the need to "bid [its] services out for hire at less than attractive rates." (CX 1633 at 15).

760. As CEO of CBI, Mr. Glenn's responsibility is to ensure that its SEC filings are "accurate, truthful, and complete." (Glenn, Tr. 4376). To omit pertinent information or present false information in an SEC filing would be characterized as fraud, and would have punitive consequences. (Glenn, Tr. 4377).

761. In the third and fourth quarters of 2001, CB&I's "Investor Fact Sheet," displayed on CBI's web site, described the acquisition of PDM as a "major step in CB&I's strategy to achieve sustainable growth in revenues and profitability." (CX 1532; CX 1719). The "Investor Fact Sheet" states that CBI's "competitive advantages" include "global execution capabilities unmatched by competitors." (CX 1532) CB&I underscored LNG as a product market with continuing opportunities: "Key Growth Strategies: Capture a major share of the worldwide market for Liquefied Natural Gas (LNG)." (*Id.*)

762. In its July 2002 "Investor Presentation," CB&I emphasizes its "Multi-tiered Growth Strategy." Among other objectives, CB&I lists "Gain Share in High Growth Markets," "Market Expanded Capabilities," and "Growth through Strategic Acquisitions" as ways to grow its business. (CX 1628 at 14).

763. The same growth strategy was repeated on CBI's web site for the third quarter of 2002. (CX 1527 at 2). CB&I reports to investors that it anticipates "margin improvement and accelerating earnings growth" going forward.

764. Unrestrained by competition, CB&I's financial picture has improved since the merger. CBI's July 2002 "Investor Presentation" reports that since the "transformational acquisitions" in 2000, which includes the PDM acquisition, CBI's gross margins increased from 11.3% in 2000 to 12.6% in 2001 and 13.0% in 2002. (CX 1628 at 23). Revenues jumped from $612 million in 2000 to around $1.1 billion in 2001 and 2002. (*Id.*). Respondents made no mention of any threat from competition, much less of entry by foreign competitors.

765. CB&I added that it was "well positioned for revenue growth and margin improvement." (CX 1628 at 22; *see also* CX 1629 at 26 (CB&I revenue will be $1.2 billion in 2002); CX 1532; CX 1719 (On CB&I's web site, investors are told that CB&I's "Performance Goals" are to achieve revenues of $1.5 billion per year by 2005)).

766. On October 31, 2002, CB&I reported third-quarter results that exceeded the expectations set forth in July of 2002. CB&I's recorded gross profit for the first nine months of 2002 were 13.6% of revenues, compared with 12.2% of revenues in the comparable 2001 period and 13.0% as projected in the July 2002 "Investor Presentation." (CX 1576 at 1; *compare to* CX 1628 at 23).

767. On October 31, 2002, CB&I held a conference call with the investment community to discuss its third-quarter financial results. Financial analysts asked questions and CB&I executives, including Glenn, addressed issues pertinent to the FTC's action.

768. An analyst asked how the competitive environment had changed: "[W]hat is the competitive environment for the services that you provide that has changed over the last five to ten years? I mean, are there fewer, better qualified contractors to be able to take advantage of this?" (CX 1731 at 44).

769. Glenn's answer touts CB&I's new-found market leadership position – unfettered by foreign and domestic competition:

> Well, I don't know that there are fewer. There are some that have run on hard times. There are those that have stubbed their toe. You know, you're only as good as your last job. And we're really proud of the fact that, you know, **a lot of owners out there, if they go to build a sophisticated project, like an LNG project or an LNG tank, they don't want to take a chance on a low price and a potential second class job or shoddy welding or any of that kind of stuff.** The kind of work that we do is very specialized, very sophisticated. We have an excellent track record.
>
> And we think that, short of somebody coming in, which they do, and just taking a big dive on the price, that **we can win the work every time** technically. And if they want to dive in and take the work for less than they can execute it for, that's fine, we'll just sit and watch them go out of business, too.

(CX 1731 at 44-45) (emphasis supplied).

770. Another analyst asked about CB&I's higher margins: "Lastly, the gross margin keeps like coming up quite a bit. What do you think would be a reasonable margin of going forward like with your focus on more like a higher margin, Howe-Baker work? What's a reasonable margin run rate you think?" (CX 1731 at 41).

771. Glenn's answer confirms CBI's "high" margins, and ability to achieve higher margins than competitors:

> **The margin levels are high.** It's all got to do with the mix of the work and the timing of the revenues and ... [p]roject execution... So, I don't want to point to something other than just to say that, as I said before, we're trying to focus more of our energy, more of our efforts, more of our resources on the higher margin work... And that's work that we – you know, we have to compete in some manner with others and because of our concentration on lowering our costs and keeping our costs down, **we can still be low bidder and make more money on it than most of our competitors, if not all of them.**

(CX 1731 at 41-42) (emphasis supplied).

772. Another analyst asked about CBI's prospects going forward: "If we look at the business opportunities that you see for CB&I, going over the next 12 months, and you go back to,

you know, either December 31st or a year ago, either way you want to do it, can you give us an order of magnitude, does the business look the same, does it look better, and just give us some way – you know, your target list projects pursued, you know, some way to quantify?" (CX 1731 at 27).

773. Glenn responded that CBI's prospects look "30%" better today than in the past:

> With this report, CB&I has exceeded many of our previous records in areas like new business taken, backlog and several others. We're extremely pleased with the efforts and performance of our entire team. The results speak for themselves, so I will only comment that **our markets and prospects appear more attractive to us today than at any time in our recent past.**
>
> I would give you a general comment that **our prospect list and the projects that we're attracting looks better to us today than at any time since the IPO** [ ]. If you had to pick a number, I don't know, **maybe it's 30 percent or something, but it's a big number.**

(CX 1731 at 4, 28 (emphasis supplied); *see also* CX 1735 at CB&I 004168-HOU (new business taken has risen dramatically since 2001); [ ], Tr. 5302, *in camera*).

774. None of CBI's post-merger communications mention anything about foreign firms, domestic firms or joint ventures threatening CBI's ability to win projects and raise prices and margins.

775. On December 16, 2002, six-weeks after the conference call with investors, Glenn gave the Tribunal a less sanguine assessment of CBI's prospects. [

]. ([ ], Tr. 4223-4224, *in camera*). This testimony is not credible considering Mr. Glenn's public statements as well as CB&I's higher prices and profit margins.

776. Respondents' argument to the Tribunal – that ["vicious"] competition from foreign and domestic firms restrains CB&I – is a claim that CB&I has chosen to share with the Tribunal but not with the SEC or the investment community.

B. The Merger Has Had Actual Anticompetitive Effects in the LNG Market

1. *The Cove Point, Maryland Project*

777. The LNG project at Cove Point, Maryland ("Cove Point") illustrates two important themes of this case. (1) Prior the merger, CB&I and PDM competed vigorously to win this project, and Cove Point benefitted in the form of lower prices. (2) Since the merger, the elimination of PDM as CB&I's closest competitor and the inability of other firms to replace PDM as a price constraint has permitted Respondents to raise prices and margins markedly. On at least four occasions, Respondents implemented price increases that raised the current price of the Cove Point tank by more than 60% from pre-merger levels, with a nearly five-fold increase in the dollar margins that the combined entity expects to earn.

778. The Cove Point story involves three phases. Phase 1 is the January 2000 period when CB&I and PDM were in head-to-head competition to win a 750,000 barrel LNG tank project with Columbia LNG, and its successor, Williams Gas Company. CCFF 779-788. Phase 2 is the September 2000-February 2001 period when Respondents had agreed to merge but had not yet finalized the acquisition. In Phase 2, Williams Gas Company obtained price quotes from PDM for the 750,000 barrel tank and alternatively for a 850,000 barrel tank, and accepted PDM's final bid for the 850,000 barrel tank. CCFF 789-811. Phase 3 is the period after February 2001 when Respondents had merged to create one entity. CCFF 812-825.

2. *Cove Point Phase 1 – CB&I -PDM Competition Brings Prices Down*

779. During Phase 1, CB&I and PDM competed aggressively to win a 750,000 barrel LNG tank for Columbia LNG to be built at Cove Point. (CX 293 at CBI/PDM-H 4008141).

780. In January 2000, PDM's Mike Miles, the lead sales representative on Cove Point, announced to PDM staff working on the Cove Point bid, as well as his boss, Jeff Steimer, that (a) "PDM is bidding against CB&I on this one;" and (b) PDM needed a "very competitive price to be successful." (CX 293 at CBI/PDM-H 4008141).

781. PDM initially quoted a price of approximately [ ] million. (CX 226 at CBI-PL044978, *in camera*). PDM subsequently bid [ ] million. (CX 1058 at PDM-HOU 017465).

782. CB&I initially bid [ ]. (RX 127 at CBI-H008204).

783. CB&I's March 2000 bid review report shows that CBI's bid consisted of a "profit" of [ ], amounting to [ ] of the price, and a "Technical Services Fee," CBI's equivalent of additional margin for sales, general and administration ("SGA"), of [ ], amounting to [ ], for a total "margin" of [ ], or [ ] of the price. (RX 127 at CBI-H008204).

784. A CB&I report summarizing conversations with the customer shows that by March of 2000, competition from CB&I forced PDM to lower its initial bid by approximately [ ]. (CX 226 at CBI-PL044978, *in camera*).

785. On March 29, Gary Marine of CB&I relayed minutes of a meeting that he had with [ ], a representative from Columbia. (CX 226, *in camera*). Marine wrote: [

] (CX 226 at CBI-PL044978, *in camera*).

786. [

]. (CX 226 at CBI-PL044978, *in camera*).

787. After Marine's March memo, the threat of losing Cove Point to PDM prompted CB&I to lower its price even further. (CX 1388 at CBI/PDM-H 4015263). Marine advised that CB&I should reduce its price to [ ] million, a reduction of [ ] from its initial [ ] bid, and offer a further discount tied to how quickly the customer places its order. (CX 226 at CBI-PL044979, *in camera*; RX 127 at CBI-H008204).

788. Columbia sold Cove Point to Williams in June of 2000. (*See* CX 863; Harris, Tr. 7724-25). After Williams acquired the Cove Point facility, PDM continued to look for ways to reduce costs for Cove Point. In June of 2000, PDM's Miles reminded the team that Cove Point was a "very competitive situation," and, "in accordance with Luke [Scorsone's] direction," emphasized the need to get to "the lowest price possible" and to "save every dollar we can." (CX 863 at CBI/PDM-H 4018410).

3. *Cove Point Phase 2 – The First Price Increase*

789. [

]. (CX 863 at CBI/PDM-H 4018410; Scorsone, Tr. 4964-4966; [ ], Tr. 8061-8062, *in camera*).

790. On August 29, 2000, CB&I and PDM agreed to merge, thereby diminishing each party's incentive to compete against the other.

791. In contrast to its pre-merger eagerness to beat PDM, CB&I chose not to rebid on Cove Point. (Scorsone, Tr. 4965).

792. On September 8, 2000, PDM quoted Williams a budget price of [ ] million for an 850,000 barrel tank and [ ] for a 750,000 barrel tank. (CX 1388 at CBI/PDM-H 4015363). PDM's bid is significant for two reasons.

793. First, just one week after agreeing to merge with its closest competitor, PDM raised its price by [ ] from pre-merger levels. PDM's September quote of [ ] for a 750,000 barrel tank is [ ] higher than PDM had bid for the same-size tank six months earlier when it was in head-to-head competition with CB&I, [ ] higher than CB&I's March 2000 bid of [ ] million and [ ] higher than CB&I's proposed bid of [ ] million. (CX 226 at CBI-PL044978, *in camera*).

794. Second, PDM's price schedule demonstrates that the price differential between a 750,000 barrel tank and a 850,000 barrel tank is [ ], *i.e.*, [ ]. (CX 1388 at CBI/PDM-H 4015363).

795. Scorsone claimed at trial that he believed CB&I was competing against PDM at the time, but nevertheless decided to increase PDM's prices without fear of losing. (Scorsone, Tr. 4965, 4974-4979; *see* Scorsone, Tr. 4983).

4. *Cove Point Phase 2 – The Second & Third Price Increases*

796. In October of 2000, PDM and CB&I began integration discussions in which they exchanged bidding and estimating methodologies. (Scorsone, Tr. 5194-5197).

797. [ ]. (CX 863; CX 1160 at CBI/PDM-H 4007484-7487, *in camera*; Scorsone, Tr. 4967).

798. On November 1, PDM reviewed the September quote of [ ] for the 850,000 barrel tank and *increased* the price to [ ]. (CX 1160 at CBI/PDM-H 4007485). This was an increase of [ ] over the September quote. (CX 1388 at CBI/PDM-H 4015363, CX 226 at CBI-PL044978, *in camera*; CX 1160 at CBI/PDM-H 4007485, *in camera*).

799. Scorsone's November 1 proposal of [ ] for a 850,000 barrel tank is identical to the price Scorsone approved in March (pre-merger) as PDM's initial quote for a 750,000 barrel tank – [ ] – plus the [ ] to account for the larger-sized tank. [ ].

800. On November 2, PDM submitted a bid to Williams for the 850,000 barrel tank of approximately [ ] million, a further increase of [ ] above the November 1 proposal, and [ ] higher than PDM's September [ ] million quote. (CX 1160 at CBI/PDM-H 4007484-7485, *in camera*; CX 1388 at CBI/PDM-H 4015363).

801. PDM's prices for the 850,000 barrel tank, as reviewed on November 1, and as submitted to Williams on November 2, are shown in the table below:

[ ]

(CX 1160 at CBI/PDM-H 4007485, *in camera*).

802. PDM's "Margin" of [ ], as calculated by Scorsone, is the sum of the "SGA" and the "Profit" line items. (CX 1160 at CBI/PDM-H 4007485, *in camera*). . (*Id*.)

803. PDM's November 2 bid of [ ] anticipates a "margin" of [ ], or [ ] on the sold price. (CX 1160 at CBI/PDM-H 4007485, *in camera*). This margin is nearly three times the margin of [ ] and, measured as a percent of the price, more than double the total margin of [ ] that CB&I anticipated for itself in March, before the merger. (RX 127 at CBI-H008204; CCFF 784 (March 2000 bid shows total margin of [ ]).

804. PDM's November 2 bid of [ ] anticipates a "profit" of [ ], or [ ] on the sold price. (CX 1160 at CBI/PDM-H 4007485, *in camera*). This profit is more than triple the profit of [ ] and, measured as a percent of the price, more than double the profit of [ ] that CB&I anticipated for itself in March, before the merger. (RX 127 at CBI-H008204).

805. [ ]. (CX 1160 at CBI/PDM-H 4007486-7487, *in camera*). Steimer believed the original estimate was [ ] (CX 1160 at CBI/PDM-H 4007486-7487, *in camera*).

806. Steimer emphasized that with respect to the profit figure, [ ] (CX 1160 at CBI/PDM-H 4007486-7487, *in camera*).

807. Overall, Steimer viewed the November 2 [ ] bid for Cove Point as [ ]. (CX 1160 at CBI/PDM-H 4007486, *in camera*).

808. Scorsone ignored Steimer's comments and instructed Steimer and the rest of the Cove Point team that "We are not however, to make any new price submittals to Williams as a result of your meeting." (CX 291).

809. Williams accepted PDM's November 2 bid of [ ]. (Scorsone, Tr. 4963).

810. Steimer's prediction that the margins realized on Cove Point would greatly exceed the November estimates proved correct.

811. In June 21, 2001, CB&I prepared a "Quarterly Review" that records the merged entity's projected margins on Cove Point. The "Quarterly Review" reports that the "projected GP" – projected gross profit – on Cove Point would be [ ] compared to the [ ] projected on November 2.[5] (RX 323 at CBI 004066-HOU). The [ ] gross profit represents a margin of [ ] of the sold price, and a [ ] increase since the November 2 bid. (RX 323 at CBI 004066-HOU).

5. *Cove Point Phase 3 – The Fourth Price Increase*

812. Since the November 2, 2000, bid, CB&I has [ ] (Scorsone, Tr. 5333, *in camera*).

813. [

]. (Scorsone, Tr. 5334, 5337-39, *in camera*).

814. CB&I currently projects that it will earn a margin of approximately [ ] on Cove Point, or [ ] of the current price. (Scorsone, Tr. 5334, *in camera*). This dollar amount is a little less than five times the projected margin of [ ] that CB&I was willing to accept in March of 2000 when it was trying to beat PDM on Cove Point, and a percentage margin that is nearly three times greater [ ]. (RX 127 at CBI-H008204).

815. CB&I currently projects that it will earn a profit of about [ ] on Cove Point, or [ ] of the current price. (Scorsone, Tr. 5314, *in camera*). This dollar amount is a little less than six times the projected profit of [ ] that CB&I was willing to accept in March of 2000 when it was trying to beat PDM on Cove Point, and a percentage

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[5] [

]. (CX 1160 at CBI/PDM-H 4007484-7485, *in camera*).

profit that is over three times greater [ ]. (RX 127 at CBI-H008204).

6. *Cove Point – What Could Have Been Absent the Merger*

816. A CB&I "Tank Estimate Summary Sheet," dated February 21, 2001,

immediately following the CBI/PDM merger, shows that CBI, as an independent competitor, could have significantly undercut PDM's bids on Cove Point. The estimate may have been prepared before this date.

817. [

]." (CX 906 at CBI 031076-HOU, *in camera*).

818. [

]. (CX 906 at CBI 031076-HOU, *in camera*). The document shows a price of [ ]. (CX 906 at CBI 031076-HOU, *in camera*). This compares to PDM's quote to Williams for the same tank of [ ] on September 8, 2000; PDM's bid of [ ] on November 2, 2000; and the current price of [ ]. CCFF 792, 800, 812.

819. The "Tank Estimate Summary Sheet" includes a "margin" of [ ] over cost and a "technology services fee" of [ ], which combined amounts to a total margin on the project of [ ] or [ ] million of the tank's price. (CX 906 at CBI 031076-HOU, *in camera*). CB&I's estimated margin is almost identical to PDM's margin of [ ] million included in PDM's March 2000 bid to Columbia for the Cove Point tank, a coincidence that suggests that CB&I had access to PDM's March 2000 bid estimate during the companies' pre-acquisition exchange of information regarding estimating methodology. (Scorsone, Tr. 5195 (Mr. Scorsone testified that it was "entirely appropriate" to exchange information about projects "already sold" prior to the acquisition)). CB&I's margin on its March 2000 competing bid was [ ] million. (RX 127 at CBI-H008204, *in camera*).

820. A note at the bottom of the "Tank Estimate Summary Sheet" shows that, based on PDM's actual sold price, the margin is nearly double the margin CB&I would have earned: [ ] (CX 906 at CBI 31076-HOU, *in camera*).

821. CB&I's estimate of the margin it would have earned had it bid on Cove Point – [ ] – is approximately half of what the merged entity currently expects to earn on Cove Point. (*See* CX 906 at CBI 31076-HOU, *in camera* ([ ]); CCFF 814 ([ ])).

822. If CB&I and PDM had not merged, the customer at Cove Point could have avoided these price increase, and may have been able to reduce prices even further by leveraging CB&I and PDM against each other.

823. Thus, the price of the 850,000 barrel Cove Point tank has jumped from the pre-merger levels of [ ] in March of 2000 to (1) PDM's initial post-merger quote of [ ] in September of 2000, then again to (2) PDM's post-merger bid of [ ] in November of 2000, and then once again to (3) the current price of [ ]. At the same time, margins have jumped from [ ] in March of 2000 to approximately [ ] today.

824. Respondents presented no evidence that these price and margin increases on Cove Point were in any way impacted by any foreign or domestic competitor.

825. The table attached hereto shows the history of PDM's and CB&I's prices, profit and margin for Cove Point, from early 2000 (when CB&I and PDM were in head-to-head competition) through December 2002.[6]

[6] CB&I's June 21, 2001, Industrial Quarterly Review shows CB&I's "margin," but not CB&I's "profit" without "SGA." (RX 323 at CB&I 004066-HOU). [ ] (CX 1160 at CBI/PDM-H 4007485, *in camera*), [ ]. Accordingly, the table includes a projected "profit" figure as of June 21, 2001, which is calculated as CB&I's projected "profit," as of November 2, 2000, plus the difference between CB&I's "margin," as projected on June 21, 2001, and CB&I's "margin" as projected on November 2, 2000.

[

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]

826. The table attached hereto graphically shows the price history of Cove Point. The blue bars represent the decreasing prices quoted by CB&I and PDM in head-to-head competition for the 750,000-barrel tank. The red bars represent the increasing prices quoted by PDM after Respondents agreed to merge. The green bar represents the price CB&I internally estimated it would have bid on Cove Point had the merger not occurred.

[

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]

827. The table attached hereto graphically shows the history of dollar margins ("profit" plus "SGA") on Cove Point. As shown by the red bars, the projected margin on Cove Point increased substantially after CB&I and PDM signed the letter of intent to merge. As shown by the blue bar, Respondents' projected margin pre-merger was substantially below the levels anticipated today. The green bar shows the margin CB&I estimated it would have earned on Cove Point had the merger not occurred.

[

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]

828. The table attached hereto takes the same information from the previous table and graphs the data in percentages.

[

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]

829. The table attached hereto graphically shows the history of dollar "profits" ("margin" minus "SGA") on Cove Point. As shown by the red bars, the projected profit on Cove Point increased substantially after CB&I and PDM signed the acquisition letter of intent. As shown by the blue bar, Respondents' projected profit pre-merger was substantially below the levels anticipated today. The green bar shows the profit CB&I estimated it would have earned on Cove Point had the merger not occurred.

[

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]

830. The table attached hereto takes the same information from the previous table and graphs the data in percentages.

[

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]

7. *The [ ] Projects*

831. CB&I's ability to convince [ ] to enter into sole-source negotiations illustrates five important themes. (1) Based on actual prices obtained from CB&I, PDM and Whessoe, [ ] knew that CB&I and PDM offered significantly lower prices than other firms. (2) [ ] knew that with the acquisition of PDM, CB&I dominated the United States market. (3) Without PDM to turn to, [ ] could encourage competition only by turning to untested, higher-priced alternatives. (4) Requiring guaranteed access to resources necessary to complete LNG projects in the United States, [ ] has no choice but to acquiesce to CB&I's demand that [ ] work exclusively with CB&I, which may increase the costs to [ ]. (5) A sole-source relationship to provide engineering, procurement and construction services and the LNG tank itself is far more lucrative for CB&I than having to competitively bid with other firms or to bid just for the LNG tank alone.

832. [ ] is a global petrochemical company based in [ ] with operations all over the world. (JX 33 at 19-20 ([ ], Dep.)). [

].[7] (JX 33 at 9-10 (Sawchuk, Dep.)).

8. *A Sole-Source/Turnkey Contract Leads to Higher Prices for Customers*

833. Because the three projects were in the early stages of development in 2001, [ ] weighed its options about how to bring the projects to completion. Among other things, at issue was (a) who would perform the engineering, procurement and construction functions for the entire facility, (b) who would supply the LNG tanks, and (c) how should the relationship with the firm(s) be structured, *i.e.*, selected through competitive bidding among multiple suppliers or a sole-source relationship with one firm. (CX 693 at [ ] 01 026-028).

834. The development and planning of an LNG tank construction project can be broken into three major phases. The first phase is "Front End Engineering and Design" ("FEED"). (JX 31 at 50-51 (Puckett, Dep.)). The FEED phase involves a study of the site and assessment of what the construction project will entail. (Puckett, Tr. 4548; Price, Tr. 546). The second phase is the selection of a contractor to handle the "Engineering, Procurement and Construction" ("EPC") of the LNG facility. (Puckett, Tr. 4543). Among other things, the EPC contractor is responsible for all aspects of the construction of the LNG facility, including procurement of the tank, tank support systems, equipment, materials, and engineering. (Puckett, Tr. 4543). The third phase is the selection of a firm to supply the LNG tank itself.

835. The LNG industry uses the phrase "turnkey" to refer to a project in which one firm

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[7] Because the [ ] and [ ] projects have not, to date, been publicly announced, their locations and names are kept confidential. (JX 31 at 9 ([ ], Dep.)).

is retained to handle most or all of the various phases of the construction project, including the EPC contracting and LNG tank construction. (Puckett, Tr. 4570; Price, Tr. 520-521).

836. [

]. (CX 364 at CBI-E 009279; *see* CX 906 at CBI 031075-HOU, CBI 031076-HOU, *in camera* ([ ])).

837. Generally, "turnkey, design build projects typically return higher margins than stand-alone storage tank projects." (CX 660 at PDM-HOU 005013). Mr. Scorsone agreed that industry participants view a turnkey project to result in "higher margins." (Scorsone, Tr. 2812-3).

838. Generally, a sole-source supplier earns higher margins than if competing against other firms in a competitive bidding situation. (*See* CX 112 at PDM-HOU 011513-4 (PDM observes that CB&I's price to an LNG customer "is probably substantially high due to their perceived sole-source position"); Kamrath, Tr. 2030 ("we found that always a competitive bid resulted in a better cost for us, lower cost [ ]"); [ ], Tr. 720-21 (cost of sole-sourced LNG tank from CB&I was [ ] more than comparable facilities") (*in camera*).

839. Even more lucrative is to be the sole-source EPC contractor. Mr. Price from Black & Veatch explained that as a sole-source EPC contractor "we don't have to develop the lowest cost. You can be – put more profit into the project because you don't have any competition." (Price, Tr. 558-9).

840. By securing a sole-source relationship with a customer, CB&I earns 8-10% for negotiated work versus an average of 2.5% for CB&I's total work sold. (CX 227 at CBI-PL045109). In a review of its North American operations, CB&I compared its 1997 margin levels for negotiated work against its average total margin for all work sold in each product line. (CX 227 at CBI-PL045109). For low temperature and cryogenic tanks, CB&I's average total margin for all work sold was 2.5%; its margin for negotiated work was 8-10%, three to four times as high. (CX 227 at CBI-PL045109).

841. CB&I prefers to perform LNG projects on a negotiated basis, in other words, as the sole-source turnkey contractor. (Glenn, Tr. 2659-60).

842. Generally, petrochemical facility owners prefer to avoid a sole-source or turnkey relationship with a contractor because doing so will likely increase the costs to the facility owner and, therefore, owners prefer competitive bidding. A project manager explained that separate competitive bidding made it "easier to subcontract something that we want done, rather than having

to go through and pay CB&I 10% of everything that Joe does over here, when you can save that 10% by having Joe do what you want him to do." (Crider, Tr. 6719).

843. For example, Dynegy "had the option of either going out for somebody who [would] do the entire project for us, everything, or we had the choice to go out and break it up into what we felt were logical pieces for the project." (Puckett, Tr. 4544). Dynegy "made the decision that we would go out for separate quotes for the tanks, view that as a separate contract, and we would also go out and purchase most of the other major equipment separately from the EPC firm, with their support but still run it across Dynegy's books. Simple answer, we didn't want that EPC firm to be doing additional markups on items that we felt that we could run across our books." (*Id.*)

844. [

]. (CX 428 at CBI-E 009331; CX 364 at CBI-E 009279).

845. CB&I is one of the few firms in the world that has the capability to serve as both the EPC contractor and the LNG tank supplier. (CX 428 at CBI-E 009331; CX 310 at CB&I 049044).

846. CB&I knows that its ability to perform the EPC function and build LNG tanks gives it a competitive advantage on LNG tank projects. In 1997, CB&I was approached by Lotepro, the engineering firm that had partnered with Whessoe on the Memphis project only to be resoundingly beaten on price by CB&I (and PDM), which had bid for the engineering work and the supply of the LNG tank itself. CCFF 847. Lotepro felt their engineering bid was competitive but their total price was "really strained by not being able to include a CB&I or PDM tank." (CX 186 at CBI-PL012447). Lotepro inquired whether CB&I would be interested in teaming with Lotepro now on future LNG projects. (*Id.*)

847. Following an internal analysis based on the outcome of the Memphis project, CB&I decided "it is in CBI's best interest NOT to quote separate tank price [to Lotepro]." (CX 186 at CBI-PL012446). CB&I reasoned that quoting "a separate tank price will only serve to make the process-only contractors viable...If we had quoted a tank only price, the combination of Lotepro process and CB&I tank would have been a serious threat to CB&I total facility price...Lotepro's total facility bid using Whessoe tank and Pritchard's bid using TKK tank did not turn out to be very competitive." (*Id.*)

848. CB&I declared that it would "quote turnkey for the total facility with process and tank, and NOT bid tank only" on United States LNG projects. (CX 186 at CBI-PL012446). CB&I liked "our chances better in what then boils down to a 2 horse race." (*Id.*)

849. CB&I and PDM were the two horses that competed most closely for LNG tanks

in the United States. By acquiring PDM, CB&I turned it into a one-horse race, thereby giving CB&I an even greater leg up against other firms to secure not only the LNG tank business itself, but also the more lucrative EPC work. Without a low-cost LNG tank supplier that can compete against CB&I's prices, an EPC engineering firm will likely face the same competitive disadvantages as Lotepro and Black & Veatch did in the Memphis project. For the LNG facility owner, the race would also come down to one horse – CB&I.

850. Mr. Glenn of CB&I alluded to the sole-source, turnkey strategy during the October 31, 2002 investors conference call when he said that CB&I's margin levels are "high" because CB&I is "trying to focus more of our energy, more of our efforts, more of our resources on the higher margin work." (CX 1731 at 41-42).

851. It is this higher-margin sole-source/turnkey strategy that drives CB&I's relationship with [ ].

9. *The Absence of Effective Competition Leaves [ ] with No Choice but to Enter Into Sole-Source, Turnkey Negotiations with CB&I*

852. Until 2001, CB&I had performed some of the preliminary design work. (JX 33 at 10 ([ ], Dep.)). For at least one project, CB&I wanted a more expansive role: [

] (CX 693 at [ ] 01 026).

853. [ ] prepared a memorandum, dated June 19, 2001, to brief [

] about the available options. (CX 693 at [ ] 01 026, *in camera*). The memorandum was prepared by [ ] (*Id.* at [ ] 01 028, *in camera*).

854. [ ] first assessed the [ ] and the various firms within it that could be considered for the projects. The list included numerous general contractors from the United States, Europe and Asia [

] (CX 693 at [ ] 01 026-7).

855. [ ] identified only [

] (CX 693 at [ ] 01 027).

856. [ ] stated that with respect to LNG tank suppliers, [

] (CX 693 at [ ] 01 027).

857. [ ] stated that since the acquisition of PDM, [

] (CX 693 at [ ] 01 027) (emphasis supplied).

858. The memorandum adds that the use of CB&I as a "main contractor" has "potential

limitations." (CX 693 at [ ] 01 027). Among other things, CB&I seeks "an up-front commitment to the entire project." (*Id.*) CB&I is "technically strong," but "have yet to open up to us about technology or show signs of wishing to reduce costs or schedule through technical innovation." (*Id.*) CB&I is "very negative towards novel tank concepts that do not require welded steel plate" because CB&I views itself as "'metal erectors.'" (*Id.*) This last observation was important because [ ] was researching the use of concrete materials in LNG tanks that may reduce construction time and costs considerably. (*Id.* at 01 028).

859. [ ] took a cautious tone with respect to Whessoe and its new owner Skanska. The memorandum observes that "CB&I quoted Whessoe as a new entrant into the US market in their FTC submission," and that Whessoe had "confirmed their interest" in the United States to [ ]. (CX 693 at [ ] 01 027). The memorandum adds that Whessoe "did not perform at all well in Trinidad, and Bechtel had to provide substantial project management support." (*Id.* at [ ] 01 028) It was "not yet clear" to [ ] what Skanska's strategy for Whessoe will be, but Skanska is a "very major civil contractor" in the United States and "may help Whessoe to compete there." (*Id.*)

860. [ ] had only a brief discussion about Technigaz. The memorandum states that Technigaz is "not active in the US," but, based on the "technical exchanges" with Technigaz, appeared "experienced," "professional," and a "credible contractor in most parts of the world." (*Id.*).

861. Having assessed the firms that could supply the LNG tanks as a subcontractor or as a main contractor, [ ] asked what would be the best way of going forward. [ ] "key choices in the US will be: • do we form a closer relationship with CB&I in order to guarantee access to the resources we need for our US [ ] projects? • or do we deepen the market in the US by encouraging competition?" (CX 693 at [ ] 01 028).

862. The memorandum states that the answer will turn on CB&I's performance in the preliminary design and cost work it has agreed to perform on one of the projects. (CX 693 at [ ] 01 028).

863. [ ] does not "believe that a 'single source' arrangement with CB&I is likely to be appropriate outside of the US, where we would prefer them to offer conventional FEED and EPC services." (*Id.*) One reason a single source arrangement may not be appropriate elsewhere is because [ ] would have a greater competitive selection of firms with experience constructing LNG tanks outside of the United States. [ ] believed it had to make a special exception here because CB&I "dominate[s] the US market." (CX 693 at [ ] 01 027).

864. In July and August of 2001, [ ] further clarified why it would be prudent to turn exclusively to CB&I in the United States.

865. On July 27, [ ] executive in charge of the three new United States LNG facilities circulated an e-mail to [ ] regarding "CBI's acquisition of PDM." Gerald Glenn of CB&I asked [ ], a [ ] executive to

provide an affidavit in connection with the FTC's action "to the effect that CB&I's acquisition of [PDM] does not significantly affect the competitive of construction of low temperature and cryogenic industrial storage tanks." (CX 691 at [ ] 01 033). Glenn cited to [ ] "potential international competitors such as Skanska/Whessoe, TKK, MHI and Bouygues [ ] and maintains that the market for construction of such tanks will remain competitive." (*Id.*) [ ] added that "Gerald and I have a relationship that I value so if I could help him out on this I would like to do so." (*Id.*) [ ] pointed out that "[t]his is a bit of a sticky one but maybe some advice from the two of you would help me decide the right course of action." (*Id.*)

866. [

]. (CX 691 at [ ] 01 032, *in camera*).

867. [

] (CX 691 at [ ] 01 032, *in camera*).

868. [ ] possesses real data on which to base its decision that the cost-effective strategy going forward is to enter into a sole-source relationship with CBI.

869. In November 1998, [ ] compiled "bids" from PDM, CB&I, and Whessoe for various sizes and types of LNG tanks. (RX 157 at [ ] 02 001-002, 02 004, *in camera*). [ ] then prepared a chart analyzing each firm's "bids" for various sizes and types of LNG tanks. The table below repeats [ ] analysis of single-containment LNG tanks.

(RX 157 at [ ] 02 004, *in camera*).

870. CBI's Scorsone testified to the accuracy of the analysis. "[ ], being one of the leading global, very global, petroleum/petrochemical companies, gas company, has spent time developing a rather sophisticated pricing model that one of their Ph.D. engineers [ ] -- has developed, that some of our engineers have worked with this model and discussed the model with [ ] and have come away very impressed that it very, very accurately can predict the cost of some of these facilities." (Scorsone, Tr. 4996).

871. [ ] "very, very accurate[]" pricing model shows that Whessoe's prices are nearly double CB&I's prices. (Scorsone, Tr. 4996; RX 157 at [ ] 02 004, *in camera*).

872. Whessoe's prices for a single containment LNG tank were far higher than CB&I's, ranging from [ ] higher, for [ ] cubic meter tanks, to [ ] higher for an [ ] cubic meter tank. (RX 157 at [ ] 02 004, *in camera*).

873. [ ] internal pricing analysis underscores why it viewed CB&I as the "leading company in the LNG Tank business" and that CB&I "now dominate the US market." (CX 693 at [ ] 01 027, *in camera*; CX 691 at [ ] 01 032, *in camera*).

874. [ ]. (RX 157 at [ ] 02 004, *in camera*).

875. Based on [ ] data, PDM was CBI's closest competitor for LNG tanks. (RX 157 at [ ] 02 004, *in camera*).

876. [ ]. (RX 157 at [ ] 02 004, *in camera*).

877. Without PDM as a competitive constraint, CB&I can increase its prices [ ] for [ ] cubic meter tanks before Whessoe becomes competitive. (RX 157 at [ ] 02 004, *in camera*).

878. Without PDM as a competitive constraint, CB&I can increase its prices for a [ ] cubic meter tank by [ ] before Whessoe's prices become competitive. (RX 157 at [ ] 02 004, *in camera*).

879. [ ] internal analysis, using real-life data, demonstrates that in order to "deepen the market in the US by encouraging competition," [ ] would have to pay Whessoe significantly more for LNG tanks than it would pay to CBI. (CX 693 at [ ] 01 028, *in camera*).

880. Despite the fact that CB&I could increase its prices significantly to [ ] and still beat Whessoe, and the fact that a turnkey or sole-source arrangement generally results in higher margins for the EPC contractor and LNG tank supplier, acquiescing to CBI's pressure to enter into a sole-source turnkey relationship would at least provide [ ] with "guarantee[d] access to the resources we need for our US regas projects." (CX 693 at [ ] 01 028, *in camera*).

881. Given the limited choices, [ ] has decided to negotiate for sole-source agreements with CB&I for its three pending LNG import terminal projects in the United States. ([ ], Tr. 4995, *in camera*).

882. The following graph shows that the CB&I, PDM, and Whessoe values depicted in

[ ] pricing analysis lie along trend lines. (RX 157 at [ ] 02 004, *in camera*; [ ], Tr. 8122, *in camera*; CX 1760 at 1 (demonstrative)):

[

IN CAMERA

]

10. *Respondents' Pricing Pattern for Cove Point Compared to [ ] Pricing Analysis Illustrates Why CB&I Can Exercise Market Power*

883. The prices quoted to [ ] by CB&I, PDM and Whessoe for various sizes of LNG tanks can be plotted to establish price curves for each firm. CB&I's and PDM's price quotes on the 2000 Cove Point project can also be plotted against the 1998 [ ] quotes. CCFF 891. After examining the data observations, a comparison can be made between the prices quoted on the Cove Point project and the prices quoted to [ ] for its tanks.

884. The comparison demonstrates five important points: 1) Immediately prior to the acquisition, competition between CB&I and PDM disciplined the two firms to keep their bids to customers within a price curve best demonstrated by bids given to [ ] in 1998. CCFF 891, 893; 2) After the letter of intent was signed, PDM attempted to increase the price curve, indicating an across-the-board price increase. CCFF 907; 3) Post-acquisition, CB&I is no longer constrained by any competitor's pricing, and has abandoned adherence to any price curve. CCFF 913; 4) CB&I's post-acquisition bids to Cove Point reflect a 61.6% price increase over pre-acquisition pricing levels. CCFF 926; 5) Post-acquisition, CB&I possesses sufficient information about foreign competition to know how much it can increase its price before foreign firms become a price constraint. CCFF 935.

885. There are three sections of the Cove Point/[ ] comparison. Part I of the comparison demonstrates the similarities between CB&I's and PDM's bidding practices in 2000 for the Cove Point project and in 1998 for the [ ] project. Part II of the comparison details PDM and CB&I's behavior after the letter of intent was signed, and illustrates that currently, CB&I pricing deviates from any price curves that existed prior to the acquisition because, in the competitive void that exists post-acquisition, CB&I has no price constraints (other than the significantly higher prices of Whessoe). Part III examines the comparison and relevant calculations on a demonstrative aid.

11. *Phase I: PDM Restrained CB&I's Pre-merger Prices*

886. Prior to the acquisition, PDM's preliminary budget price for the Cove Point 750,000 barrel LNG tank was [ ]. (CX 226 at CBI-PL044978, *in camera*; CCFF 781.

887. Competition between CB&I and PDM lowered both firms' prices for the 750,000 barrel tank from [ ] to what CB&I believed to be approximately [ ]. (CX 226 at CBI-PL044979, *in camera*). CCFF 785.

888. A 750,000 barrel tank equals 119,237 cubic meters, or approximately 120,000

cubic meters. (*See* Price, Tr. 539 (one cubic meter of liquid x 6.29 = barrels of liquid)).

889. The threat of PDM winning the Cove Point project prompted CB&I to lower its final bid for the Cove Point tank to [ ] dollars for a 750,000 barrel (≈120,000 cubic meter) tank, a price only $100,000 dollars less than CB&I's price quoted to [ ] in 1998 for its 120,000 cubic meter tank. (CX 226 at CBI-PL044979; RX 157 at [ ] 02 004, *in camera*). CCFF 787.

890. PDM's price to Columbia for the Cove Point tank was [ ], although CB&I believed it to be approximately [ ]. (CX 1058 at PDM-HOU017465, *in camera*; CX 226 at CBI-PL044979).

891. PDM's quote of [ ] for the Cove Point 750,000 barrel (≈120,000 cubic meter) tank immediately preceding the acquisition is almost identical to the pre-acquisition [ ] price that PDM quoted to [ ] in 1998 for the same size tank. Moreover, the two prices lie exactly on the price curves of the bids given to [ ] in 1998. The difference in the two prices is indicated in the following table: [

		[8]
		[9]

]

892. The minuscule difference in the price is accounted for by the slight difference in tank size. The Cove Point tank is 0.6% smaller than the equivalent [ ] tank, and costs 0.6% less than the [ ] tank. (CX 1058 at PDM-HOU017465, *in camera*; RX 157 at [ ] 02 004, *in camera*).

893. CB&I's pre-acquisition [ ] price for the Cove Point 750,000 barrel (≈120,000 cubic meter) tank is almost identical to the pre-acquisition [ ] bid for [ ]'s 120,000 cubic meter tank, and lies exactly on the price curves of the bids given to [ ] for the various sized tanks. (CX 226 at CBI-PL044978; RX 157 *in camera*; CX 1760 (demonstrative), *in camera*). The comparison between the two bids is represented on the following table: [

[8] (CX 1058 at PDM-HOU017465).

[9] (RX 157 at [ ] 02 004 *in camera*).

		[10]
		[11]

[10] (CX 226 at CBI-PL044979).

[11] (RX 157 at [ ] 02 004 *in camera*).

]

894. Like the PDM bid, the minuscule difference in CB&I's price is accounted for in the slight difference in tank size. The Cove Point tank is 0.6% smaller than the equivalent [ ] tank, and costs 0.5% less than the [ ] tank. (RX 157 at [ ] 02 004, *in camera*).

895. Overall, the [ ] CB&I price proposed by Mr. Marine for the 119,237 cubic meter (750,000 barrel) Cove Point LNG tank is only [ ] below CB&I's equivalent price quotation for the same size [ ] tank. (RX 157 at [ ] 02 004, *in camera*; CX 226 at CBI-PL044979).

896. PDM's [ ] price to Columbia for the 750,000 barrel tank, as of March 29, 2000, was *equivalent* to its price quote to [ ] for the same size tank after accounting for the difference in price and size. (CX 1058 at PDM-HOU017465; RX 157; CX 1760 (demonstrative), *in camera*, emphasis supplied).

897. When CB&I and PDM sharpened their pencils to compete for projects before the acquisition, both firms were forced to maintain a price that was within a close range of their costs in order to win contracts. The price curve established with CB&I and PDM's bids to [ ] in 1998 still accurately depicted a competitive range of pricing in late 2000.

12. *Phase II: Post-merger, CB&I Has Increased Prices*

898. At the time that the letter of intent was signed on August 29, 2000, Williams had already increased the specifications of the proposed Cove Point tank to 850,000 barrels (135,135 cubic meters) and initiated another round of bidding. (Scorsone, Tr. 4964-6; Harris, Tr. 8061-2; *See* Price, Tr. 539 (one cubic meter of liquid x 6.29 = barrels of liquid)); CCFF 789.

899. At this point in the bidding process, CB&I declined to further pursue a contract for the Cove Point tank. Based on the fact that CB&I and PDM had met and discussed pending bids, it is reasonable to infer that Respondents had either implicitly or explicitly agreed that CB&I not bid. (Scorsone, Tr. 5113; CX 617 at 6; Thompson, Tr. 2068; CX 1705 at PDM-HOU009169).

900. On September 8, 2000, PDM sent new budgetary prices for both a 750,000 barrel and 850,000, barrel tank. (CX 1388 at CBI/PDM-H 4015363; CCFF 792. PDM would charge [ ], for a 750,000 barrel LNG tank, and [ ] for an 850,000 barrel LNG tank. (CX 1388 at CBI/PDM-H 4015363).

901. On September 8, 2000, PDM's price for the 850,000 barrel tank was [ ], *i.e.*, [ ], more than its price for the 750,000 barrel tank. (CX 1388 at CBI/PDM-H 4015363 *in camera*). This difference is consistent with, and only slightly more than, the [ ] difference in the equivalent prices quoted by PDM to [ ] for these size LNG tanks. (RX 157 *in camera*; CX 1760 (demonstrative), *in camera*).

902. Although the price quotations that [ ] received from CB&I, PDM, and Whessoe did not include a quote for a 135,135 cubic meter (850,000 barrel) tank, the range of bids that [ ] received can be used to calculate prices for a 135,135 cubic meter single containment LNG tank. (RX 157 at [ ] 02 004 *in camera*). The prices quoted by the three companies for a 120,000 cubic meter tank and for a 140,000 cubic meter tank, and the interpolated prices for a 135,135 cubic meter (850,000 barrel) LNG tank, are shown in the table below: [

] (*Id*.)

903. CB&I's and PDM's [ ] price quotations for a 120,000 cubic meter LNG tank and for a 140,000 cubic meter LNG tank show that over this range the percent increase in the price of the tank is substantially smaller than the percent increase in the capacity of the tank. (RX 157 at [ ] 02 004 *in camera*; CX 1760 (demonstrative), *in camera*).

904. [

] (RX 157 at [ ] 02 004 *in camera*; CX 1760 (demonstrative), *in camera*).

905. [

]. (CX 1388 at CBI/PDM-H 4015363, *in camera*).

906. PDM's [ ] adjustment for the difference in tank size does not explain the movement of PDM's entire price curve after the letter of intent was signed nor other subsequent price increases post-acquisition.

907. PDM's September 8, 2000 bids reflect an overall price increase, and suggest that, after the letter of intent was signed, the price curve for PDM jumped to higher levels than PDM's price curve pre-acquisition. PDM's September 8, 2000 Cove Point bids indicate a [ ] increase above its equivalent pre-acquisition price quotes to [ ] for the same size tanks. (CX 1388 at CBI/PDM- H 4015363; RX 157 *in camera*; CX 1760 (demonstrative) *in camera*, emphasis supplied).

908. Moreover, PDM's proposed price for the 850,000 barrel tank, was also [ ] above PDM's interpolated price quote for an 850,000 barrel (135,135 cubic meter) LNG tank. (CX 1388 at CBI/PDM-H 4015363; *See* RX 157 at [ ] 02 004 *in camera*; CX 1760 (demonstrative), *in camera*).

909. On November 1,2 and thereafter, PDM raised the price quote on Cove Point: to [ ] on November 1; to [ ] on November 2; to [ ] thereafter. Each of these price increases was well above PDM's pre-merger price curves. (CX 1160 at CBI/PDM-H 4007485, *in camera*; CX 1388, *in camera*; RX 157 at [ ] 02 004, *in camera*; Scorsone, Tr. 5333, *in camera*).

910. CB&I's current price of [ ] for the Cove Point LNG tank is [ ] above CB&I's equivalent [ ] price of [ ] for a tank of that size, and [ ] above PDM's equivalent [ ] price of [ ] price for the same size tank. ([, Tr. 5333 *in camera*; RX 157 at [ ] 02 004 *in camera*; CX 1760 (demonstrative) *in camera*).

911. While increasing the price of the Cove Point LNG tank since the acquisition, CB&I has still maintained the price below Whessoe's interpolated price of [ ] million for a tank of that size. (RX 157 at [ ] 02 004 *in camera*; CX 1760 (demonstrative) *in camera*). CB&I could still increase the price of the [ ] Cove Point LNG tank by an additional [ ] before reaching Whessoe's equivalent price for that size tank. (RX 157 at [ ] 02 004 *in camera*; CX 1760 (demonstrative), *in camera*).

13. *The [ ]/Cove Point Comparison Shows that Foreign Firms Cannot Restrain CB&I as Effectively as PDM*

912. The following graph shows the history of PDM's and CB&I's prices for the Cove Point LNG tank, from early 2000 through December 2002, as well as the price quotations submitted to [ ] by CB&I, PDM and Whessoe for various size single containment LNG tanks. Trend lines show approximate prices for CB&I, PDM and Whessoe for intermediate tank sizes.

913. The most important point made by the graph is that PDM and CB&I's pricing after the letter of intent was signed *does not fall within a range of any price curve.* CB&I's current pricing, reflected on the graph, shows the lack of pricing methodology in the post-acquisition period when compared with pre-acquisition levels of pricing to [ ] or Columbia Gas.

[

IN CAMERA

]

914. As shown in the above graph, PDM's initial price to Columbia for the Cove Point LNG tank, approximately [ ], was substantially [ ] above PDM's corresponding price quote to [ ] of [ ] interpolated for the same size tank, 750,000 barrels (119,237 cubic meters). (*in camera*)

915. As further shown in the above graph, CB&I's price to Columbia of [ ], as recorded in CB&I's March 3, 2000, Bid Review, is substantially below PDM's initial price quotation and slightly (5.3%) above CB&I's price quote to [ ] of [ ] interpolated for the same size tank, 750,000 barrels (119,237 cubic meters). (RX 127 at CBI-H008204).

916. As recognized by the customer and recognized by CB&I's Mr. Marine, competition from CB&I, prior to the acquisition, brought PDM's price down to [ ], 6% below PDM's corresponding price quote to [ ], interpolated for a tank of approximately the same size, and exactly on the price quote trendline to [ ] for the 750,000 barrel tank. (CX 226 at CBI-PL044978).

917. As further shown in the above graph, CB&I's proposed price, as recommended by Mr. Marine on March 29, 2000, is exactly on CB&I's price quote trendline to [ ] for the 750,000 barrel (119,237 cubic meter) tank.

918. As further shown in the above graph, PDM's September 8, 2000, price quotes to Williams for the 750,000 barrel LNG tank is [ ] higher than PDM's March 2000 price of [ ] as estimated by CB&I's Mr. Marine. (CX 226 at CBI-PL044978; CX 1388 at CBI/PDM-H 4015363).

919. As further shown in the above graph, PDM's September 8, 2000 price quotes to Williams are above PDM's equivalent price quotes to [ ] for the same size tanks. The price quote to Williams is approximately [ ] above the equivalent price quote to [ ] for the 750,000 barrel (119,237 cubic meter) LNG tank and [ ] above the equivalent price quote to [ ] for the 850,000 barrel (135,135 cubic meter) LNG tank. (RX 157 at [ ] 02 004; CX 1388 at CBI/PDM-H4015363, *in camera*).

920. As further shown in the above graph, PDM's September 8, 2000, price quotes to Williams, show a [ ] difference in price between the 750,000 barrel tank and the 850,000 barrel LNG tank approximately equivalent to the [ ] difference in price indicated by the trend line for PDM's price quotes to [ ]. (CX 1388 at CBI/PDM-H 4015363, *in camera*).

921. As further shown in the above graph, PDM's November 1, 2000, estimate of [ ] million for the 850,000 barrel (135,135 cubic meter) LNG tank is [ ] higher than PDM's initial price of approximately [ ] for the 750,000 barrel tank, before

competition from CB&I forced PDM to reduce its price. (CX 1160 at CBI/PDM-H 4007485, *in camera*; CX 226 at CBI-PL044978).

922. The [ ] increase in price is almost identical to the [ ] difference in price for the two size tanks contained in PDM's September 8, 2000, price quote to Williams, and is comparable to, and only slightly higher than, the [ ] difference between PDM's equivalent price quotes to [ ] for those size tanks: [ ] for a 750,000 barrel (119,237 cubic meter) tank and [ ] for an 850,000 barrel (135,135 cubic meter) tank). (CX 1388 at CBI/PDM-H 4015363; RX 157 at [ ] 02 004, *in camera*).

923. [

]. (CX 226 at CBI-PL044978; CX 1388 at CBI/PDM-H 4015363, *in camera*; CCFF 785.

924. As further shown in the above graph, PDM's further [ ] increase in the price of the tank, following Mr. Scorsone's November 1, 2000, meeting to review the price prior to submitting PDM's bid to Williams on November 2, 2000, brought the price up to [ ], [ ] above PDM's [ ] interpolated price quote to [ ] for an 850,000 barrel (135,135 cubic meter) tank. (RX 157 at [ ] 02 004; CX 1160 at CBI/PDM-H 4007485, *in camera*).

925. The above graph further shows the [ ] price CB&I would have bid on the 850,000 barrel tank as stated on CB&I's February 21, 2001, Estimate Summary Sheet. As shown on the graph, the price paid by Williams is [ ] above CB&I's estimate for the tank. (CX 906 at CB&I 031076-HOU, *in camera*). CCFF 818.

926. Finally, the graph shows CB&I's current price of [ ] for the Cove Point LNG tank. As shown in the graph, the current price is [ ] above the price stated on CB&I's February 21, 2001, Estimate Summary Sheet and [ ] above CB&I's interpolated price quote to [ ] of [ ] for the 850,000 barrel (135,135 cubic meter) tank. (, Tr. 5333, *in camera*).

927. As shown in the graph, CB&I could nevertheless increase its current price for the tank by an additional [ ] before reaching Whessoe's interpolated price quote of [ ] to [ ] for the 850,000 barrel (135,135 cubic meter) tank. (RX 157 at [ ] 02 004, *in camera*)

928. Absent the acquisition, CB&I and PDM would have constrained each others' pricing to levels that are within the ranges of the two firms' price curves prior to the acquisition. Because CB&I is now unrestrained, it is now able to increase its price more than [ ] above pricing levels that existed prior to the acquisition.

14. *The Memphis, Tennessee Project: Pre-merger Price Competition Between Respondents*

929. Since Cove Point, CB&I has used PDM's "fat" and "excessive" cost estimates on Cove Point as a benchmark to implement higher prices and margins to other LNG customers.

930. The LNG projects for Memphis Light, Gas & Water ("Memphis") illustrate three important themes of this case. (1) Prior to the merger, CB&I and PDM competed vigorously to win this project, and Memphis benefitted in the form of lower prices (and CB&I suffered in the form of single-digit margins). (2) Prior to the merger, foreign firms – Whessoe and TKK – bid against CB&I and PDM but were not competitive because their costs and prices were at least 40% higher. (3) Since the merger, CB&I recognizes that with the elimination of PDM as its closest competitor and the inability of other firms to replace PDM as a price constraint, CB&I can now raise prices and earn significantly higher margins.

931. In 1994, Memphis sought bids for the construction of a peak-shaving plant in Capleville, Tennessee. (Hall, Tr. 1778-1779; Price, Tr. 650). This peak-shaver would provide additional LNG supply to compensate for peak demand of LNG in the year 2001. (Hall, Tr. 1779).

932. Memphis viewed CB&I and PDM as the most capable domestic suppliers for the project. Clay Hall, project engineer and manager for Memphis, believed that "essentially we had two viable companies in the United States that could compete" for the project – CB&I and PDM. (Hall, Tr. 1799-1800).

933. Memphis sought additional bidders to maximize competition and obtain a lower price. (Hall, Tr. 1800). Memphis encouraged Black & Veatch, an engineering firm, "to team up with a foreign tank builder to compete, " and also encouraged Lotepro, a German engineering firm, to compete in the bidding process. (Hall, Tr. 1799).

934. Black & Veatch partnered with TKK for the LNG tank portion of the project, and Lotepro partnered with Whessoe. (CX 319 at CBI-ATL003104; Hall, Tr. 1804-1805).

935. The prices quoted by CB&I, PDM, Lotepro/Whessoe and Black & Veatch/TKK for the LNG tank portion of the project reflect CBI's and PDM's significant cost advantage vis-a-vis foreign firms. The following chart shows each firm's bid for the LNG tank. (CX 829 at 5; Hall, Tr. 1876; Price, Tr. 648).

Firm	Price
PDM	$10,500,000
CB&I	$10,500,000
Lotepro/Whessoe	$15,000,000

Black & Veatch/TKK	$16,700,000

936. Memphis considered the level of competition between CB&I and PDM to be very "very competitive." (Hall, Tr. 1804).

937. In contrast, Whessoe's bid was 43% higher than CB&I and PDM, and TKK's bid was 59% higher. (*See also* Hall, Tr. 1810; Price, Tr. 561; Kistenmacher, Tr. 901).

938. Lotepro later lamented to CB&I that Lotepro's bid on the Memphis project "was really strained by not being able to include a CB&I or PDM tank, and his current market study prompted his call to discuss whether [CBI's] position [about partnering with Lotepro] may have changed at all since [Memphis]." (CX 184 at CBI-PL012440).

939. To this day, Black & Veatch has "concerns" about whether a foreign tank supplier can provide a "competitive price" against CBI. (Price, Tr. 634-635).

940. PDM was not selected because its specifications for non-tank portions of the project, such as paving the driveways, did not meet Memphis' specifications. (Hall, Tr. 1878-1879).

941. Memphis awarded the contract to CB&I. (Hall, Tr. 1777; CX 46 at CB&I 033870-ATL).

942. CB&I's firm fixed price to Memphis included an [ ] profit margin.

943. The Memphis project shows that foreign firms are at a significant cost disadvantage against CB&I. In the absence of PDM, CB&I's closest competitor, CB&I could have increased its tank price between *43%* and *59%* before one of the foreign firms would have constrained CB&I's bid. *See also Merger Guidelines* § 2.21, n. 21 ("A merger involving the first and second lowest-cost sellers could cause prices to rise to the constraining level of the next lowest-cost seller.").

15. *The Memphis, Tennessee Project: Post-Merger Price Increase by CB&I*

944. In 2002, Memphis sought pricing information for another 300,000 barrel LNG peak shaving tank. (Hall, Tr. 1824-1825).

945. In January 2002, Memphis contacted CBI's Eric Frey, a business development manager. Memphis called CB&I because CB&I is the [ ] that can provide [ ] tank pricing in the United States. (CX 422 at CBI-E009500, *in camera*; Hall, Tr. 1825, 1826, 1827).

946. Memphis did not contact other LNG firms because Memphis cannot "trust" the pricing information from foreign firms. (Hall, Tr. 1828).

947. On January 15, 2002, Mr. Frey e-mailed Marty Smith, a CB&I vice president of global LNG sales, with the proposal to quote Memphis a price that "reflect about a [ ] margin after Total Internal Cost." (RX 732 at CBI 071501, *in camera*).[12]

948. On January 15, Mr. Smith instructed Mr. Frey to quote Memphis [ ] million, almost [ ] higher than what Frey had originally prepared. (RX 732 at CBI 071502, *in camera*; CX 422 at CBI-E 009500, *in camera*; [ ], Tr. 5323, *in camera*). Mr. Smith explained that Mr. Frey's original estimate was [ ] (RX 732 at CBI 071501, *in camera*).

949. On January 16, Mr. Frey quoted Memphis a budget price of [ ] million for a 300,000 barrel tank. (RX 732 at CBI 071499-500, *in camera*).

950. On July 17, 2002, Clay Hall of Memphis e-mailed Mr. Frey to comment that "we all know that CBI/PDM is, in fact, the only qualified US based firm capable of executing the work." (CX 786 at CBI 065153).

951. Mr. Hall added that Memphis is "concerned about where we're going to get competition for our bids in the next few years ... because we don't see anyone out there with experience that could come into the market and compete with CBI/PDM." (Hall, Tr. 1830).

952. Based on the 1995 Memphis bidding experience, CB&I knew that it had a competitive advantage against foreign firms. Joe Godown, a CB&I employee, wrote in a November 30, 1994, e-mail that there was an absence of "tough competition" from foreign firms because an "economical" LNG tank price was not "available" from Whessoe. (CX 319 at CBI-ATL003104). Carroll Davis, a CB&I vice president, observed that Whessoe's and TKK's bids "did not turn out to be very competitive." (CX 184 at CBI-PL012440).

953. Respondents presented no evidence that its post-merger pricing to Memphis was negatively impacted by any competitor, foreign or domestic.

954. In the 1995 Memphis bidding contest, CB&I had to bid at a low price that garnered it only an [ ] margin in order to beat PDM. Post-merger, unrestrained by PDM and knowing that foreign firms cannot provide an "economical" or "very competitive" price, CB&I exercised market power by offering a higher price that includes at least a [ ] margin, a nearly four-fold increase from pre-merger levels.

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[12] Frey testified at his deposition that the [ ]% margin quoted to Memphis represented "about [ ] of what you want to call margin on this other estimate and about [ ]% of cushion." (CX 416 at 71 ([ ]), *in camera*). Assuming the [ ]% margin is comprised of a [ ]% "margin" and a [ ]% "cushion," as Frey contended, CB&I's margin still represents a [ ]% increase over pre-acquisition margins.

16. *The Fairbanks, Alaska Project: Post-Merger Price Increase by CB&I*

955. The LNG project for Fairbanks Natural Gas, LLC in Alaska ("Fairbanks") illustrates that, since the merger, CB&I recognizes that the elimination of PDM as its closest competitor and the inability of other firms to replace PDM as a price constraint provide CB&I with the opportunity to raise prices and earn significantly higher margins.

956. In 2002, Fairbanks explored the possibility of expanding its storage capacity with a field-erected LNG tank. Fairbanks considered LNG tanks capable of storing one million and five million gallons. (CX 370 at 21, 30 (Britton, Dep.); Simpson, Tr. 3107).

957. Fairbanks retained the services of CDS Research, an LNG consulting firm, to assist in the project. CDS Research helped prepare a budget for the project. CDS Research's methodology consisted of taking the "industry standard for benchmarking at costs per gallon and then factored in an adjustment factor for size of the tank and referred back to ... recent projects to kind of do a comparison ... " (CX 370 at 97 (Britton, Dep.)).

958. CDS Research's analysis included a "15% adjustment factor on the industry standard for size of the facility ... the industry standard budget pricing for the size." (CX 370 at 98 (Britton, Dep.)).

959. Based on CDS Research's analysis, Fairbanks concluded that a one-million gallon field-erected LNG tank would cost approximately $2.2 million dollars. (CX 370 at 18, 19, 21 (Britton, Dep.)). Fairbanks further concluded that the total cost of the LNG tank and the necessary systems would be approximately $5 million. (CX 370 at 46-8 (Britton, Dep.)).

960. CDS Research contacted multiple tank suppliers in order to create a competitive bidding situation for Fairbanks. CDS Research found that suppliers were unwilling to provide budgetary pricing information. (CX 370 at 33 (Britton, Dep.)).

961. The only firm willing to submit pricing information was CBI. Having only one competitor left Fairbanks in an undesirable position because it prefers to "have more than one company to get quotes from." (CX 370 at 89 (Britton, Dep.); *see* Simpson, Tr. 3120 (Dr. Simpson concluded that foreign builders of LNG tanks were not interested in building this tank for Fairbanks)).

962. On May 17, 2002, CB&I prepared a total budget price of $14.2 million for the turnkey services provided on the one million gallon tank.[13] (RX 407 at CB&I 066666; *see* Simpson, Tr. 3107 (The 20% margin was much higher than margin levels prior to the acquisition).

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[13] CB&I quoted a total budget price of $18 million for the same service on the five million gallon tank. (RX 407 at CB&I 066664-066665; CX 370 at 42 (Britton, Dep.)).

963. CB&I's internal estimate worksheet shows that of the $14.2 million total price, the price of the one-million gallon tank was $3.6 million. (RX 407 at CB&I 066666).

964. CBI's $3.6 million price was $1.4 million higher than Fairbanks' estimate of $2.2 million based on its consultant's analysis. (RX 407 at CBI 066666; CX 370 at 19 (Britton, Dep.)).

965. Fairbanks expected "margina[l]" cost increases between 1999 and 2002, but saw no reason that such increases would be "significant" enough to raise the tank price by more than 60%. (CX 370 at 21 (Britton, Dep.)).

966. In addition to the $3.6 million for the tank alone, CB&I estimated $7.3 million in other costs for the component systems and plant facilities. (RX 407 at CBI 066666). This $10.9 million figure "includes 20% margin." (RX 407 at CBI 066666). CBI then added 30% to the $10.9 million figure to account for the location. (RX 407 at CBI 066666).

967. Respondents presented no evidence that its post-merger pricing to Fairbanks was negatively impacted by any competitor, foreign or domestic.

17. *Comparing Fairbanks' Post-Merger Price with British Columbia Gas' Pre-Merger Price*

968. From Fairbanks' perspective, CBI's pricing to Fairbanks compares unfavorably with PDM's pricing on a comparable project before the merger.

969. In 1996, BC Gas sought budget prices from PDM for various sized LNG tanks to be built in Vancouver, British Columbia. (CX 791 at PDM-HOU 2015258).

970. PDM's response included a budget estimate of $3.6 million Canadian dollars for a 1.2 million gallon LNG tank. (CX 791 at PDM-HOU 2015260 (the project was calculated was a 1.38 exchange rate)). Calculating what the price would have been in U.S. dollars in 1996, PDM's price would have converted to $2.6 million. (*See* CX 370 at 94 ("Q: Do you know what the exchange rate was in 1996?/ A: Probably about 1.4.") (Britton, Dep.)).

971. PDM's $2.6 million price to BC Gas was only $400,000 more than the $2.2 million estimate CDS Research provided to Fairbanks, which was based on "industry standard for benchmarking at costs per gallon" and "recent projects." (CX 370 at 97 (Britton, Dep.)).

972. PDM's $2.6 million price was for a 1.2 million gallon LNG tank, whereas Fairbanks sought a 1.0 million gallon tank. Applying a downward adjustment in the price to account for smaller size of the Fairbanks tank, PDM's $2.6 million price to BC Gas would have been lower for a 1.0 million gallon tank. (*See* CX 791 at PDM-HOU 2015258).

973. Dr. Simpson compared the budget price for the Fairbanks project to budget price provided by PDM to BC Gas in 1996 for a 1.2 million- gallon LNG tank. The expert found that the

low end for the range of accuracy for the Fairbanks price exceeded the high end for the range of accuracy for the BC Gas price by approximately 20 percent. (Simpson, Tr. 3108-3110; CX 791).

974. Dr. Simpson testified that he did not believe that general inflation could account for the price increase (Simpson, Tr. 3110). Dr. Simpson noted that wages for construction workers had increased about 4 percent per year between the two bids, but that steel prices had fallen during this period and that CB&I and PDM had become more efficient over time (Simpson, Tr. 3110).

975. Dr. Simpson did not believe the location of the LNG tank in Fairbanks could explain the price increase because the tank in British Columbia was also located in a remote area. (Simpson, Tr. 3110-11).

976. Finally, Dr. Simpson testified that he did not believe that the price difference could be explained by a lower cost for Canadian labor because the field erection cost of a project is only about 25 percent of the price and because PDM did not have a trained work force in western Canada in 1996. (Simpson, Tr. 3111 (citing to CX 1204)).

977. Using and factoring all of the variables that should have made CB&I's Fairbanks price equal to, if not lower than, PDM's BC Gas price, PDM's pre-merger price to BC Gas of $2.6 million on a 1.2 million gallon tank as a benchmark, CBI's post-merger price to Fairbanks of $3.6 million on a 1.0 million gallon tank appears anticompetitive.

18. *The Dynegy Project: CB&I Attempts to Exercise Market Power*

978. The LNG project for Dynegy illustrates two important themes of this case. (1) CB&I recognizes that with the elimination of PDM as its closest competitor and the inability of other firms to replace PDM as a price constraint, CB&I will attempt to leverage its market power and force customers to accept CBI's terms and forego competitive bidding. (2) If a customer balks, CB&I will walk away and leave the customer to deal with higher-priced competitors.

979. In 2001, Dynegy announced that it would build an LNG regasification facility containing three LNG tanks in Hackberry, Louisiana. (Puckett, Tr. 4540).

980. On the Dynegy project, in order to maximize competition and obtain the best price, Dynegy chose to "break the project up into pieces," rather than let one firm handle all phases of the project on a turnkey basis. (Puckett, Tr. 4543-44). CCFF 843. Dynegy separated the LNG tank contract from the EPC contract and sought competitive bidding for the LNG tanks. (Puckett, Tr. 4544). Dynegy's project manager explained that Dynegy chose to competitively bid the LNG tanks because "experience has shown us that when we can competitively bid a project...we will typically get what we think will be the best value." (*Id.* at 4571).

981. In order to minimize competition and obtain the highest margin, CB&I attempted to force Dynegy to accept CB&I as a turnkey contractor so that it could supply the LNG tanks as well as facilitate the other portions of the project.

982. Dynegy included CB&I on a list of prospective candidates to competitively bid for the FEED study, but CB&I "elected at that time to remove [its] name from consideration for performing the FEED study." (CX 518 at CBI 019777-HOU; *see also* Glenn, Tr. 4244 (Glenn confirmed that CB&I elected not to participate in the FEED study proposal because it did not want to send its facility information on the tanks for others to evaluate)).

983. Dynegy used a competitive bidding process to select its EPC contractor. Seeking as many competitors as possible, Dynegy interviewed CB&I, Kvaerner, Technip, Skanska, KBR, and Bechtel. (Puckett, Tr. 4544-46).

984. CB&I refused to bid on the EPC portion of the project if it could not construct the facility on a turnkey basis, *i.e.*, be the entity that would perform the EPC function, including selecting the LNG tank supplier, and the entity that supplied the LNG tanks. (Glenn, Tr. 4242; Puckett, Tr. 4570). On November 20, 2001, Michael Miles, CBI's representative to Dynegy, alerted Dynegy that CB&I would not bid because of an "internal company decision" that the "project as structured does not fit our corporate strategy." (CX 139 at CBI 019781-HOU; *see also* Glenn, Tr. 4242).

985. CB&I preferred to bid Dynegy turnkey because "[t]urnkey, design build projects typically return higher margins than stand alone storage tank projects." (CX 660 at PDM-HOU005013). Executives at CB&I such as Mr. Scorsone acknowledge that turnkey is indicative of "higher margins" to many industry participants. (Scorsone, Tr. 2812-13; *see* CX 431 at 46 (Glenn, Dep.)).

986. Dynegy's point person on the Hackberry project, William Puckett, understood CBI's position to be that CB&I was "not interested in participating in the terminal portion of the project if [Dynegy was] going to competitively bid the LNG tanks." (CX 518 at CBI 019777-HOU; Puckett, Tr. 4558; CX 1528 at CBI 071381 ("CB&I...would not competitively bid the LNG tanks")).

987. Acceding to CB&I's ultimatum would have denied Dynegy the fruits of competitive bidding – lower LNG tank prices. Thus, on August 3, 2001, Dynegy informed CB&I that it was dropped from consideration on the EPC contract. Dynegy reasoned that CB&I could not be expected to "provide a competitive price for the LNG tank, given that this scope would be self-performed by CB&I." (CX 516 at CBI 019867-HOU).

988. CB&I urged Dynegy to reconsider. (Puckett, Tr. 4559; Glenn, Tr. 4245; CX 516 at CBI 019867-HOU). CBI's tactic was to remind Dynegy of the regulatory difficulties Dynegy would face without CB&I's experience and contacts. On August 14, 2001, Miles wrote Dynegy that "CB&I brings unmatched experience in preparing the documents describing the facility that are necessary for permitting and/or filings for FERC authorization permits... This critical stage of your project in Hackberry is best undertaken by CB&I, whom the permitting agencies, most especially FERC, know and respect." (CX 516 at CBI 019867-HOU, CBI 019868-HOU).

989. On October 17, 2001, Dynegy chose Skanska, who would work with Black &

Veatch, to perform the EPC portion of the project. (Puckett, TR. 4547-48; CX 138 at CBI 019913). Skanska was chosen because it agreed to Dynegy's condition that the LNG tank supplier be selected from a competitive bidding process open to multiple suppliers, not just itself. (CX 138 at CBI 019913-HOU).

990. In late 2001, Dynegy solicited tank pricing from CB&I, TKK/ATV, Technigaz, and Skanska/Whessoe. (Puckett, Tr. 4552-53). Black & Veatch was eager to have CBI's bid because of "concerns that if we do not have a domestic tank price for that project that the prices that [Dynegy] would receive for those tanks would be higher." (Price, Tr. 622).

991. CB&I refused to submit its LNG tank pricing information to Dynegy's EPC contractor, the Skanska/Black & Veatch team. (CX 517 at CBI 019784-HOU).

992. CB&I believed that construction by CB&I of the LNG tanks would aid Skanska in observing CB&I's crews, suppliers and construction methods. (CX 1528 at CBI 071381). In an October 22, 2001 internal e-mail, CBI's Marty Smith advised Miles against submitting a bid to Dynegy: "Mike, right now I can't see any merits to bid the tanks to this group. Besides Skanska, B&V is also a competitor... They may eventually get here but we don't need to give them any assistance." (CX 1528 at CBI 071381).

993. CB&I advised Dynegy that it would submit a price for the LNG tanks only "directly to Dynegy" and that the bid would only be "a lump sum, firm fixed price proposal for the total EPC scope of the project." (CX 517 at CBI 019784-HOU).

994. Dynegy rejected CB&I's conditions, and CB&I chose not to submit a bid for the LNG tanks. (CX 518 at CBI 019777-HOU; Puckett, Tr. 4556-7; Glenn, Tr. 4248).

995. Because CB&I refused to bid, Dynegy was "very concerned" about "maintaining competition" for the LNG tank. (Price, Tr. 609). Dynegy attempted to persuade CB&I to rethink its position: Dynegy "invested time and effort to insure that there would not be any conflict of interest," by establishing a procedure whereby CB&I's and other tank bids would be evaluated by someone other than Skanska. (CX 518 at CBI 019777-HOU). Dynegy offered that if this procedure was not sufficient, CB&I should "please let us know what would meet your needs to bid the LNG tanks." (CX 518 at CBI 019777-HOU).

996. By the time CB&I changed its mind, it was too late. Dynegy felt compelled to decline CBI's offer to bid "due to both the timing ... it was so late in the bidding cycle in that we had received bids, if I recall, that I did not feel it would be fair to the other bidders." (Puckett, Tr. 4572).

997. Dynegy is likely to pay a higher price for the LNG tanks supplied by TKK, Whessoe or Technigaz than it would if CB&I had bid.

998. Dynegy does not have the "staff, experience and knowledge to analyze the bids and make an informed decision," so it must rely on the analysis of its consultants about LNG tank prices.

(CX 138 at CB&I 019913-HOU).

999. Dynegy's consultant, Brian Price of Black & Veatch, was involved in the bidding for the Memphis project in 1994 and has first-hand knowledge about the higher prices of foreign suppliers. There, Black & Veatch partnered with TKK against CBI, PDM and Lotepro/Whessoe. As explained earlier, TKK's LNG tank price was at least 43% higher, and Whessoe's price was at least 59% higher than CB&I's and PDM's tank prices. CCFF 937.

1000. Based on his experience on the Memphis project and industry knowledge, Mr. Price expressed "concerns" that the price Dynegy will pay for the LNG tanks would be "higher" without CBI's participation in the bidding. (Price, Tr. 622).

1001. CB&I also knows that its LNG prices in the United States are lower than the prices of its Dynegy competitors. CB&I learned from the Memphis bidding example that foreign firms could not provide "economical" or "competitive" LNG prices. CCFF 952, 939. CB&I tells the public in its SEC filings that it has a "competitive advantage" against foreign firms because of its superior knowledge of local business conditions. CCFF 426. CBI's merger integration and planning documents state that CB&I will use its "pricing advantage" against foreign competitors to its strategic advantage. CCFF 433.

1002. Technigaz cannot provide competitive tank prices. Technigaz/Zachry submitted a bid for the LNG tanks, but [ ] in August of 2002. (Fahel, Tr. 1632, *in camera*).

1003. It remains to be seen whether the Dynegy project can be completed on a reliable and timely basis, in the same manner that CB&I and PDM did throughout the 1990s when they won every LNG project in the United States. Black & Veatch is concerned that the foreign suppliers will not meet Dynegy's construction schedule, a concern Black & Veatch would not have had with PDM. (Price, Tr. 626-628).

1004. Respondents contend that the Dynegy project demonstrates that entry by foreign firms has occurred and is sufficient to restrain CB&I from engaging in anticompetitive conduct. Respondents' contention is belied by Gerald Glenn's statements to the investment community on October 31, 2002, which is void of any perceived competitive threat:

> Well, I don't know that there are fewer. There are some that have run on hard times. There are those that have stubbed their toe. You know, you're only as good as your last job. And we're really proud of the fact that, you know, a lot of owners out there, if they go to build a sophisticated project, like an LNG project or an LNG tank, **they don't want to take a chance on a low price and a potential second class job or shoddy welding or any of that kind of stuff**. The kind of work that we do is very specialized, very sophisticated. We have an excellent track record.

> And we think that, short of somebody coming in, which they do, and just taking a big dive on the price, that we can win the work every time technically. **And if they want to dive in and take the work for less than they can execute it for, that's fine, we'll just sit and watch them go out of business, too.**

(CX 1731 at 44-45) (emphasis supplied).

1005. Respondents presented no evidence that CB&I's post-merger strategy with Dynegy was influenced by the presence of TKK, Technigaz and Whessoe. While Respondents point to the fact that some foreign firm will likely win the LNG tank contract with Dynegy, Respondents did not present any business documents indicating that its executives felt competitive pressure because of the foreign suppliers.

1006. The teaching of the Dynegy project is that CB&I attempts to leverage its dominant position against customers in order to extract higher prices and margins. In order to avoid CBI's stranglehold, some customers perceive no other choice but to seek inferior alternatives. This is neither competition nor sufficient entry. It is an anticompetitive effect.

19. *The Yankee Gas Project: CB&I Attempts to Exercise Market Power*

1007. The LNG project for Yankee Gas is similar to the themes of the Dynegy project, except that with Yankee Gas, CBI's strong-arm tactics have achieved considerable success.

1008. In 2001, Yankee Gas, a natural gas distribution company, initiated plans to construct a 360,000-barrel LNG peak shaving facility in Waterbury, Connecticut. (JX 21 at 17-18 (Andrukiewicz, Dep.)).

1009. During the first quarter of 2001, Yankee Gas retained the services of CHI Engineering ("CHI"), a consulting firm, to perform a preliminary engineering and budget study. (JX 21 at 23 (Andrukiewicz, Dep.); CX 1507 at CBI 059483).

1010. On April 23, 2001, CHI issued a request for prices exclusively for the LNG tank portion of the project rather than "facility turnkey pricing." (CX 1507 at CBI 059483).

1011. CHI's request was sent to CB&I, Skanska/Whessoe and Technigaz. (CX 1507 at CBI 059483; JX 21 at 24 (Andrukiewicz, Dep.)).

1012. As with the Dynegy project, CB&I did not want to deal with a middleman. CB&I wanted the owner's ear alone and refused to submit pricing information unless it was selected as the turnkey contractor.

1013. On May 4, 2001, Frey wrote Chris Beschler, VP of Operations at Yankee Gas, that CB&I wanted to do the work on a turnkey basis, emphasizing its experience and capability in that type of project. (CX 417 at CBI 026845-6-HOU).

1014. CB&I told Yankee Gas that it would not submit pricing information for the tank portion to CHI because CHI was a "competitor," even though in its own internal documents CB&I refers to CHI as a "relatively small consulting/engineering firm" in New Hampshire. (CX 430 at CBI 026934-HOU; CX 1507 at CBI 059483). There is no evidence that CHI has ever constructed any kind of field-erected storage tank in the United States.

1015. CB&I's Eric Frey, the sales representative to Yankee Gas, vowed to "make every effort to restructure how the project will be bid and executed." (CX 430 at CBI 026934-HOU).

1016. CB&I acquiesced only slightly to Yankee Gas' request that CB&I temporarily table the turnkey issue, and first provide pricing information for the LNG tank alone. Frey "agreed but indicated [to Yankee Gas] that we would not be putting our best numbers on the table until we had the opportunity to meet directly with Yankee Gas." (CX 1507 at CBI 059483). Frey instructed his team to prepare budgetary pricing "with very little detail." (CX 430 at CBI 026934-HOU). In the meantime, Frey would "continue to pursue a meeting with Yankee Gas as soon as possible." (CX 430 at CBI 026934-HOU).

1017. On June 27, 2001, CB&I submitted a range of budget prices "with very little detail" to CHI for the tank portion of the project. (CX 1507 at CBI 059483; CX 430 at CBI 026934-HOU).

1018. CB&I understood that Yankee Gas was relatively inexperienced in the LNG industry and would have to rely on consultants to advise it on tank pricing. At a September 8, 2001, meeting with CB&I, Yankee Gas "readily admitted that they know very little about the LNG industry and that they were banking heavily on the report from CHI." (CX 1507 at CBI 059484).

1019. In October of 2001, CHI announced its "intent to bid the [Yankee Gas] project turnkey." (CX 1507 at CBI 059484).

1020. [

] (CX 1507 at CBI 059484; *see also* CX 787 at CBI 065244, *in camera*) ([

])).

1021. As CB&I had direct access to Yankee Gas, CHI turned to turn to higher-priced foreign firms for bids on the LNG tank. CHI received pricing information from Whessoe and Technigaz. (JX 21 at 24 (Andrukiewicz, Dep.); CX 1507 at CBI 059484).

1022. CB&I knows from the Memphis bidding experience and other sources that Whessoe and other foreign firms cannot provide "economical" or "competitive" LNG tank prices in the United States. CCFF 952, 939.

1023. Reasonably assured that its Yankee Gas competitors cannot undermine it and without PDM as a restraint, CB&I is free to exercise market power. Thus, CB&I's budget estimate for the Yankee Gas project anticipates a margin of [ ], well-above its pre-merger levels. (RX 54 at CBI 026812-HOU, *in camera*; CX 421 at CBI 026843-HOU; [ ], Tr. 5317, *in camera*). CB&I cited the price paid for the Cove Point LNG tank in setting the price for Yankee Gas. (CX 421 at CBI 026843-HOU ("Yankee Gas margin [ ], Cove Point sold @ [ ] with [ ] profit")).

1024. [ ]. (CX 787 at CBI 065242, *in camera*).

1025. Respondents presented no evidence that its post-merger strategy with Yankee Gas was negatively impacted by any competitor, foreign or domestic.

1026. If PDM had not been acquired by CB&I, Yankee Gas would be in a better negotiating position because it would have had three bidders instead of two today, one of whom – CHI – appears to have little experience in the construction of LNG tanks. Marc Andrukiewicz, Director of Gas Management at Yankee Gas, confirms that if PDM "were a separate entity ... I would be looking to as many potential constructors of these facilities as is reasonably possible to ask to bid. That serves our company the best." (JX 21 at 55 (Andrukiewicz, Dep.)).

20. *Post-Merger LNG Margins Are Substantially Higher than Pre-Merger Margins*

1027. Respondents' business records show pre-merger margins on LNG projects ranging from [ ] to [ ]. CCFF 1029-1033, 1037.

1028. CB&I's business records show post-merger margins on LNG projects ranging from [ ] to above [ ]. CCFF 1038-1041.

1029. A 1997 overview of CB&I's business in North America records that CB&I's "Comparative Margin Levels" for "low temp/cryogenic [all the relevant products]" were 2.5% for "average total work sold," and 8-10% for "negotiated" business. (CX 227 at CBI-PL 045109).

1030. In 1994, Memphis Light, Gas & Water sought bids for an LNG tank to be constructed at Capleville, Tennessee. CB&I quoted a price of $8,668,306 to Memphis Light, Gas & Water for its LNG tank. CB&I's price included a margin of [ ]. (CX 906 at CBI 031074-HOU, *in camera*).

1031. Prior to the acquisition, CB&I was the sole-source contractor for the Pine Needle Peakshaver Project. In 1995, CB&I quoted a price of [ ] for the Pine Needle LNG tank, including a [ ] margin. (CX 906 at CBI 031075-HOU, *in camera*).

1032. In 1997, CB&I priced an LNG tank for Columbia Gas, to be built in Ohio, at [ ], including a margin of [ ]. (CX 168 at CBI-PL007243, *in camera*).

1033. In 1997, Southern Union Company also solicited pricing for an LNG tank to be constructed at Kansas City, Missouri. CB&I submitted a price for the LNG tank of [ ] with a margin of [ ]. (CX 613 at CBI-PL010926, *in camera*).

1034. In a 1998 sales document, PDM lists an LNG tank for Westcoast, Vancouver as one with a "Pending Quot[e]" of $26,676,000 with a margin of $2,861,000. (CX 426 at PDM-HOU016215).

1035. In 1999, Citizens Gas sought pricing information for an LNG tank to be constructed at Indianapolis, Indiana. PDM responded with a price of $15,000,000, including a margin of $2,000,000. (CX 1038 at PDM-HOU011315).

1036. In March 2000, CB&I quoted a price of [ ] to Columbia LNG for the Cove Point LNG tank, including a [ ] margin. (RX 127 at CBI-H008204).

1037. PDM's pre-acquisition quote to Columbia LNG for the Cove Point project was [ ], with a profit of [ ] and an SG&A fee of [ ]. (CX 1058 at PDM-HOU017465).

1038. In June 2001, four months after the acquisition, CB&I provided Yankee Gas with pricing information for its LNG Tank to be built in Waterbury, Connecticut. The price provided to Yankee Gas included a [ ] margin. ([ ], Tr. 5317, *in camera*; CX 421 at CBI 026843-HOU).

1039. In January of the following year, CB&I's pricing information to Fairbanks Natural Gas for an LNG tank included a 20% margin on a $14,200,000 tank, as well as an additional 30% padding for the Alaska location. (RX 407 at CBI 66666, 66668, 66672).

1040. When Memphis Light, Gas & Water requested pricing for a new LNG tank to be built at its existing Capleville, Tennessee location in January 2002, CB&I's price to Memphis Light, Gas & Water included a [ ] margin and a [ ] Technology Services Fee. (CX 423 at CBI-E 009509-10, *in camera*).

1041. In June 2002, [ ] sought tank pricing information for its Tampa facility, CB&I quoted a price to [ ] of [ ], including a [ ] margin and a [ ] Technology Services Fee. (RX 643 at CBI 069175, *in camera*).

1042. According to Mr. Scorsone, CB&I's December 2002 pricing for the Cove Point tank is [ ], with a [ ] profit and a [ ] Technology Services Fee. ([ ], Tr. 5313-14; RX 123).

1043. Net profit margins and margin as a percent above cost can be calculated using the above data for both CB&I and PDM's LNG tank projects between 1994 and 2003:

[

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]

1044. Net profit margin ("Profit Margin") is calculated as a percentage of the project price, while margin as a percent above cost ("Margin") is calculated using the equation:

$$\frac{\textbf{Profit Margin+ Technical Service Fee (SG\&A)}}{\textbf{Total Price - (Profit Margin + Technical Service Fee/SG\&A)}}$$ [14]

1045. The table shows that the pre-acquisition unweighted average of the reported profit margins is [ ].

1046. The table also shows that the post-acquisition unweighted average reported profit margin is [ ], a 14.5% increase over pre-acquisition margin levels.

1047. The table also shows that the unweighted average of the pre-acquisition margins is [ ].

1048. The table also shows that the unweighted average of the post-acquisition margins is [ ], a 13.9% increase over pre-acquisition margin levels.

1049. The following graph repeats the information shown in the previous table, and reflects the increase in LNG tank margins post-acquisition calculated as percent above cost:

[14] (*See* Scorsone, Tr. 4819. ("The gross margin, which these numbers indicate, include the SG&A costs in them....SG&A means sales and general administrative costs plus profit")). [

]. (*e.g.* CX 906 at CBI 031074-HOU, 031075-HOU, *in camera*; CX 168 at CBI-PL007243, *in camera*).

[

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]

1050. The graph demonstrates that prior to the acquisition, margin levels ranged from [ ] to [ ].

1051. The graph also demonstrates that post-acquisition, margin levels increased, ranging from [ ] to [ ].

1052. The highest margin quoted by PDM and CB&I to customers before the acquisition as a percent of cost is [ ]. The lowest margin quoted to customers by CB&I post-acquisition is [ ], 1.81% higher than the highest margin quoted before the acquisition.

C. The Merger Has Had Actual Anticompetitive Effects in the LIN/LOX Market

1053. Since the merger, CB&I has implemented the same 8.7% price increase on at least three different occasions: (1) to Linde BOC Process Plants LLC in April of 2002; (2) to Praxair in April of 2002; and (3) to Praxair again in June of 2002.

1054. The 8.7% price increase contrasts dramatically to the period prior to the merger when CB&I and PDM would routinely undercut each other by slashing prices to the point of negative margins. CCFF 1090.

1055. Respondents presented no evidence that CB&I's post-merger pricing on these three instances were negatively impacted by any competitor, foreign or domestic.

1056. A fourth example of the anticompetitive effects of the merger involves MG Industries. This situation highlights how customers are handicapped by the absence of PDM as a leverage point against CB&I.

1057. These four instances illustrate that, since the merger, CB&I recognizes that the elimination of PDM as its closest competitor and the inability of other firms to replace PDM as a price constraint provide CB&I with the opportunity to raise prices and earn significantly higher margins.

1. *The Linde-New Mexico Project: CB&I Raises Prices by 8.7%*

1058. In 2002, Linde BOC Process Plant LLC ("Linde") sought bids for a 344,000 gallon LIN/LOX tank to be located in Farmington, New Mexico ("Linde-New Mexico"). (Fan, Tr. 1002; CX 1344 at LPPI 0000259).

1059. Chung Fan was Linde's manager for evaluating prices of LIN/LOX suppliers and recommending which vendor should be selected. (Fan, Tr. 1021). Fan has 20 years of experience reviewing pricing information from LIN/LOX suppliers. (Fan, Tr. 946, 953). Linde has always followed Fan's recommendations concerning which LIN/LOX tank suppliers to select. (Fan, Tr. 1022).

1060. Prior to the merger, Linde purchased most of its LIN/LOX tanks from PDM. (Fan, Tr. 1023). Linde found PDM's prices reliable because its final price did not deviate significantly from its budget price. (Fan, Tr. 1023). In its "LNG 2000" customer slide presentation, PDM cited as a contracting innovation a "Phased Contracting" procedure in which the first phase would include "enough design to come up with a fixed firm price for Phase II." (CX 124 at PDM-HOU 2011162-63).

1061. Linde sent requests for quotes to AT&V, Matrix and CB&I. (Fan, Tr. 960, 962, 1002). Linde requested a "close to firm plus or minus 5% price." (Fan, Tr. 1002).

1062. Linde was "very anxious" to see the price quotes for the Linde-New Mexico project

because it wanted to know what would happen to prices with PDM absent from the picture. (Fan, Tr. 1003).

1063. AT&V quoted a firm-fixed price of approximately $600,000. (Fan, Tr. 960-961). Matrix responded with a firm-fixed price of over $900,000. (Fan, Tr. 962).

1064. On April 17, 2002, CB&I disregarded Linde's instructions and responded with a "budget" price, rather than a firm-fixed price as Linde had requested. (CX 1344 at LPPI 0000259; Fan, Tr. 1002-1003; *see* Harris, Tr. 7506-07 ("Linde made a request for a firm price, but the actual price that they received was a budget price.")). CB&I's "budget" price was $814,000. (CX 1344 at LPPI 0000261).

1065. Fan agreed that he did not consider AT&V's price "reliable" because it diverged so widely from CB&I and Matrix. (Fan, Tr. 963). Fan could not see "how [AT&V] can they (sic) be able to do it so cheap compared to CB&I." (Fan, Tr. 963). Fan reasoned that if AT&V's price was reliable, "CB&I should be out of business." (Fan, Tr. 963). In addition, Mr. Fan did not believe that AT&V had the necessary experience to construct the tank: "their [AT&V's] tank has not been operating for many years." (Fan, Tr. 998).

1066. Fan dismissed Matrix because its "price for non-union tank was always high." (Fan, Tr. 1019).

1067. Fan compared CB&I's quote with a PDM quote from a year earlier and thought "Wow, it...went up." (Fan, Tr. 1004).

1068. In order to confirm his belief that CB&I had increased prices since the merger, Fan analyzed CB&I's price with a pricing model that Linde routinely uses to distinguish between reasonable and unreasonable price quotes from vendors. (CX 1584; Fan, Tr. 966, 1024). Using the Linde pricing model, Fan is able to accurately estimate the total price of a LIN/LOX tank within as little as 1% of the firm-fixed price that he receives from vendors. (CX 1584 at 1).

1069. Linde's pricing model accounts for multiple variables, including the weight of the metal, the dimensions of the tank, labor rates, field labor, engineering, insulation quality and profit margins. (Fan, Tr. 985-86).

1070. Using the Linde pricing model and past price information from PDM, Fan concluded "quite confidently" that the quote he received from CB&I was 8.7% higher than Linde would have paid to PDM. (Fan, Tr. 1009-10).

2. *The Praxair-New Mexico Project 1: CB&I Raises Prices by 8.7%*

1071. It appears that Linde and Praxair were competing against each other for the same LIN/LOX project in Farmington, New Mexico. CCFF 1058.

1072. Respondents contend that Fan's conclusion that CB&I had increased prices to Linde is based on flawed data and methodology. As noted above, CB&I submitted a "budget price" to Linde of $814,000 for a 334,000 gallon LIN/LOX tank to be built in Farmington, New Mexico. CCFF 1065. $814,000 was the price that Fan used to conclude that CB&I had increased prices by 8.7% above PDM's pre-merger prices. CCFF 1070.

1073. On June 15, 2002, CB&I submitted a bid to [ ] for a [ ] gallon LIN/LOX tank to be built in [ ]. (CX 1508 at CB&I 059657, *in camera*).

1074. CBI's quote to [ ] was [ ]. (CX 1508 at CB&I 059657, *in camera*).

1075. The difference in CBI's price to Praxair and CBI's price to Linde – for the virtually the same-sized tank and same location – is only [ ], or less than [ ].

1076. CBI implemented the same [8.7%] price increase to Praxair as it did to Linde.

3. *The Praxair-New Mexico Project 2: CB&I Raises Prices by 8.7%*

1077. In late 2000, Praxair requested PDM to provide a budget price for a 500,000 gallon LOX tank in Colorado Springs, Colorado. (CX 448 at CBI-E 007391; *see* RX 90 at PDM-CH 002717).

1078. On November 27, 2000, PDM quoted a price of $850,000. (CX 448 at CBI-E 007392).

1079. On November 6, 2001, after the PDM merger, Praxair asked CB&I to provide a budget price for an identical volume (LR-60) LIN tank in Farmington, New Mexico. (CX 448 at CBI-E 007391). The tank was based on the standard Praxair design, which was the same design used by PDM in prior projects. (CX 448 at CBI-E 007393).

1080. Praxair thought CB&I would, at a minimum, match the price if not reduce it in light of the presumed cost savings flowing from the merger. Praxair wrote to CB&I wondering whether the $850,000 price would be "OK to win the business or are you better with the CB&I influence." (CX 448 at CBI-E 007392).

1081. CB&I formed a budget price for Praxair, based on the cost advantages and reduced cost structure that it had acquired from PDM. CB&I estimating staff were instructed to use PDM's price on the Colorado Springs tank as a basis for determining the price for the New Mexico project, if necessary. (CX 448 at CBI-E 007393).

1082. CB&I staff noted that the New Mexico LIN tank may cost less than the LOX tank for Colorado Springs because the New Mexico tank required less steel. "Since LIN is much lighter than

LOX, we can reduce the shell plate thicknesses significantly." (CX 448 at CBI-E 007391).

1083. On April 30, 2002, despite CBI's lower costs and Praxair's expectation of a lower price, CB&I submitted "tight budget pricing" of $924,000 for the New Mexico tank. (CX 449 at CBI-E 007411).

1084. Although the New Mexico tank required less steel (CX 448 at CBI-E 007391), CB&I explained the increase in price was due, in part, "to increasing stainless [steel] costs." (RX 92 at CBI-E 007401). In fact, the cost of stainless steel fell by 13.58% between November 2000 and April 2002. (CX 1605 at 2).

1085. The increase in price from $850,000 to $924,000 is precisely 8.7%, the same price increase observed by Fan of Linde and Praxair on the Praxair-New Mexico Project 1.

1086. After years of intense head-to-head competition between CB&I and PDM, three separate instances of 8.7% price increases shortly after the merger cannot be coincidental.

4. *MG Industries: Without PDM, Customers Lose the Benefit of Competitive Bidding*

1087. The experience of MG Industries, a subsidiary of Messer, ("MG Industries") is an example of how the elimination of PDM has reduced the ability of customers to obtain lower prices from LIN/LOX tank suppliers.

1088. MG Industries, "a producer of industrial gas products," purchased 16 LIN/LOX tanks in the last nine years. (Patterson, Tr. 338, 341).

1089. Before the merger, the same three firms bid on most of MG Industries' LIN/LOX projects: CB&I, PDM and Graver. (Patterson, Tr. 351, 355, 363, 365). On each of MG Industries' LIN/LOX projects after 1997, Mr. Patterson used each of the other firms as bargaining chips to obtain lower prices on LIN/LOX tanks.

1090. There was vigorous competition between CB&I and PDM. CB&I and PDM would vigorously undercut each other's prices, to the extent that the firms sold LIN/LOX tanks at negative margins, *e.g.*, -23%, -12%, and -2 to -3%. (CX 136 at CBI 014195-HOU; CX 193 at CBI-PL020339; CX 600 at CBI-PL012354). (*See* CX 455 at CBI-E 007334 ([

]); *id*. at CBI-E 007335 ([

]); *id*. at CBI-E 007335 ([

])).

1091. In most of the competitive bidding situations, PDM was either the lowest or second

lowest priced bidder, followed by Graver, and finally CB&I.

1092. PDM played an important role in maintaining competition: [

]. (Patterson, Tr. 462, *in camera*).

1093. PDM reported that MG Industries was "very interested in having PDM quote," based upon its experience where PDM had been the low bidder on a project. (CX 113 at PDM-HOU014389).

1094. In 1997 CB&I, PDM and Graver were competitors for the Rockport, Indiana project. According to Mr. Patterson, MG Industries' negotiating tactics "lowered the price." (Patterson, Tr. 352). Graver was the lowest bidder for the Rockport project, but after "verbal negotiations" using PDM's and CB&I's bids as leverage, Graver "knocked a few percent off [its] price." (Patterson, Tr. 351, 353).

1095. CB&I, PDM, and Graver also competed for the contract to the combined Chattanooga and Johnsonville, Tennessee projects in 1997. (Patterson, Tr. 355). PDM was the lowest bidder, with both Graver and CB&I bidding 15 percent higher than PDM. (Patterson, Tr. 356-57; *see* CX 194 at CBI-PL023449)). Mr. Patterson informed the bidders that "they were way higher than what it would take to be awarded any of those type projects," and that "if they expected to receive any orders, they would have to significantly lower their price." (Patterson, Tr. 357-58). As a result of Mr. Patterson's negotiating, the firms "lowered their price." (Patterson, Tr. 358). CB&I lowered its price to a level that, instead of 15% higher than PDM's quote, was within 5% of PDM's quoted price. (CX 165 at CBI-PL006839). The Johnsonville project was later "postponed," while the Chattanooga tanks were built. (Patterson, Tr. 356).

1096. MG Industries also combined the LIN/LOX tanks for the Albany, New York; Delisle, Mississippi; and Johnsonville, Tennessee projects for one bidding process. (Patterson, Tr. 361-62). PDM was the lowest bidder, Graver's bid was 4% above PDM's, and CB&I's bid was 7% above PDM's bid. (Patterson, Tr. 362). Once again, Mr. Patterson used PDM as leverage, informing Graver that "somebody has a better price than they do." (Patterson, Tr. 363). The customer was again successful in promoting the most competitive environment he could, as "Graver dropped the price **substantially**." (Patterson, Tr. 364 (emphasis supplied)).

1097. On the Waxahatchie LIN/LOX project, PDM, Graver, and "probably CB&I" bid for the LIN tank. MG Industries successfully used PDM, the "low bidder for the liquid nitrogen tank," as a point of leverage to get "good prices." (Patterson, Tr. 366).

1098. In April 2002, MG Industries sought pricing for a LIN/LOX tank project in [
]. ([ ], Tr. 456-57, *in camera*).

1099. Because PDM had merged with CB&I and Graver went out of business, MG Industries had to look for alternative suppliers besides CB&I.

1100. Requests for prices were sent to [ ]. ([ ], Tr. 456-57, *in camera*). [ ] was included in the bid because it had acquired personnel from [ ]. ([ ], Tr. 458, *in camera*).

1101. [ ] was the lowest bidder. (Patterson, Tr. 457, *in camera*). [ ] price was [ ] higher than [ ]. (, Tr. 457, *in camera*). [ ] price was [ ] higher than [ ]. ([ ], Tr. 457, *in camera*).

1102. Because [ ] and [ ]'s prices were substantially higher than [ ], MG Industries was unable to use them to negotiate a lower price from [ ]. ([ ], Tr. 460-61, *in camera*).

1103. [.] ([ ], Tr. 460-61, *in camera*). When MG Industries attempted to negotiate with [ ], [ ], at which point Mr. Patterson abandoned his post-acquisition attempts to secure a lower price. ([ ], Tr. 461, *in camera*).

1104. PDM's absence left MG Industries without means to negotiate with CB&I. [ ]. ([ ], Tr. 462, *in camera*).

1105. [ ] ([ ], Tr. 462, *in camera*).

1106. The large price gap between CB&I and firms such as Matrix leave customers with only one option – CB&I– and CB&I does not get "involved in these bidding wars" like PDM did. (Patterson, Tr. 363). As a result, customers will be forced to pay the higher price set by CB&I.

1107. Prior to the acquisition, PDM was responsive to competitive pressures, giving customers the lowest price possible, even when it was originally the lowest bidder. Today, CB&I is the only option available to MG Industries. Graver is no longer in business, and [ ]. ([ ], Tr. 466-467, 471, *in camera*; Kamrath, Tr. 1988-1989). But because their prices are [ ] higher, CB&I will not leave money on the table in the next round of prices and will likely fill the gap by increasing its prices. (CX 278 at CBI-H4004204). CCFF 231.

D. The Merger Has Had Actual Anticompetitive Effects in the TVC Market

1. *Spectrum Astro: Pre-Merger, Respondents Compete Vigorously Against Each Other*

1108. In the fall of 1999, Spectrum Astro required a thermal vacuum chamber in order to be considered for the Space Based Infrared System (SBIRS) Low Phase 2 Program, sponsored by the United States Air Force. (CX 969 at CBI-PL014693).

1109. Spectrum Astro "tried to do a survey of everybody in the country that we thought would be a qualified bidder, and the two bidders that we found at that time were Chicago Bridge & Iron and PDM down in Texas." (Thompson, Tr. 2040-2041). Spectrum Astro "did not find any other contractors – U.S. contractors." (Thompson, Tr. 2040-2041).

1110. Spectrum Astro informed CB&I and PDM several times that they were competing against each other for the project. (Scully, Tr. 1169 (explaining how he knew that CB&I and PDM were the competitors for the Spectrum Astro project, Mr. Scully testified, "the customer readily stated that several times"); Higgins, Tr. 1270 (the Spectrum Astro job was "competitively bid" and the only company other than PDM that bid was CB&I)).

1111. Mr. Thompson, Spectrum Astro's president testified that he competitively bid the project, because "we wanted obviously to get the best price we could get." (Thompson, Tr. 2051). Additionally, Spectrum Astro used a competitive bidding process because "we were looking fo technical innovation. We generally find that when we have contractors in competition, they will - it will tend to drive innovation into the system." (Thompson, Tr. 2051).

1112. On September 14, 1999, Spectrum Astro held an equipment briefing meeting to provide an overview of the bidding process. (CX 969 at CBI-PL014692). Representatives from both CB&I and PDM/PSI attended the meeting. (CX 969 at CBI-PL014692).

1113. Spectrum Astro retained both CB&I and PDM to develop specifications for a large field-erected thermal vacuum chamber; Spectrum Astro also entered into an engineering and design contract with each company in which Spectrum Astro paid each company [ ] for precontract design work. (CX 969 at CBI-PL014693; CX 1162 at CBI-ATL000941, *in camera*; Thompson, Tr. 2047-2048).

1114. The [ ] payment from Spectrum Astro was for "trade and design effort sufficient to obtain a costed design with intent to award a firm fixed price contract." (CX 969 at CBI-PL014693). This [ ] "was paid on milestones," as work was completed. (Thompson, Tr. 2066)

1115. The contract was to be awarded according to a "rolling down-select between CB&I and PDM/PSI team." (CX 969 at CBI-PL014693).

1116. On March 31, 2000, PDM valued the Spectrum Astro TVC contract at $8,500,000.

(CX 1058 at PDM-HOU017464).

1117. In April 2000, six months after the equipment briefing meeting, CB&I's sales representative for this project, Mr. Rich Kooy, informed CB&I's CEO, Gerald Glenn, that PDM was CB&I's only competition for the Spectrum Astro project. (CX 1726 at CBI-PL 4004590).

1118. Spectrum Astro received initial proposals from both CB&I and PDM in May 2000. CB&I and PDM's unadjusted proposed prices were $9,929,990 and $10,825,853 respectively. (CX 1570 at 22).

2. *Spectrum Astro: Respondents Collude to Raise Prices*

1119. CB&I and PDM engaged in collusive behavior while the acquisition was being negotiated. CCFF 1122, 1177.

1120. On August 1, 2000, at a meeting between management from CB&I and PDM to discuss the acquisition, Bob Jordan, CB&I's Chief Operating Officer, discussed the ongoing Spectrum Astro project with Luke Scorsone, the President of PDM EC. Mr. Jordan explained to Mr. Scorsone that he believed the Spectrum Astro project was "D.O.A." (Scorsone, Tr. 5111, 5114).

1121. Mr. Scorsone relayed Mr. Jordan's statement that the Spectrum Astro project was "D.O.A." to Jeff Steimer, Spectrum Astro's main sales contact at PDM. (Scorsone, Tr. 5113; CX 617 at 6; Thompson, Tr. 2068).

1122. Although Mr. Scorsone claimed that the discussion with Mr. Jordan was "a joke" (Scorsone, Tr. 4796), the conversation between Mr. Jordan and Mr. Scorsone, along with the commentary describing Spectrum Astro as "D.O.A" was noted in the contract file PDM kept on Spectrum Astro. (CX 1705 at PDM-HOU009169).

1123. [
]. ([ ], Tr. 4425, *in camera*).

1124. Additionally, Mr. Thompson of Spectrum Astro testified that "[i]t would be improper for the two competing bidders to discuss the price in a situation where price is a factor in the competition." (Thompson, Tr. 2057).

1125. In November of 2000, Spectrum Astro requested both CB&I and PDM to provide best and final offers to Spectrum Astro. (Thompson, Tr. 2049-2050). Thompson testified that the purpose of these bids was to "get competition." (Thompson, Tr. 2050). An e-mail discussing CB&I's response to Spectrum Astro's request for a best and final offer shows that the rationale behind requesting a best and final offer is that the [
] (CX 242 at CBI-PL 4003340, *in camera*).

1126. Mr. Dave Lacey, a CB&I sales representative labeled the competition between CB&I and PDM as a "tight race." In order to win the project, CB&I would have to "cut price to the bone ... (assume PDM [ ] under CBI)). (CX 242 at CBI-PL 4003340, *in*

camera).

1127. On November 17, 2000, prior to the submission of "best and final" prices to Spectrum Astro, Dave Lacey, the CB&I sales representative for thermal vacuum chambers, circulated "some thoughts" on the Spectrum Astro project. (Scorsone, Tr. 5115-16).

1128. [ ]." (CX 242 at CBI-PL 4003339, *in camera*). Two approaches were listed. One approach was to have "[n]o bid by either company. Both advise [ ] to negotiate directly [ ]." (CX 242 at CBI-PL4003340, *in camera*).

1129. The second approach was to have "CB&I & PDM bid high, [and] PDM offers [ ], then owned by CB&I, in lieu of [ ] as means of changing the offering." (CX 242 at CBI-PL4003340, *in camera*). PDM could only have offered XL Technologies with the consent of CB&I.

1130. Unlike the competition for [ ] where PDM had cut its price in order to prevent CB&I from winning the award ([ ], Tr. 1911, *in camera*), PDM did not did not lower its pricing for Spectrum Astro's thermal vacuum chamber. (Thompson, Tr. 2049, 2058, 2061; CX 565 at CB&I 007188-HOU).

1131. Although CB&I assumed PDM would price "[ ] lower than CB&I," Mr. Scorsone instead requested that PDM increase its cost estimate for the Spectrum Astro project. (CX 1570 at 37; CX 242 at CBI-PL 4003340, *in camera*).

1132. In November 2000, both CB&I and PDM submitted best and final offers for the Spectrum Astro project. (Thompson, Tr. 2051).

1133. Instead of cutting their prices to the bone to win the job, both CB&I and PDM increased their prices above their earlier submissions to Spectrum Astro, which was in line with Lacey's proposal. (CX 1570 at 22, 37).

1134. Of the two offers that were submitted, CB&I's final price was lower. (Thompson, Tr. 2051). CB&I bid $10,760,880, an increase of 8.4% above its previous price. (CX 1570 at 9). PDM bid $11,528,900, an increase of 6.5% above its previous price. (CX 1570 at 5, 37).

1135. Ronald Scully, President of XL Technology Systems, admitted that he did not see the same sort of fractious pricing behavior on the November 2000 Spectrum Astro bidding as he had seen on previous TVC projects for which CB&I and PDM had competed. (Scully, Tr. 1193-1194).

1136. CB&I's best and final offer included a margin of [ ]. (CX 1489 at CB&I 060015). Mr. Scully learned that PDM's margin was higher than CB&I's. (Scully, Tr. 1194).

1137. Spectrum Astro's procurement team rated the proposals from CB&I and PDM,

based on each company's price, technology offerings, past performance, designed systems capability, and financing plan. (CX 294 at CBI/PDM-H4014777; CX 318 at CBI-ATL001091).

1138. Spectrum Astro gave CB&I a higher overall rating than PDM. (Scully, Tr. 1169; CX 1569 at 5). In a related proposal evaluation document, Mr. Thompson stated that "CB&I price was considerably lower, CB&I operating cost is estimated to be lower, CB&I presented many innovative engineering solutions, CB&I presented a more complete and acceptable financial/leasing proposal for negotiation." (CX 317 at CBI-ATL000825).

1139. After evaluating the proposals submitted by PDM and CB&I, Spectrum Astro elected to proceed with CB&I, in December 2000. (Thompson, Tr. 2061; CX 926 at CBI 007212-HOU).

1140. After selecting CB&I for the project, Spectrum Astro proceeded "based upon the price we had in our hands," that is the firm fixed price of approximately $10.7 million. (Thompson, Tr. 2065; CX 1489 at CBI 060015). Mr. Thompson anticipated the negotiation of contractual terms and conditions, but "we don't expect the price to change." (Thompson, Tr. 2065; see CX 926 at CBI 007212-HOU).

1141. Following the selection of CB&I in December 2000, Spectrum Astro did not immediately award the project because he was "working to get financing complete, so we [didn't] award." (Thompson, Tr. 2066).

1142. Although Spectrum Astro could not immediately award the entire chamber, Spectrum Astro wanted to pay CB&I to proceed with the engineering portion of the project. (Thompson, Tr. 2066).

1143. In the summer of 2001, after the acquisition of PDM, Spectrum Astro agreed to pay CB&I $200,000 for performing the engineering work on the thermal vacuum chamber so that the project could stay on schedule. (Thompson, Tr. 2067).

1144. CB&I insisted that Spectrum Astro pay the entire $200,000 up front, rather than in milestones as with the original [ ] payment. (Thompson, Tr. 2067-68). In an internal e-mail, CB&I staff threatened to "do no further work until [ ] agrees to pay us, and that we should require a down payment." (CX 1296 at CBI 002930-HOU, *in camera*).

1145. Spectrum Astro complied with CBI's demand for up front payment and CBI continued with engineering (Thompson, Tr. 2069, 2071). Mr. Thompson testified that this type of demand is unheard of in the industry. (Thompson, Tr. 2068-2069, 2071).

1146. Soon after, Spectrum Astro requested updated pricing for rates and factors, which would include updates in pricing for labor and material. (Thompson, Tr. 2069).

1147. During the $200,000 engineering study, "there [we]re some items that were taken out of the design which should have caused the price to go down." (Thompson, Tr. 2071, 2073). Due to

other "offsetting kinds of things" in the design, Mr. Thompson testified that on balance, he believed the price of the chamber "would have stayed about the same." (Thompson, Tr. 2073).

1148. According to a pricing analysis written by Scott O'Leary, Spectrum Astro's chief of facilities, Spectrum Astro was "expecting a decrease in cost due to the decrease in requirements." (CX 1570 at 5; Thompson, Tr. 2095).

1149. One year after submitting its "best and final offer," CB&I provided Spectrum Astro with updated pricing for the Spectrum Astro chamber. (Thompson, Tr. 2069-2070).

1150. CB&I's updated price for the Spectrum Astro thermal vacuum chamber was $12,019,000 – almost $1.2 million greater than its price 12 months prior. (Thompson, Tr. 2074; CX 567 at CBI 007139-HOU; Glenn, Tr. 4356-57).

1151. CB&I's updated price of $12,019,000 included a margin of [ ]. (CX 1489 at CBI 060015). This represents an 11.7% increase in the price of the chamber.

1152. Mr. Thompson of Spectrum Astro testified that he was "surprised" at the price increase, which he considered substantial. (Thompson, Tr. 2074).

1153. Dr. Simpson testified that the price increase did not result from an increase in the cost of raw materials used to build the chamber. (Simpson, Tr. 3508-09, citing (CX 1589). First, Mr. Thompson of Spectrum Astro "did not understand why the cost had increased ..." (Simpson, Tr. 3508-09, citing (CX 1589). Second, the Producers Price Index for steel did not show any cost increases from the time of CB&I's bid in November 2000 and its updated pricing in November 2001. (Simpson, Tr. 3508-09, citing (CX 1589).

1154. CB&I's increase in the pricing for Spectrum Astro's thermal vacuum chamber included a 4 percentage point increase in the net profit margin before taxes. (CX 1492 at CBI-060000; Scorsone, Tr. 5048, 5119-20; RX 385 at 064565; Scully, Tr. 1174). CB&I increased its margin on the project from [ ] in November 2000, to [ ], in November 2001, an increase of 66%. (CX 1489 at CBI 060015). CB&I similarly increased XL's margin on the project, increasing CB&I's total margin on the project from [ ] to [ ], an increase of 67%. (CX 1489 at CBI 060015).

1155. This margin increase was directed by Mr. Scorsone, who told CB&I staff to "to insert the precontract costs incurred previously on the bid effort for this project <u>even though those costs had been incurred in the previous year and had been written off</u>." (CX 1492 at CBI 060000 (emphasis added); *see* Scorsone, Tr. 5118, 5120-21; Scully, Tr. 1173-74).

1156. Mr. Scorsone had no basis to add precontract costs that had already been paid into the final price. Mr. Scorsone admitted that Spectrum Astro and CB&I had a contract addressing how pre-contract costs were to be handled, and that there was no additional agreement that Spectrum Astro should pay any more. (Scorsone, Tr. 5121, 5123).

1157. Mr. Scorsone's decision to have CB&I add precontract costs to its margins is inconsistent with industry practice. Pre-bid costs are typically absorbed "into the G&A costs of the [bidding] corporation." (Scully, Tr. 1174-75; Thompson, Tr. 2044, 2078-2079).

1158. Mr. Scorsone also testified that the margin was increased to account for the added risk of "erecting the "vessel outside the building and moving it in[to the building]" with the containment vessel. (Scorsone, Tr. 5122). However, this alternate method of erecting the chamber did not come up until after the November 2001 price increase. (Thompson, Tr. 2078-2079; CX 566 at 2; CX 1570 at 63 (alternate method was discussed in May 2002)). CB&I's "apples to apples" comparison of its November 2000 and November 2001 proposals specifically states that estimates did not include "the alternate plan of erecting the chamber outside and then moving it into position." (CX 1489 at CBI 060013).

1159. In CB&I's November 13, 2001, updated price quote to Spectrum Astro, Mr. Jeff Steimer listed nine reasons for its increase in price. (CX 567 at CBI 007136-HOU, CBI 007137-HOU). None of Mr. Scorsone's reasons for the increase in price are listed in Mr. Steimer's November 13 price quote. (CX 567).

1160. On December 19th, 2001, CBI provided Spectrum Astro with a follow-up justification letter to explain the bases for CB&I's price increase. (CX 1570 at 57-59).

1161. At no time did CB&I tell Spectrum Astro that the price was increased because of pre-contract costs. (Thompson, Tr. 2078).

1162. Neither the November 13 nor the December 19 letter mentions any added risk of having to erect the chamber from outside the building as a factor that increased the price of the chamber. (CX 1570 at 46-59).

1163. At no time did CB&I inform Spectrum Astro that it had increased its margin on the thermal vacuum chamber project. (Thompson, Tr. 2137-38).

1164. The pricing changes for Spectrum Astro's TVC demonstrate that, after the acquisition, CB&I increased price and margin in this market. (Simpson, Tr. 3501-3508, citing CX 317, CX 1489).

3. *TRW: Post-Merger Coordination by CB&I Foreshadows Anticompetitive Effects*

1165. Having eliminated its only competitor in the TVC market, CB&I continued, following the acquisition, to attempt to coordinate on making a TVC bid or price quote with the next closest alternative available to TVC customers.

1166. In 1999, TRW decided to procure a TVC, and requested rough order of magnitude

("ROM") pricing from CB&I and PDM, the "two large field-erected manufacturers" in the market. (Neary, Tr. 1430-31).

1167. According to Mr. Neary, no other possible competitors existed in the TVC market prior to February 2001. (Neary, Tr. 1430).

1168. After the acquisition removed PDM from the market, TRW requested TVC pricing from Howard Fabrication, a small producer of shop-built thermal vacuum chambers, in order to obtain some check on the price it would have to pay to CB&I. (Neary, Tr. 1442-43).

1169. TRW considers Howard Fabrication to be unqualified to compete in the TVC market. Mr. Neary testified that Howard Fabrication does not have "the technical competence nor the financial backing" necessary for TRW to award it a TVC project. (Neary, Tr. 1443).

1170. TRW nevertheless requested pricing from Howard Fabrication because it wanted to maximize competition for the TVC project. (Neary, Tr. 1444; *see* Simpson, Tr. 3523 ("In a case where you're confronted with a strong firm and you're negotiating to try to get a price ... you want to have some competition between that firm and some other firm simply to try to get as good a price as you possibly could under the circumstances.")).

1171. Patrick Neary, the manager of the environment test organization at TRW, testified that he requested a bid from Howard Fabrication for the TVC facility to attempt to "help [] maintain the competitiveness...within the marketplace." (Neary, Tr. 1442-1444). According to Mr. Neary, "if there was no Howard there we would really be hosed since there's nowhere for us to go to if there's no competition." (Neary, Tr. 1444).

1172. Although "Howard does not have the capabilities to satisfy customers" in the market for TVCs, Dr. Simpson concluded that Howard "appears to be the next strongest competitor" in the post-acquisition competitive environment. (Simpson, Tr. 3517-8).

1173. In October of 2002, Mike Miles, the CB&I sales representative handling the TRW account, proposed to John Gill, the President of Howard Fabrication that they meet to discuss a potential opportunity for Howard and CB&I to work together. (Gill, Tr. 244).

1174. Mr. Miles had no responsibility or authority regarding subcontracting. (Scorsone, Tr. 5059-61). According to Mr. Scorsone, if CB&I were seriously considering subcontracting to Howard any part of the work on a TVC project, CB&I would first approach the customer regarding the proposal before contacting Howard. (Scorsone, Tr. 5060).

1175. Neverthless, Mr. Miles visited Mr. Gill and asked him "would you like to possibly work together on giving TRW a price on this job?" (Gill, Tr. 245).

1176. According to Mr. Gill, at the meeting Mr. Miles gave him a copy of design specifications that he recognized as the same specifications that he was given by TRW for their TVC

project. (Gill, Tr. 245). Consequently, Mr. Gill "knew" that Mr. Miles had been at TRW. (Gill, Tr. 245). Mr. Gill told Mr. Miles that he knew the job was for TRW and that he had already presented a proposal to TRW for the job. (Gill, Tr. 245, 252-53, 274).

1177. Mr. Gill testified that, nevertheless, Mr. Miles asked him whether Howard "could coordinate on making a bid or a price quote to TRW." (Gill, Tr. 247). Mr. Gill confirmed that Mr. Miles proposed coordinating on the TRW bid after Mr. Gill had told him that Howard was bidding on the project. (Gill, Tr. 274).

1178. TRW believes that CB&I's proposal to Howard to coordinate on the price and bid to TRW deprives TRW of any chance for relief from CB&I's monopoly price. At trial, Mr. Neary of TRW testified that "it's not right" for a bidder to ask a competing bidder to coordinate on making a bid or price quote to TRW. (Neary, Tr. 1451). Mr. Neary further testified that "[w]e're not going to get a fair and equitable price. It goes back to why do we even have two competitors. *We're at a disadvantage. We're going to get – we're basically hosed*, as I would say." (Neary, Tr. 1451, emphasis added). (*See* Simpson, Tr. 3522 (CB&I's actions may "cause Howard to no longer bid as an independent company.")).

1179. Based on his analysis of the TRW story, Dr. Simpson concluded that the coordination between CB&I and Howard would eliminate Howard's ability to bid independently and, consequently, "TRW would be hurt by this coordination." (Simpson, Tr. 3522). "If CB&I coordinates [pricing] with Howard, then that would remove Howard as a constraint and then the next constraint would be even higher." (Simpson, Tr. 3517-18).

1180. In the post-acquisition competitive environment, CB&I, a large, unopposed firm with low costs and efficient practices is in a position of power over other, smaller firms. These smaller firms know that they cannot compete with CB&I and will instead acquiesce to "join" CB&I. The acquisition has therefore increased the risk of collusion among suppliers of large, field-erected thermal vacuum chambers.

4. *[ ]: Pre-Merger Competition Between Respondents Lowers Prices*

1181. Respondents' TVC pricing to [ ] demonstrates both how competition between CB&I and PDM drove TVC prices down prior to the acquisition and how, following the acquisition, CB&I has increased price.

1182. In [1997], [ ], which is now owned by [ ], procured a large, field-erected, mailbox-shaped thermal vacuum chamber that [ ] now calls the [ ]. ([ ], Tr. 1740, [ ], *in camera*).

1183. [ ] used a competitive bidding process to procure the [ ]. ([ ], Tr. 1889, *in camera*). [ ] testified that his responsibility was to complete the project below cost and that the competitive bidding process would provide [ ] with the lowest cost possible. ([ ], Tr. 1890, *in camera*).

1184. Both PDM and CB&I each attempted to preempt the competitive bidding process and win the project on a sole-source basis. Bob Swinderman, PDM sales representative, told [ ] that sole-sourcing the chamber with PDM "would be the cheapest and fastest way" to get the chamber built. ([ ], Tr. 1889-90, *in camera*). CB&I echoed the same sentiment, giving similar assurances to [ ] if it sole-sourced the chamber with CB&I. *Id*.

1185. CB&I's initial sole-source estimate for the TVC was $7.5 million dollars higher than PDM's. PDM gave [ ] a price estimate "in the [ ] million range" and CB&I's budgetary pricing was "high-sided at" [ ] million. ([ ], Tr. 1891, 1906, *in camera*).

1186. [
]. ([ ], Tr. 1890, *in camera*).

1187. Rather than sole-source the project, [ ] made the specifications for the project available to "all the interested bidders." ([ ], Tr. 1892, *in camera*). [
] ([ ], Tr. 1890-91, *in camera*).

1188. Four companies responded to [ ]'s request for proposals: CB&I, PDM, [ ]. ([ ], Tr. 1899, *in camera*). These bidders presented "their conceptual design," cost estimate material, and other information required by [ ]. ([ ], Tr. 1892, *in camera*).

1189. Quality and timeliness of completion were of paramount importance to [ ]. [ ] project required the construction schedule to be expedited significantly. ([ ], Tr. 1897-1898 , *in camera*). A project of this magnitude normally required a three-year construction; [ ] wanted the project completed in 18 months. ([ ], Tr. 1897-1898, *in camera*). Therefore, [ ] was particularly concerned about "the credibility and integrity of the construction plan" of each of the suppliers bidding for the project. ([ ], Tr. 1897-98, *in camera*).

1190. [ ] submitted the lowest bid in response to [ ]'s performance specifications. However, [ ] did not meet [ ] standards. [ ] eliminated [ ] from the bidding because "they did not show that they had a complete wherewithal as to the scope of the project in order to come in at cost," they "did not have clear solutions on some of the items delineated in ... [ ] preliminary proposal review," and "...they lacked the demonstrated experience of building something of that size." ([ ], Tr. 1900, *in camera*).

1191. [ ] also eliminated [ ] as a possible competitor because "... their proposal couldn't meet the spec...they took exception to some of our specs." ([ ], Tr. 1901, *in camera*).

1192. In addition to the four original bidders, [ ] also contacted two other suppliers,

"[ ], and requested that they submit proposals for the project. ([ ], Tr. 1902-1903, *in camera*). [ ] refused to submit a bid because "they felt the size of the project was beyond their company's means." ([ ], Tr. 1903, *in camera*).

1193. The elimination of [ ] and [ ] from the competition, and the refusal of [ ] to submit a bid, left PDM and CB&I as the two down-selected bidders for the [ ]. ([ ], Tr. 1892, *in camera*).

1194. About the time CB&I and PDM became the two remaining bidders for the project, CB&I and PDM provided [ ] with initial pricing bids. According to [ ], CB&I provided [ ] with a "high-sided" bid of [ ] million. ([ ], Tr. 1906, *in camera*). PDM also submitted a bid of approximately [ ] million to [ ] for the project. ([ ], Tr. 1906-1907, *in camera*).

1195. At the end of this phase in [ ]'s procurement process, [ ] asked for a "best and final" price from CB&I and PDM. ([ ], Tr. 1908, *in camera*).

1196. [ ] told CB&I and PDM that they were competing against each other for the [ ]. ([ ], Tr. 1909, *in camera*). Mr. [ ] project manager, testified that he wanted CB&I and PDM to know that they were competing against each other because "when you have competitors bidding best and final, one number takes all, [that] is when we would receive the lowest price..." ([ ] , Tr. 1909, *in camera*).

1197. [ ] asked each company for "cost-saving initiatives, what could be done to reduce costs." ([ ], Tr. 1907, *in camera*). [

] ([ ] , Tr. 1907-1908, *in camera*).

1198. After receiving the final pricing offers for the [ ], [ ] added some items to the TVC specifications. ([ ], Tr. 1911, *in camera*). [ ] strategically added these items because it wanted an "all or none price." ([ ], Tr. 1911-12, *in camera*). Even though [ ] believed these additional items "would have increased the price," [ ] asked CB&I and PDM to "sharpen their pencils and give me their lowest price." ([ ], Tr. 1911-12, *in camera*).

1199. [ ] ([ ], Tr. 1911, *in camera*).

1200. Despite the increase in cost from the additional items, "[ ] ([ ], Tr. 1910-11, *in camera*; *see* Scully, Tr. 1166 (after the bid was awarded, CB&I learned that, at the last opportunity in the bidding process, PDM had further lowered its price by "something in the order of as much as $2 million."); CX 261 at CBI-H004029 (" ... in a last minute maneuver PDM changed their offer to a cost reimbursable open book

contract with a 5% margin")).

1201. [ ] perceived, based on comments, that PDM lowered its pricing to demonstrate "technical prowess, boasting rights, so to speak, of having won or the desire to win for future business prospectives that [ ] contract ..." ([ ], Tr. 1916, *in camera*).

1202. Sometime after [ ] awarded the contract to PDM, [ ] talked with Bob Swinderman, the PDM sales representative, about the competition for the [ ] project:

> PDM felt that CB&I had been out of the market for several years and that if they allowed them to win that particular project, which was a very significant project, that they would be back in and become a significant competitor, and it was important to PDM management that they not win that, and so through telephone calls they developed a price, lowered the price and offered it to [ ] at the last minute ...

(Scully, Tr. 1166; Scully, Tr. 1193 (PDM cut its price to try to keep CB&I out of the market)).

1203. The lowest price was the deciding factor in who won the project. [ ] awarded the [ ] contract to PDM and its subcontractor, Chart Industries, primarily because they offered a lower price than the CB&I/XL team. ([ ], Tr. 1891, *in camera*).

1204. PDM's final price was approximately [ ] million less than PDM's initial bid and approximately [ ] million less than CB&I's initial bid. ([ ], Tr. 1891, *in camera*). (*See* Higgins, Tr. 1266 (project value was about $10-12 million)).

1205. [ ] testified that his procurement strategy had saved [ ] $4 million below what he had originally estimated as the likely cost of the [ ]. ([ ], Tr. 1910, *in camera*).

1206. [ ] made an effort to find alternative TVC companies to compete effectively against CB&I and PDM, but was unsuccessful. CCFF 1188-1193. [ ] was able to use the close competition between CB&I and PDM to lower the price of a TVC from a high bid of [ ] million down to its final price of approximately [ ] million, to obtain additional items, and to benefit from CB&I and PDM's cost-saving, design innovations. CCFF 1194-1205. As the acquisition eliminated this competition between CB&I and PDM, these benefits are no longer available to [ ].

5. *Following the Acquisition, CB&I Increased the Price for [ ]'s [ ] TVC Project by [ ]%*

1207. On June 30, 1999, PDM provided [ ] with a firm fixed price proposal for a large, field-erected thermal vacuum chamber for [ ] facility. (CX 1573 at 5-6, *in*

camera; [ ], Tr. 1925-27, *in camera*).

1208. Pre-acquisition, PDM quoted a price of [ ] in its proposal to [ ], but the customer chose to postpone the project. (CX 1573 at 6, *in camera*; [ ], Tr. 1926, *in camera*).

1209. In May 2001, [ ] undertook a study to determine whether it should procure the new large, field-erected thermal vacuum chamber for the [ ] facility or alternatively expand its [ ] facility. ([ ], Tr. 1927-28, *in camera*). [ ] also asked CB&I to provide it with updated pricing on the proposal previously submitted by PDM. ([ ], Tr. 1928-29, *in camera*).

1210. In order to analyze the costs of the two alternatives, [ ] requested "cost verification from CB&I ... of the price ... [ ] based on PDM's earlier proposal." ([ ], Tr. 1929, *in camera*). [ ] contacted Dave Lacey of CB&I, asked him to review PDM's prior proposal and submit a renewed price based on the specifications and schedule of the prior bid. ([ ], Tr. 1930, *in camera*).

1211. [ ]'s official request was for a firm fixed price renewal of PDM's earlier bid for the TVC. ([ ], Tr. 1933, 1935, *in camera)*.

1212. [ ] expected the price for the [ ] thermal vacuum chamber project to increase marginally to cover "reasonable inflation." He anticipated the new pricing information to be [ ] ([ ], Tr. 1934, *in camera*).

1213. Instead of conforming to [ ] request for a "firm fixed price renewal," CB&I submitted Rough Order of Magnitude Pricing. ([ ], Tr. 1933, 1935-1936, *in camera*; CX 1573 at 3, *in camera*). On May 16, 2001, Mr. Lacey provided [ ] with a "ROM [ ] of [ ] for a fully commissioned thermal vacuum chamber." ([ ], Tr. 1930-31, *in camera*; CX 1573 at 3, *in camera*).

1214. CB&I's new price represented an increase of 35%, or over [ ]. (CX 1573 at 2, *in camera*; [ ], Tr. 1935, *in camera*; s*ee* Simpson, Tr. 3509-10 (the price quoted by CB&I after the acquisition is "much higher than the previous price" which was quoted by PDM).

1215. [ ] of [ ] accepted that the [ ] price quoted in [ ] letter as "the price [ ] would now have to pay to have that chamber built." ([ ], Tr. 1933, *in camera*).

1216. [ ] was "disappointed that the cost had gone up" and that Mr. Lacey had not presented the updated price quote as a firm fixed price in his letter. ([ ], Tr. 1936, *in camera*).

1217. Respondents realize that [ ] is unhappy with CB&I because of the price

increase. (*See* [ ], Tr. 5333, *in camera* (When asked if he was aware that [ ] was displeased with CB&I for its unresponsiveness and price increase on the [ ] project, Mr. Scorsone replied: "I've heard that, yes.").

1218. [
]. ([ ], Tr. 5332, *in camera*).

1219. The price quoted by Mr. Lacey "biased" the [ ] option "more negatively" and "favored the [ ] expansion." ([ ], Tr. 1936, *in camera*).

1220. In the absence of PDM, CB&I, the only existing competitor for large, field-erected thermal vacuum chambers uses its sole position as a TVC competitor to its advantage. CB&I now dictates its own bidding conditions and victimizes customers who have no other suppliers to turn to.

VIII.

CBI'S "EXITING ASSETS" DEFENSE IS MERITLESS

A. Overview

1221. Respondents assert an "exiting assets" defense that has never been recognized by any court as an antitrust defense, and rejected by the few courts that have addressed it. In essence, Respondents claim that had the merger not occurred, PDM would have made a business decision to liquidate the firm, thereby eliminating PDM from the competitive landscape.

1222. Respondents' sole support for this proposed defense lies in a1986 article, J. Kwoka and F. Warren-Boulton, "Efficiencies, Failing Firms, and Alternatives to Merger: A Policy Synthesis," 31 *Antitrust Bull*. 431, 445-46 (1986). However, Kwoka and Warren-Boulton require that the proponent of an exiting asset argument must show that the exiting asset was shopped unsuccessfully and that there is no alternative purchaser willing to pay more than scrap value to use the assets in the market. *Id*. at 446-49. Further, the proponent of the argument must show that the assets would no longer be used in the market, *i.e.*, liquidation of the assets through sale of the assets for use in the market does not constitute an exiting asset. *Id*. at 450 ("analysis should focus on the alternative uses of the assets").

1223. The defense recognized by courts and the *Merger Guidelines* which most closely resembles Respondent's asserted "exiting assets" defense is the failing firm defense.

1224. The *Merger Guidelines* provide that a merger is not likely to create or enhance market power or facilitate its exercise if the following circumstance are met: 1) the allegedly failing firm would be unable to meet its financial obligations in the near future; 2) it would not be able to reorganize successfully under Chapter 11 of the Bankruptcy act; 3) it has made unsuccessful good-faith efforts to elicit reasonable alternative offers of acquisition of the assets of the failing firm that would keep its tangible and intangible assets in the relevant market and pose a less severe danger to competition than does the proposed merger; and 4) absent the acquisition, the assets of the failing firm would exit the relevant market. *Merger Guidelines* § 5.1.

1225. Respondents failed to prove each element of the defense.

B. PDM Would Have Been Able to Meet its Financial Obligations

1226. Pitt-Des Moines's regular course of business documents reflect a strong and profitable firm.

1227. Pitt-Des Moines was a "profitable" company. (Scheman, Tr. 2923; CX 520 at TAN 1003317). The company's EBITDA earnings increased from $20.5 million in 1994 to $49.3 million in 1999. (CX 520 at TAN 1003317).

1228. Pitt-Des Moines' E&C [Engineering & Construction] business unit was also profitable, increasing its margin each year from 1994 through 1999 and increasing its EBITDA earnings at a 5-year combined annual growth rate ("CAGR") of 18.7% on 5-year sales CAGR of 9.5%. (CX 520 at TAN 1003317).

1229. PDM EC was a profitable division of Pitt-Des Moines. The division's EBIT earnings increased from $5.4 million in 1995 to $9.5 million in 1999, a CAGR of 15.3%. (CX 522 at TAN 1003373; Scheman, Tr. 2950). Revenues increased from $121.7 million in 1995 to $185.7 million in 1999. (CX 522 at TAN 1003373).

1230. PDM EC had its best year ever in 1999, the year before CB&I and Pitt-Des Moines signed the acquisition agreement. (Scorsone, Tr. 4823-24). As of July 2000, the month before CB&I and Pitt-Des Moines signed the acquisition letter of intent, PDM EC projected earnings before interest and taxes of $2 million in 2000. (CX 522 at TAN 1003373).

1231. After Respondents announced the acquisition, PDM EC's earnings for 2000 declined, resulting in a loss for the year of $8 million. (Scorsone, Tr. 4825). After the acquisition was consummated, CB&I and Pitt-Des Moines adjusted PDM EC's loss upward to $18 million for 2000. (CX 1023). A short-term reduction in capital expenditures in the petroleum and petrochemical industries in 1999 negatively impacted all tank suppliers in 2000, including CB&I. (CX 522 at TAN 1003372; CX 529 at TAN 1000596 ("1999 - Down - Mergers in Oil + Gas → Market Driver (Oil + Gas)")).

1232. The loss in 2000 did not, however, impact PDM EC's ability to meet its financial obligations. As of June 30, 2000, PDM EC had cash of $2.6 million, total assets of $79.2 million, no outstanding debt and shareholder' equity of $56.8 million. (CX 385 at 30).

1233. Dr. Simpson testified that, in his opinion, PDM EC's negative earnings in 2000 did not imply that PDM EC would have exited the market but for this acquisition. (Simpson Tr., 3575).

1234. Mr. Scorsone, PDM EC's President, Mr. Byers, Pitt-Des Moines's Vice President of Finance, and PDM's investment banker all believed that PDM EC's poor performance in 2000 would be short-lived, and if PDM EC had remained independent, PDM EC would have returned to profitability the very next year and continued to grow. (Scorsone, Tr. 4838; Byers, Tr. 6899; CX 529 at TAN 1000596 ("2001 – will be good year [for PDM] – the bookings are higher"); *see also* CX 522 at TAN 1003372 ("This decline is expected to be short lived" PDM EC projects 2001 revenue and EBIT of $168.0 million and $6.1 million, respectively)).

1235. In September of 2000, Mr. Scorsone made a presentation to CB&I and its advisors about PDM' EC's future prospects, "assuming that the company was not acquired [by CB&I]." (Scorsone, Tr. 5201; CX 1695 at CBI/PDM-H 4005659). Mr. Scorsone projected PDM EC's earned revenues to be $151 million for 2000, and $168 million for 2001. (CX 1695 at CBI/PDM-H 4005701; CX 529 at TAN 1000596; *see also* CX 1713 at CBI/PDM-H 4015086-89 (income from operations increase each year from $6.4 million to $9.1 million, between the years 2001 and 2004)).

1236. As late as February 7, 2001, the date CB&I consummated the acquisition, Pitt-Des Moines' management projected that PDM EC would make a profit of $4.8 million in 2001. (Scheman, Tr. 2961-2962; RX 163 at TAN 1000385).

1237. Mr. Glenn of CB&I considered PDM to be a "well-run company." (Glenn, Tr. 4249). He considered PDM a good competitor against CB&I for a long period of time and a successful company in the engineering and construction business. (Glenn, Tr. 4249). PDM made money and was attractive to its investors. (*Id.*) It is doubtful that CB&I would have been willing to pay a premium price if PDM's future prospects looked bleak or if it was on the verge of bankruptcy. CCFF 1255-1256, 1261.

1238. Respondents presented no evidence that PDM EC would be unable to meet its financial obligations.

C. Respondents Have Not Shown that PDM Would Not Be Able to Reorganize Successfully Under Chapter 11

1239. Respondents presented no evidence (1) that PDM was going to file under Chapter 11 of the Bankruptcy Act, or (2) that PDM would not be able to reorganize under Chapter 11.

D. PDM Did Not Make Good-Faith Efforts to Elicit Reasonable Alternative Offers

1240. In May 2000, Pitt Des-Moines decided to sell the company. (Byers, Tr. 6742). In June, PDM interviewed Goldman Sachs and Tanner to advise on the sale. (Byers, Tr. 6742-6743).

1241. Goldman Sachs recommended that PDM pursue "five to ten strategic buyers and 10 to 20 LBO buyers." (Byers, Tr. 6838; *see also* CX 380 at PDM-C 1004026).

1242. Pitt-Des Moines's investment banker, Tanner & Company, assembled a preliminary list of potential buyers, in June 200, including 18 steel companies, 15 engineering and construction companies, and four financial buyers. (CX 520 at TAN 1003258).

1243. Financial buyers, who would have maintained PDM as an independent on-going entity, were available and had been recommended by Goldman Sachs and Tanner as alternative buyers. (Byers, Tr. 6744; *see also* CX 520 at TAN 1003258; CX 380 at PDM-C 1004026).

1244. Tanner was chosen as the investment banker over Goldman Sachs because Tanner believed that breaking up the company and selling it in parts would result in a higher total value. (Byers, Tr. 6745, 6755).

1245. In July of 2000, Pitt Des-Moines announced that it would sell the company. Peter Scheman, Tanner's representative to Pitt Des-Moines, had the responsibility to "coordinate and lead everything." (Scheman, Tr. 2921).

1246. Pitt Des-Moines offered PDM to CB&I in a telephone call to Mr. Glenn of CB&I: "I received a call from Bill McKee, who was the chief executive officer of Pitt-Des Moines ... He said that the Jackson family, who had controlling interest in PDM, had made a decision that they wanted to sell the company in total for cash." (Glenn, Tr. 4077-4078). Mr. McKee offered PDM to CB&I during that telephone call. (Glenn, Tr. 4078).

1247. PDM did not make efforts to contact any buyers other than CB&I and Enron: "I don't know of anybody that PDM contacted, anybody other than CB&I and Enron." (Byers, Tr. 6812).

1248. Tanner & Company was given the responsibility to contact potential purchasers. (Byers, Tr. 6758). Pitt-Des Moines management was instructed to direct all inquiries to Tanner & Company. (Byers, Tr. 6758). However, Tanner & Company never contacted any prospective buyer other than CB&I and was never instructed to do so.

1249. By August 4, 2000, Tanner was communicating with CB&I via e-mail about whether "there is a deal to be made between PDM and CB&I or if [Tanner] should be contacting other parties who have similarly expressed interest." (CX 70 at PDM-C 1002706).

1250. Tanner & Company prepared an offering memorandum for the sale of the PDM EC Division (Scheman, Tr. 2930-31). Tanner & Company started with the PDM EC division planned to prepare a similar offering memorandum for each Pitt-Des Moines division. (Scheman, Tr. 2934 ("The plan was to have an EC book and a water book. ... EC was the one we started on first. If we had continued down a different path and had not moved forward with CB&I, there would also be a water book")).

1251. Mr. Scheman recalled sending the PDM EC offering memorandum to only one company – CB&I – because by the time the offering memorandum was completed, negotiations between CB&I and PDM were at a point "that it didn't make sense to send it out to other people." (Scheman, Tr. 2931).

1252. In contrast, Pitt Des-Moines actively sought buyers for its other divisions. As of August 18, 2000, "over ten parties had received the Confidential Memorandum for Steel Distribution and six groups had received Bridge Division books." (CX 521 at TAN 1000339).

1253. On August 20, Tanner presented to Pitt-Des Moines's president additional lists of prospective acquirers for the various Pitt-Des Moines divisions, including fourteen parties who initiated contact expressing interest in possible acquisition of the various divisions and 32 prospective financial buyers. (CX 527 at TAN 1002453-2455).

1254. On August 29, 2000, Respondents announced that they had signed a letter of intent for the acquisition of PDM by CB&I. (CX 285; CX 1565; *see* Glenn, Tr. 4377).

1255. CB&I initially agreed to pay $93.5 million for PDM, which was at the "high end" of Tanner's estimates of PDM's sales value. (CX 521 at TAN 1000328). Tanner believed "it is doubtful that PDM could achieve a value exceeding $93.5 million in an alternative transaction." (CX 521 at TAN 1000329).

1256. Alternative buyers would unlikely pay a premium price for PDM because they would face continued tough competition from CB&I. (Scheman, Tr. 2966-67). Handwritten notes of PDM's investment banker state "Need informed buyer willing to fund war wCBI - unlikely to pay premium." (CX 534 at TAN 1001619). Mr. Glenn of CB&I conceded that he thought PDM was worth more to CB&I than it was to other firms. (Glenn, Tr. 4261-62).

1257. Mr. Scheman considered CB&I to be a "preemptive buyer" and this meant "that we never went out to other people. Their status as a preemptive buyer made it so we didn't go down the route of calling other people." (Scheman, Tr. 2938-39; *see also Id.* at 2939-40 (Tanner did not believe it was "prudent" to "go out and contact people"), 2938 (Tanner and Pitt-Des Moines had "reached a point with CB&I where we thought we had a good deal, and we, ultimately, I believe, entered into a letter of intent, and, therefore, did not show it to other people")).

1258. PDM turned away prospective buyers who might have made reasonable alternative offers. Matrix, then the third-largest United States tank constructor made efforts to buy PDM EC. (Vetal, Tr. 418-19).

1259. Matrix's President, Brad Vetal, called Pitt Des Moines's President, William McKee, and informed him of Matrix's interest in purchasing PDM EC. (Vetal, Tr. 422). Mr. McKee told Mr. Vetal that Pitt Des Moines could not talk with Mr. Vetal about a sale of the business because Pitt Des Moines already had a buyer, but Mr. McKee would call him if that deal fell through. (Vetal, Tr. 422-23; *see also* RX 168 at TAN 1000654 (handwritten notes of Peter Scheman indicating Mr. Vetal had contacted Mr. McKee)).

1260. Pitt Des-Moines' Board of Directors meeting minutes illustrate that PDM had viable alternatives to liquidation. On November 28, 2000, PDM's President, William McKee stated that if the CB&I transaction fell through, PDM would continue to seek other purchasers:

> Mrs. Townsend inquired what effect would a failure to consummate the PDM/CB&I transaction have on the proposed transaction with Russell Metals. Mr. McKee responded that he believed the transaction should still proceed since *the Company would continue its efforts to sell as PDM EC and PDM Water divisions by seeking other purchasers.*

(CX 1590 at PDM-C 1006065) (emphasis added).

1261. Tanner & Company's report supporting its fairness opinion for the sale of PDM to CB&I identified various alternative strategies for the sale of PDM. (RX 163). As one alternative to

the sale of PDM, Tanner wrote that "[w]hile it would likely be costly and difficult to separate the two Divisions, PDM's EC and Water Divisions could be marketed independently in stand-alone transactions... However, due to the historical connection between the Divisions and their sharing of facilities, the cost of separating the two businesses may be as high $5 to $10 million." (RX 163 at TAN 1000406). Other alternatives included a leveraged buyout for about $65 million. (RX 163 at 1000404).

1262. Respondents presented no evidence that Pitt Des Moines made good-faith efforts to elicit reasonable alternative offers other than from CB&I.

E. Absent the Acquisition, PDM EC's Assets Would Not Have Exited

1263. Dr. Simpson testified that, in his opinion, if CB&I had not bought PDM as a going concern, someone else would. (Simpson, Tr. 5674). Dr. Simpson testified that if PDM were acquired by a large international firm, similar to how Skanska acquired Whessoe, then PDM would have the backing of a large international engineering company. (Simpson, Tr. 3583-4). Dr. Simpson noted that PDM EC had a stronger reputation than Whessoe. (Simpson, Tr. 3584).

1264. Dr. Simpson testified that in his opinion PDM EC and PDM Water were strong divisions. Dr. Simpson noted:

> ...CB&I made Luke Scorsone, who had been president of PDM EC, president of CBI Industrial. They had made, I believe, Mr. Brady, who had been in charge of PDM Water, they made him in charge of the CB&I's water tank unit. So, PDM's management seemed solid.
>
> CBI has kept PDM's fabrication plants, so the fabrication plants seemed to be solid and competitively significant. CBI has adopted some of PDM EC's and PDM Water's construction techniques, so the skill of PDM EC seemed to be solid. The testimony in this case indicates that PDM EC had a good reputation and PDM EC had been commercially successful as far as getting jobs. So that - all of that suggests that PDM EC was a strong competitor in this marketplace."

(Simpson, Tr. 3578).

1265. Dr. Simpson testified that, as a stand-alone firm, PDM would have been about the same size as Matrix Services and would have been bigger than companies such as ATV or Chattanooga Boiler & Tank. (Simpson, Tr. 3583). Dr. Simpson testified that a stand-alone PDM could compete for projects in partnerships with another firm and that a stand alone PDM would be a stronger partner than AT&V. (Simpson, Tr. 3584).

1266. PDM could not sell the EC Division without the Water Division because of their shared services. (Byers, Tr. 6800 ("We could not sell EC without Water because of the shared services)). Moreover, Pitt Des-Moines' Board wanted to sell the EC and Water division as a going concern

because that would get Pitt Des-Moines more money. (Byers, Tr. 6801-02).

1267. Pitt-Des Moines would not have had difficulty finding an alternative buyer for PDM. It simply would have had to settle for a buyer not willing to pay the premium CB&I offered for the market power the acquisition afforded it. Dr. Harris observed in his expert report that capital markets generally function well, and that companies that have profitable opportunities to expand generally can find the financial resources to do so. (Harris, Tr. 7793). The PDM EC Division was a successful and profitable business and was projected to sustain earnings growth. (CX 1695 at CBI/PDM-H 4005701; CX 529 at TAN 1000596; *see also* CX 1713 at CBI/PDM-H 4015086-89). Under these circumstances it must be assumed that the assets of PDM's EC Division would have remained in the market.

1268. Dr. Harris believes that if CB&I had acquired only PDM's Water Division, PDM's EC Division would have been liquidated. (Harris, Tr. 7975-76).

1269. Dr. Harris did not undertake an independent financial analysis of whether PDM EC qualified as an exiting asset. (Harris, Tr. 7333). Instead, he relied on the testimony of Mr. Byers and Mr. Scheman. (Harris, Tr. 7333).

1270. Although Tanner & Company supplied to Mr. McKee extensive lists of prospective purchasers, Mr. McKee never identified any potential purchaser, other than CB&I and Enron, called by him, by Tanner & Company, or by anyone else. (Byers, Tr. 6903).

1271. Dr. Harris did not recall that Mr. McKee, PDM's president, informed PDM's Board in November 2000 that in the event the sale to CB&I were not consummated PDM would continue its efforts to sell its EC and Water Divisions. (Harris, Tr. 7966-68; CX 1590 at PDM-C 1006065). Further, Dr. Harris said that even if PDM's president had made such a statement to the PDM Board, Dr. Harris would not change in, any way, his exiting asset conclusion. (Harris, Tr. 7968).

1272. Before recommending any disposition of the EC Division, Mr. Byers would have checked to see if there were any alternative purchasers. (Byers, Tr. 6799-6800). Mr. Byers never got to that point. (Byers, Tr. 6800). Tanner would have done the same. (JX 34 at 83 (Scheman, IHT)).

1273. Mr. Byers further testified that before making any recommendation to liquidate the PDM EC Division, his fiduciary duties would have required him to investigate to assure himself that there was no alternative purchaser for either for PDM or for PDM EC willing to pay more than liquidation value of the business. (Byers, Tr. 6799-800, 6893, 6895). Mr. Byers never got to that point. (Byers, Tr. 6800). Mr. Byers never investigated whether there was a possibility of another purchaser. (Byers, Tr. 6895).

1274. Pitt Des-Moines' Board of Directors never took up the issue of liquidating the PDM EC Division. (Byers, Tr. 6891).

1275. Dr. Harris acknowledged that exiting asset essentially means the assets must leave the

market. (Harris, Tr. 7956; Harris, Tr. 7332 ("if you knew for a fact that the assets were going to exit and no one else was going to buy them and be a low-cost producer, if you knew that as a fact")). However, Dr. Harris's characterization of PDM EC as an exiting asset does not withstand this test. Dr. Harris uses the term "exiting asset" despite evidence that, even if PDM EC were liquidated, the assets would remain in the market.

1276. If PDM EC were liquidated, its tangible and intangible assets would have become available for purchase by foreign and United States firms attempting to compete against CB&I. According to Dr. Harris, "Graver is instructive. When they left, their assets were auctioned, auctioned off, and you know, the same sort of thing could have happened here." (Harris, Tr. 7335).

1277. According to Dr. Harris, Chattanooga Boiler and Tank purchased many of Graver's assets at auction and has employed people who had been employed by Graver. (Harris, Tr. 7312). "Apparently these competitors have hired expertise that used to work for Brown Minneapolis Tank" (RX 208; Harris, Tr. 7320-1). "Graver used to be very competitive in these LIN/LOX tanks and it sounds like their know-how moved on to another company." (RX 208; Harris, Tr. 7321).

1278. Dr. Harris demonstrated repeatedly in his testimony his misapplication of the exiting asset argument in this case. Dr. Harris acknowledges that he would continue to characterize PDM EC as an exiting asset although the fabrication facilities continued to be used by another tank company. (Harris, Tr. 7956). Dr. Harris asserted that his characterization of PDM EC as an exiting asset would be unaffected even if PDM EC had continued to complete projects, including construction of the Cove Point LNG tank, which is now under construction. (Harris, Tr. 7956-58).

1279. Dr. Harris acknowledged that PDM EC's intellectual property could be valuable to competitors of CB&I. (Harris, Tr. 7974). However, Dr. Harris asserted that his exiting asset conclusion would be unaffected even if PDM EC's intellectual property were acquired and used by another company to compete in the relevant markets (Harris, Tr. 7958) and even if PDM EC's customer records and files were acquired and used by another company to compete in the markets. (Harris, Tr. 7959).

1280. Mr. Byers testified that in the event of liquidation, PDM would have sought customer consent to sell its backlog of unfinished contracts to other companies to complete. (Byers, Tr. 6802-05). Mr. Byers testified that for existing contracts, PDM was prepared to get consents from customers to transfer those contracts to other companies. These contracts included one for the Cove Point project. (Byers, Tr. 6802, 6804-5).

1281. Respondents have failed to show that PDM EC would have been an exiting asset if PDM were not acquired by CB&I.

IX.

DIVESTITURE IS THE PROPER REMEDY FOR THIS ILLEGAL MERGER

A. CB&I Must Be Ordered to Divest and Restore PDM

1282. Complaint Counsel's Opposition to Respondents' Motion for Directed Verdict on the Issue of Remedy sets forth the legal principles, statute and caselaw establishing that divestiture is the required remedy if the Tribunal determines that the CBI/PDM merger violates Section 7 of the Clayton Act and Section 5 of the FTC Act.

1283. Divestiture to an appropriate acquirer of the reconstituted assets of PDM EC and PDM Water as an ongoing, viable business would effectively restore competition and remedy any lessening of competition that resulted from the acquisition of PDM. (Simpson, Tr. 3608-09). (*See* Robert Rogowsky, "The Economic Effectiveness of Section 7 Relief," 31 Antitrust Bull. 187, 194, 199 (1986) (When two firms have combined, "the highest probability of restoring competition comes from full divestiture of the combined entity" that creates a "viable, independent effective entity within a reasonable time, e.g. spin-off.")).

1284. An effective remedy requires the divestiture of intangible as well as tangible assets. (Simpson, Tr. 3608). CCFF 1297-1373.

1285. There is substantial evidence in the record that shows what assets would be included in an effective divestiture. The record provides information as to the structure, composition, and competitive viability of PDM and CB&I premerger, the precise PDM assets and personnel acquired by CB&I, and the disposition of those assets and personnel. *See* CX 385, 25 (listing PDM EC's salaried and hourly employee headcount); CX 385 at 21-23 (listing PDM EC's facilities and equipment); CX 134 (organization chart for PDM EC); CX 133 (organization chart for PDM Water); and CX 328-339 (asset purchase agreement, listing all assets of the PDM EC and Water Divisions purchased by CB&I, including all owned real property, tangible personal property, inventories, contract rights, accounts receivables, and intellectual property); CX 1033 at 32 (number of employees terminated).

1286. Customers would benefit from the increased competition resulting from an effective divestiture. (Neary, Tr. 1502 (TVC; competition would be restored if PDM EC were returned to the marketplace); CX 370, 89 (Britton, Dep.) (LNG; prefers to have more than one competitor, CB&I, for a project); [ ], Tr. 462, *in camera* ([ ]); Simpson, Tr. 3606-07, 3611 (customers would benefit by reconstituting PDM EC)).

1287. [ ] ([ ], Tr. 4758, *in camera*).

1288. Howard Fabrication believes that it "could make more money ... if CB&I and PDM were to emerge again as two competitors for thermal vacuum chambers." (Gill, Tr. 271-72). According to Mr. Gill, the re-emergence of PDM would increase the likelihood that Howard Fabrication is chosen as a subcontractor for TVC projects. (Gill, Tr. 271-72).

B. Divestiture Must Be Complete and Must Include Full Restoration of Both the PDM EC and Water Divisions

1289. As the viability of PDM EC depended upon the viability of the PDM Water division, both must be included in an order for complete divestiture.

1290. PDM EC and PDM Water were inextricably intertwined. Mr. Richard Byers, a former PDM Board director, testified that it is "impossible to split [PDM EC and PDM Water]" in two because "they shared many services. They shared human resources, they shared physical plant." (Byers, Tr. 6780). PDM's investment banker, Tanner & Company, testified that "there was not a bright line that separated the two businesses but in certain places they kind of meshed together." (JX 34 at 33-34 (Scheman, Dep.)).

1291. Evidence, including testimony by Mr. Scorsone, suggests that PDM EC and PDM Water routinely shared field erection personnel, fabrication facilities, and field erection equipment. (Scorsone, Tr. 4779-80; CX 552 at 45-48 (Braden, Dep.); (Scorsone, Tr. 2852 (PDM EC and PDM Water shared field personnel and field construction equipment); *see* Rano, Tr. 5894, 5898 (same engineering processes are used for a flat-bottom tank as is used for an LNG tank)).

1292. PDM EC and Water maintained "at least one shared facility ... or multiple shared facilities." (JX 34 at 133 (Scheman, Dep.); *see* CX 552 at 43-44 (Braden, Dep.) ("PDM Water shared fabrication facilities with PDM EC at that time. We shared construction resources.")).

1293. Additionally, both divisions shared skilled personnel. (CX 552 at 45, 46-47 (Braden, Dep.) (construction crews and project managers would seamlessly transfer from a PDM Water job to a PDM EC job with their tools and equipment); CX 442 at 210 (Knight, Dep.) (tank field-erection crews are switched from cryogenic tanks to flat-bottom tanks)).

1294. As PDM EC and PDM Water were so interdependent prior to the acquisition, PDM did not consider it feasible to sell them as separate entities. A Tanner & Company analysis, based on conversations with PDM executives, concluded that "due to the historical connection between the Divisions and their sharing of facilities, the cost of separating the two businesses may be as high as $5 to $10 million." (CX 525, TAN-1000406; Scheman, Tr. 6922-23; *see* Byers, Tr. 6781 ("It was not practical to split [PDM EC and PDM Water] and sell them separately.")).

1295. PDM EC and PDM Water's sharing of resources provided the two divisions with a cost advantage. James Braden, formerly the President of PDM's Water Division, testified that splitting PDM Water from PDM EC "would have lessened our ability to stand alone, and certainly would have diminished the profitability of the operation." (CX 552 at 44 (Braden, Dep.)).

1296. Because PDM EC and Water acted as one cohesive division, divestiture must be complete and include the Water division of PDM. In order to restore both the tangible and intangible assets that the divisions shared, the proposed Order mandates that CB&I divest what it acquired from PDM, plus any additions or improvements that have been made to the assets. (Order, ¶ II.A; *see* Order, ¶ I.U. (definition of "PDM Assets")).

C. In Order to Create a Viable, Effective Competitor, the Tribunal Must Provide the Divested Entity with Certain Tangible and Intangible Assets

1. *A Revenue Base Comparable to PDM's and CB&I's Pre-Acquisition*

1297. In order to be a viable and effective competitor, the new company must have a sufficiently large revenue base to compete for work. CCFF 310-321, 1298-1309. Customers prefer suppliers with a substantial revenue base so that they can be satisfied that constructors will not default on contracts and so that suppliers may more easily secure bonding and other financial guarantees.

1298. In order to secure a bond for a project, a company generally needs "either security or liquid assets equal to about three times of that bond to guarantee the bond." (Gill, Tr. 200).

1299. Howard Fabrication's annual revenues, of $2.5 to $3 million (Gill, Tr. 181), are too small to enable it to compete against CB&I for larger thermal vacuum projects. (Gill, Tr. 199-200; *see id*. at 201 (Although Mr. Gill is in the thermal vacuum chamber business, "financial ability dealt me out.")).

1300. Also, [ ], who had annual revenues of [ ] million in 2001 testified that he would need "a little more financial strength and bonding capacity" to compete for larger low temperature and cryogenic tank projects. ([ ], Tr. 2374, *in camera*; JX 23a at 49 ([ ], Dep.)).

1301. Daniel Knight, a sales representative for CB&I does not believe that a company with $20 million in revenue, such as Chattanooga Boiler & Tank, "would be able to stay in business" if "a problem occurred with one of their projects that cost them $10 million in legal damages." (CX 442 at 152 (Knight, Dep.)).

1302. Because Matrix has annual revenues of approximately $190 million, and lacks a larger company to financially back its operations, Matrix has difficulty convincing LNG customers that they are qualified suppliers. (CX 460 at CBI-E 007235).

1303. Without a revenue base comparable to PDM's, New PDM will be unable to secure the bonding and financial guarantees required by customers. (Scorsone, Tr. 4939-40 (admitting that a company's size affects a customer's willingness to accept a financial guarantee from a company)).

1304. LNG customers have testified that they would not purchase from a divested entity unless it was able to financially guarantee its work. (Izzo, Tr. 6508 ("[T]he first thing I'd be concerned

about with a NewCo is whether I'd put them on my bid list because of ability to bond."); Bryngelson, Tr. 6157 (Q... So is it beneficial to El Paso to have a company that has size, even if a lot of that size doesn't necessarily come from the revenue generated by building tanks? / A. Yes."); Carling, Tr. 4467-4468 ("We expected the lead contractor to stand behind his work, so the bonds and the guarantees would have to come from [a divested entity's] parent company.")).

1305. In order to be an effective competitor, New PDM will need a revenue base comparable to CB&I and the former PDM's prior to the acquisition. As of June 30, 2000, PDM's 6-month revenues were approximately $355 million. (CX 1567 at 3). This base of revenues was sufficient to provide the financial guarantees necessary to compete for LNG projects. (Carling, Tr. 4529 (PDM able to provide sufficient financial guarantees to Enron to be employed for an LNG tank built in Penuelas, Venezuela); [ ], Tr. 1895-96, *in camera* ([ ])).

1306. Part of these revenues will have to be based upon work outside the United States. In the 3 years between 1997 and 1999, 50% of PDM EC's revenue was derived from the U.S., 47% of PDM EC's revenue was derived from the Western Hemisphere outside of the U.S. and 3% of PDM's revenue was derived from other areas. (CX 522 at 18; *see* CX 1731 at 18 (CB&I's revenues from LNG projects are split 50/50 between North America and the rest of the world); CX 1730 at 5-6 (Western Hemisphere business accounted for 72% of new business taken); CX 1729 at 13 (the proportion of new business awarded in the U.S. versus the rest of the world is shifting from 75/25 to 60/40); CX 32 at 3 (international operations provide approximately 20-30% of the revenues for PDM EC and PDM Water on a combined basis)).

1307. CB&I had annual revenues of between $600 to $800 million in the years between 1997 and 2001. (CX 891 at 40-41 (Glenn, Dep.); CX 892; CX 310 at CBI 049068). These revenues made CB&I large enough to win large LNG projects between the time it was spun off from Praxair and the time it acquired PDM. (CX 891 at 47-48 (Glenn, Dep.).

1308. This base of revenues provided CB&I with the financial backing to compete for projects. Gerald Glenn testified that he could not recall any LNG bid contests or thermal vacuum chamber bid contests lost by CB&I prior to the acquisition because it could not provide sufficient financial guarantees to the customer to ensure timely completion of the project. (CX 891 at 48-49, 70 (Glenn, Dep.)).

1309. By providing New PDM with comparable revenues, it will address customer concerns that a divestiture will create two small companies incapable of handling LNG projects. (Bryngelson, Tr. 6155-56).

2. *Assets and Equipment Used to Manufacture the Relevant Products*

1310. In order to successfully compete in the relevant markets, New PDM will need the assets and equipment necessary to manufacture the relevant products. CCFF 321-385, 1311-1326.

1311. CB&I purchased "tangible personal property" from PDM, which included "[a]ll design,

manufacturing, construction, erection, maintenance, research and development, testing and other machinery equipment, vehicles, tools, dies, molds, furniture, fixture, office equipment, field equipment,...supplies and other tangible personal property (together with all spare and maintenance parts, operating manuals, equipment specifications and diagrams) used by PDM's EC and Water divisions." (CX 328 at CBI 001264-CHI). This equipment must be divested, in order to replace PDM.

1312. Tank suppliers benefit from having many field crews and a substantial inventory of equipment because these resources give them "more flexibility in scheduling the work." (CX 615 at 46 (Knight, IHT)). Renting construction equipment from a third party "is traditionally more expensive" than owning the equipment. (CX 615 at 47 (Knight, IHT)).

1313. A complete divestiture will include equipment that is used for constructing low temperature and cryogenic tanks, as well as TVCs. For example, CB&I will have to divest automatic welding equipment which "provides a consistent weld, which is typically smoother," and improves the efficiency of field erection work. (CX 442 at 154 (Knight, Dep.); CX 624 at 131 (Crain, IHT)). According to Mr. Gill, the newly divested competitor will also need cranes in order to efficiently construct TVC's. (Gill, Tr. 268; *See* Cutts, Tr. 2388. (Mr. Cutts described the potential equipment that would make AT&V more competitive with CB&I: "[T]hose four crews I talked about would be fully equipped and a fully equipped crew has a crane with them, has air compressors, welding machines, all sorts of general rigging equipment and other incidentals. You can figure a standard crew, it's about a half a million dollars worth of equipment that goes with the crew.")).

1314. Because CB&I owns equipment that gives it a competitive advantage over other firms, Respondents must divest its specialized equipment to the newly created entity. For example, CB&I's automatic welding equipment includes "some self-contained automatic girth welders" which have an advantage over other types of automatic welding equipment. (CX 706 at 99 (Newmeister, IHT)). Mr. Newmeister of Matrix testified that automatic welding equipment is needed to be cost competitive in the construction of LNG tanks. (CX 706 at 98 (Newmeister, IHT); *See* CX 706 at 98-99 (Newmeister, IHT). (CB&I has patented welding equipment that is useful for welding large tanks); *See also* Cutts, Tr. 2379 ("Well, these tanks are built out of fairly sophisticated materials. You don't just weld them up any old way. And it's actually automated equipment that you weld them up with. The equipment is quite expensive to develop.")).

1315. The newly divested firm will need additional equipment that will allow it to have blasting, painting, and pressing capabilities. As this equipment is multi-functional for LIN/LOX tanks, LPG tanks, and LNG tanks, the new firm will need these capabilities in order to compete against CB&I. (*See* CX 706 at 64-66 (Newmeister, IHT)) (A large press and a large number of dyes for pressing the dome roofs used for LIN/LOX tanks costs roughly $2 million. Additionally the automated blast and paint system used to paint the outer tank on a LIN/LOX tank costs roughly $2-3 million. John Newmeister of Matrix testified that his firm can not justify an investment in this equipment based solely on the LIN/LOX business. However, this equipment can be used for other products, including pressure spheres, LNG tanks and LPG tanks); *see also* Cutts, Tr. 2388 (Mr. Cutts testified that additional field crews would require an additional $2 million in equipment.)).

1316. In order for New PDM to compete with CB&I, it needs to enjoy the same advantages and have the same capabilities as Respondents. A full restoration of the equipment that PDM EC and Water possessed before the acquisition is therefore warranted.

1317. In order to be as efficient and as cost-competitive as CB&I and the former PDM, New PDM will need fabrication facilities within the United States. CCFF 307-308. [

]. ([ ], Tr. 1635-37, *in camera* ([ ] lack of a U.S. fabrication facility is cost disadvantage versus CB&I.)).

1318. A U.S. fabrication facility also provides New PDM with control over schedule and quality, two key factors that customers consider when selecting a tank supplier. (Newmeister, Tr. 1569-1570 (If the divested entity must subcontract fabrication work, it will "lose control of schedule and quality, and those are two key important things the customers are looking for.")).

1319. Possessing multiple fabrication facilities is advantageous because it allows a competitor to rationalize its freight costs. (Vetal, Tr. 428, 432-33; *see* CX 615 at 45 (Knight, IHT) (In competitive situations, a tank supplier benefits from having a fabrication facility located close to a job so that its freight costs are minimal.); CX 849 at 214 (Steimer, IHT) (having a fabrication facility in the Gulf region would have made PDM more competitive by lowering its freight costs)).

1320. Multiple facilities not only promote a geographic competitive advantage but also flexibility in fabrication. Daniel Knight, a salesman for CB&I, testified that tank suppliers with multiple fabrication shops and many field crews can "be more flexible in order to meet [changes in customers' schedules]," including needing "the project faster or at a different time period..." (CX 442 at 152 (Knight, Dep.); *see id*. at 156).

1321. CB&I has procurement offices and fabrication facilities located throughout the world, which enables CB&I to supply materials to its various job sites effectively. (CX 258, CBI-H001794; Scorsone, Tr. 4894).

1322. CB&I's facilities include those facilities that it acquired from the former PDM EC and Water Divisions, located in Provo, Utah; Clive, Iowa; and Warren, Pennsylvania. (CX 332 at CBI 001350-CHI).

1323. Each of these former PDM facilities have different fabrication capabilities. *See* CX 535 at 182-3 (Scorsone, Dep.) ("the Provo plant does not have a very large capacity press, whereas the Clive plant and the Houston plant do. The Houston plant is very efficient at rolling and beveling shell plates where the Provo plant and Warren plant and Clive plant for that matter probably aren't that efficient. The Provo plant has a little bit more floor space for weldment and their assemblies, and Houston doesn't have as much."); CX 615 at 46 (Knight, IHT) (Some fabrication plants cannot fully fabricate storage tanks in the manner required by PDM because they do not support "[c]ertain types of rolling and pressing operations" for thick steel plate)).

1324. Absent the divestiture of a fabrication facility, it will take the divested company approximately nine months and about $9 million to build another fabrication facility in order to compete effectively. (*See* CX 922; Simpson, Tr. 3166).

1325. In order to transfer the former PDM facilities to New PDM, CB&I will need to divest the leases for what were PDM's fabrication facilities to the newly created entity. According to Peter Scheman, the investment banker from Tanner, Iron Bridge Holdings owns the Warren, Pennsylvania and Clive, Iowa fabrication plants and leases these plants to CB&I under a ten year agreement. (JX 34 at 12-13 (Scheman, Dep.)).

1326. Complaint Counsel's proposed Order requires that CB&I divest its interest in all three of PDM's former fabrication facilities, the tangible assets necessary to manufacture the relevant products, and all additions and improvements thereto. (Order, ¶ II.D.) The divestiture of these assets are necessary to effectively restore competition. (*See* Simpson, Tr. 3155-56)

3. *Assets, Equipment And Operational Resources Used to Manufacture More Than the Relevant Products*

1327. An effective divestiture would need to include resources necessary to make flat bottom tanks, gravel tanks, and other tanks outside of the relevant market.

1328. There is not enough business in the relevant markets to sustain a divested entity. Projects within the relevant markets are awarded infrequently. (CX 1212 at 6, *in camera* (CB&I has won [ ] LNG projects and [ ] LPG projects since 1990)).

1329. CB&I and, prior to the acquisition, PDM, use their resources to manufacture both the relevant products, as well as other products.

1330. Engineers can be utilized for both low temperature and cryogenic tank construction and the construction of other types of tanks. Mr. Samuel Leventry testified that CB&I's policy in the engineering department is to "move people from area to area. We move people from flat bottom tanks to cryogenic tanks. We move people from pressure vessel tanks depending on our workload." CX 497 at 365 (Leventry, Dep.)).

1331. Sales representatives also service both the low temperature and cryogenic tank market and the industrial tank market. CB&I's sales staff, such as Daniel Knight, sell industrial tanks, cryogenic tanks and pressure spheres. (CX 615 at 12, 14 (Knight, IHT) (also sold both industrial tanks and cryogenic tanks for PDM)).

1332. Mr. Scorsone testified that, prior to the acquisition, PDM's "water division and the EC division routinely swapped field labor." (Scorsone, Tr. 2842). "The field labor that builds a water tank one day can go and build a flat-bottom tank and go build LOX/LIN, can go build an LNG... [M]ost of the people that do our LNG work and the low-temp work, they work most of the time on flat-bottom

tanks." (CX 535 at 96 (Scorsone, Dep.)). At CB&I, field construction employees are shared among the CB&I's water tank, industrial tank, and cryogenic/low temperature tank businesses. (CX 535 at 140 (Scorsone, Dep.)).

1333. PDM Water and PDM EC shared fabrication facilities, tool houses, and field erection equipment. (CX 552 at 47-48 (Braden, Dep.)). PDM's Water and EC divisions also swapped equipment stored in tool houses, including "off-the-shelf items [such as] welding machines, air compressors, generators." (CX 535 at 95 (Scorsone, Dep.)).

1334. Sharing resources benefitted both PDM EC and PDM Water because it **"facilitated a more steady flow of work, a more consistent flow of work through ... [the] warehouses [and] fabricating plants."** (CX 552 at 52-53 (Braden, Dep.) (emphasis added); Scorsone, Tr. 4779-80).

1335. Currently, CB&I's Water and Industrial divisions share field erection personnel, project managers, field erection equipment, and fabrication facilities. (CX 552 at 49-50 (Braden Dep.); CX 535 at 141 (CB&I Water and CB&I Industrial share equipment.)).

1336. The sharing of resources between PDM EC and PDM Water was beneficial to the company because, among other things, it allowed for a more consistent flow of work through the company's fabrication facilities. (Scorsone, Tr. 4779-80; CX 552 at 52-53 (Braden, Dep.)).

1337. Mr. Glenn testified that a firm that supplies both standard industrial tanks and the specialized products in the relevant markets will be more financially stable, and can even result in a competitive advantage over other firms:

> Certainly, if you're in a number of different businesses making a number of different products, different product offerings, your sales force is probably more efficient, your revenues are probably going to be higher than if you were just in one smaller segment, allowing you to spread overheads, probably can have higher utilization in construction equipment, in fabrication plants, et. cetera. We at least believe that the higher revenues that we can achieve over various markets is advantageous to us. I would just add there that in spreading those overheads, we're better able to bid at a lower cost which allows us to win more work and we're able to spread – the customer gets the benefit of that lower cost and the company gets some benefit of that.

(CX 431 at 23 (Glenn, Dep.)).

1338. In order to replace the competition that was eliminated by the acquisition, New PDM would need the economies of scope that PDM obtained from the shared operations of its EC and Water divisions. (Simpson, Tr. 3607). To provide New PDM with the same advantages PDM obtained from its shared operation of its Water and EC divisions, the Order requires CB&I to divest whatever intangible and tangible assets it acquired from both PDM EC and PDM Water. (Order, ¶

II.D.; *see* Order, ¶I.T. (assets to be divested are defined as "all rights, title and interest in and to all assets, tangible or intangible, acquired by CB&I from PDM in the Acquisition.").

4. *A Track Record of Building Tanks Successfully in the United States*

1339. A divested entity will require a backlog of work, both in the relevant markets and in general industrial and water tanks, to sustain it while it regains customer recognition.

1340. There is a disincentive to purchase from a company that has not constructed a tank within the United States because of the business risks involved. With no track record, New PDM would be unable to compete "short of ... taking a big dive on the price." (CX 1731 at 44).

1341. [ ]. ([ ], Tr. 2385, *in camera*). [ ]. ([ ], Tr. 2385, *in camera*; CX 258 at CBI-H001816-832; CX 1731 at 44 (LNG tank owners do not want to purchase from a second-rate company without a track record because the work is "very specialized, very sophisticated.")).

1342. It takes time to build a track record from scratch. (CX 167 at CBI-PL007052; Cutts, Tr. 2372, 2385).

1343. New PDM must be given sufficient projects that are currently in progress or are about to begin construction, in order to provide it with a track record at the time of divestiture. As of December 31, 2001, CB&I had a backlog of contract work worth $835.3 million. (CX 1033 at 7).

1344. [ ]. (Cutts, Tr. 2385, *in camera* (track record and reputation are important); Blaumueller, Tr. 300-02 (experience is important); Vetal, Tr. 427-28 (experienced personnel is important to a company's reputation because "[y]ou have to convince the customers that you're qualified, and you need to have the resumes and the experienced people to do so.")). By providing New PDM with a backlog of work and the experienced personnel to successfully complete the work, a divestiture would address customers' concerns that personnel may be pulled off current projects. (Kelly, Tr. 6156).

1345. As companies in the relevant products learn by trial and error, CB&I would need to divest some of its experienced employees. A divested entity would benefit from the wisdom of experienced people from CB&I and former PDM by obtaining "the history, the successful history, knowing the technology and all of the issues that have caused problems in the past that people know and won't make mistakes – make the same mistakes again. Conversely, if people were starting from scratch, they would have to make the mistakes that we've experienced over the years and correct them and thus know not to make them again." (Scully, Tr. 1240). (*See* Newmeister, Tr. 1582-83 (There are special welding procedures and construction skills related to LIN/LOX tanks that Matrix learned

and developed from former PDM employees with experience building LIN/LOX tanks.)).

1346. To make sure that the new entity has the reputation, experience and sufficient business base to be a viable competitor, CB&I must contribute a portion of its existing backlog of work, for work within, as well as outside, the relevant product markets, to New PDM. (*See* Order, ¶ II.C.).

5. *Customer Approval to Transfer Projects to the Divested Company*

1347. In order to provide New PDM with a backlog of work, CB&I will have to obtain its customers' approvals to transfer the work to the acquirer of New PDM.

1348. Many of the company's contracts have non-assignability clauses and key employee provisions that require the customer to approve the assignment of the contract or the replacement of key employees on a project. (Glenn, Tr. 4168-69; Izzo, Tr. 6508).

1349. Obtaining customer approvals is feasible. Prior to its acquisition, PDM received approvals from its customers to transfer its contracts to CB&I. (Byers, Tr. 6804). Should PDM have decided to liquidate the EC division, Mr. Byers testified that PDM was fully prepared to go out and gain consents from its customers to allow the sale of its contract backlog to third parties for completion. (Byers, Tr. 6804-05).

1350. Complaint Counsel's Order requires Respondents to gain customer approval to transfer work contracts in order to strengthen the competitiveness of the New PDM. (Order ¶ II.C.).

6. *Key Personnel*

1351. In order to be an effective competitor, New PDM will need personnel with experience in the relevant product markets.

1352. Currently, CB&I enjoys a competitive advantage over other firms due to the concentration of experienced industry personnel in its divisions. Luke Scorsone testified that the combination of human resources was the primary benefit of a merger of CB&I and PDM, specifically "the coming together of some of the technical capability, the ability to execute work more efficiently, the ability to serve our customers better." (CX 646 at 106 (Scorsone, IHT)).

1353. Experienced employees are specially trained and therefore valuable in this industry. Mr. Knight, formerly a salesman for PDM EC, testified that hiring people off the street for PDM field crews is "not economical." It "would involve training costs" because PDM's "field crews are trained in our procedures and with our equipment." (CX 615 at 25, 47 (Knight, IHT)). Similarly, project managers with no past experience in managing tank construction projects must be trained. (CX 615 at 50 (Knight, IHT)).

1354. In order to manufacture the relevant products, CB&I must transfer personnel that are experienced in the construction of low temperature and cryogenic tanks and TVCs. Mr. Braden, the

President of CB&I's Water Division testified that "there's a fairly steep learning curve in our business, and to go out and try to fill experienced positions would require some effort... People have to become familiar with our products and our processes. Processes more than anything." (CX 552 at 62 (Braden, Dep.)).

1355. Lack of sufficient personnel will limit New PDM's capacity to handle multiple projects. Mr. Cutts of AT&V testified that AT&V faces capacity constraints from the lack of field, marketing and engineering personnel. (Cutts, Tr. 2372-73 (In order to replace PDM, AT&V would need "a key marketing person in cryogenics and a key technical person in cryogenics. And then I'd probably also want the foremen and pushers and all the gear for about four more crews."); Harris, Tr. 7595).

1356. Prior to the acquisition, PDM EC employed 231 salaried employees and 768 hourly employees. (CX 822 at 8; *see* CX 522 at 26 (in July 2000, PDM EC employed 717 hourly field personnel)). PDM EC's salaried employees included 46 engineers, 36 draftsmen, and 17 estimators. (CX 522 at 26).

1357. CB&I employees work on a number of projects simultaneously. (Glenn, Tr. 4168). Dr. Simpson stated his expert opinion that CB&I and PDM EC were able to compete so effectively, in part, because "they had large engineering staffs to design the structures, and they had field erection crews in the U.S. to build the structures." (Simpson, Tr. 3156). Dr. Simpson's understanding is that PDM EC and CB&I each had over a hundred engineers alone. (Simpson, Tr. 3157).

1358. Although Respondents laid off personnel as a result of the acquisition, Mr. Braden, the President of CB&I's Water Division, is not aware of any "employment agreements or conditions" that preclude CB&I from hiring additional personnel in the event of a divestiture or break-up of the company." (CX 552 at 61-62 (Braden, Dep.)). Therefore, CB&I can hire additional employees to be transferred to New PDM or can hire employees to replace those already transferred.

1359. Without sufficient experienced personnel, New PDM will not be able to compete with CB&I. Complaint Counsel's Order therefore requires CB&I to take any actions necessary "to ensure the transfer to or employment by the Acquirer" of sufficient experienced personnel. (Order, ¶ II.F.).

7. *Intellectual Property, Including PDM's Name*

1360. In order for a divestiture order to be effective, Respondents must divest all of the intellectual property and other intangible assets related to the relevant products, including the PDM name, rights to which are under the collective control of Respondents.

1361. Mr. Cutts, vice president of AT&V, testified that AT&V would need the following assets to effectively compete in the relevant markets: "... their customer base, a list of all their customers, all their bids, everyone they've bid to in the last ten years. Second, their technical specifications associated with cryogenic LNG applications. Their welding systems associated with certain cryogenic applications. Their name, so I don't have to spend ten years building our name and fighting everybody in the industry who says things that aren't true about us." (Cutts, Tr. 2372).

1362. Because tank suppliers learn through trial and error, New PDM would need CB&I/PDM's standards, manuals and guides relating to the relevant products, in order to avoid repeating past mistakes and improve its design and product line. (Cutts, Tr. 2373 (technological information includes "purchasing standards, design standards, calculations, drafting standards, vendor list[s]"); Cutts, Tr. 2388-89 (AT&V considers the manual information valuable because "there could be information that improves our design, product line")).

1363. Without providing New PDM with CB&I/PDM's intellectual property, it may take New PDM as long as two years from developing the initial concept to securing its first contract. (Newmeister, Tr. 1585).

1364. CB&I currently possesses over 100 U.S. patents which give CB&I a cost advantage over other competitors. (CX 230 at CBI-PL 055446). These patents provide CB&I with a "strong position with proprietary technology." in the LNG market. (CX 230 at CBI-PL 055453). For example, CB&I has a patent for an ultrasonic technique for examining welds. This technique is used in LNG tank projects and is safer and more efficient than examining welds using radiography. (CX 1550 at 258-61 (Bacon, Dep.); CX 241 at CBI-PL 4000565; *see id*. at 261-62; *id*. at 291-94, 296 (Bacon, Dep.) (CB&I has patents on a "scaffoldless tank erection method" that lowers the cost of erecting flat bottom tanks). A proper divestiture should license this technology and any other patented technology to New PDM. (*See* Order, ¶ II.E.).

1365. CB&I must also release its interest in, and transfer to New PDM the right to use, the PDM name. The CB&I and PDM names are critical to the viability of New PDM because of the goodwill and reputation associated with these names that has been built up over decades. (Cutts, Tr. 2389 ("the PDM name, like the CB&I name, could obviously break down a lot of walls and barriers.")). In order to build a reputation similar to that of PDM, Mr. Cutts estimates that AT&V would have to spend over a million dollars in marketing alone for the next three years. (Cutts, Tr. 2382).

1366. Following complete divestiture, CB&I will nevertheless continue to benefit from the trade secrets and other intellectual property it has absorbed from PDM. To assure that the acquirer will be able to compete on an equal footing with CB&I, as PDM once did, Complaint Counsel's proposed Order mandates that the combined intellectual property of CB&I and PDM must be shared with New PDM. (Order, ¶ II.E.; *see* Simpson, Tr. 3609).

8. *Training and Technical Assistance*

1367. CB&I will need to provide training to the personnel of New PDM. CB&I invests heavily in training its various construction crews, and its crews are specialized in specific structures or tasks, such as tank erection, foundational work, field-erection, piping, electrical work, or insulation. (CX 258, CBI-H001794).

1368. Training and technical assistance will allow New PDM to have access to the best

practices implemented by CB&I after the acquisition. Since the acquisition, CB&I, has spent "maybe thousands of man-hours looking into the cost basis, looking into the technical basis, looking into what the actual procedures or equipment or whatever it is that's involved" in the engineering, design, fabrication and erection of tanks sold by CB&I and PDM. Based on this analysis, CB&I has adopted "best practices" for supplying tanks and operating its company. (CX 1550 at 301-303 (Bacon Dep.)). Because these business exploits may lower the costs of supplying the relevant products, the divestiture to Newco should include these "best practices."

1369. Technical assistance alone would be insufficient to restore an effective competitor. Mr. Gill testified that he has obtained technical assistance in the past, but that it has not increased his effectiveness as a competitor for TVCs. (Gill, Tr. 202 ("[I]t would take more than mentoring" for Howard Fabrication to be competitive)). Likewise, Mr. Patrick Neary of TRW testified that technical assistance would be insufficient to make a thermal vacuum chamber provider as competitive as PDM EC and CB&I. (Neary, Tr. 1458).

1370. Because training and technical assistance are necessary in order to restore a viable competitor in the relevant markets, the Order requires CB&I to equip New PDM with the knowledge base necessary to be a competitor. (Order, ¶¶ II.E, IV.).

9. *Additional Safeguards to Ensure that it is Enforced*

1371. The divestiture will require the appointment of a monitor trustee to oversee its effective implementation, as recognized by Respondents. (Simpson, Tr. 5715). The appointment of a trustee is a normal part of the divestiture process. *See* Casey Triggs, "FTC Divestiture Policy," 17 Antitrust 75, 76 (2002)).

1372. The monitor trustee would work with the Commission's Compliance Division, a specialized division whose purpose is to oversee and implement Commission divestiture orders, to reestablish CB&I/PDM into two viable and competitive entities. (*See* Order, ¶ V.).

1373. One customer, Mr. Jeffrey Sawchuk, testified that any concerns regarding relief would depend on how the restored competitors are set up. (Sawchuk, Tr. 6066). Proper monitoring of the divestiture would address Mr. Sawchuk's concern.

1374. The only effective remedy that will restore competition is the divestiture of the PDM assets that CB&I acquired and the reestablishment of PDM as a independent, viable competitor. In order to restore competition, CB&I must divest certain tangible and intangible assets, such as fabrication facilities, personnel, and the PDM name. In addition, CB&I must provide the divested entity with technical assistance and assist the divested entity in building a track record.

COMPLAINT COUNSEL'S PROPOSED CONCLUSIONS OF LAW

1. The Federal Trade Commission has jurisdiction over the subject matter of this proceeding, and over Respondents Chicago Bridge & Iron Company, N.V. ("CB&I), Chicago Bridge and Iron Company and Pitt-Des Moines, Inc. ("Pitt-Des Moines").

2. The Commission has jurisdiction over the subject matter of this proceeding pursuant to Section 7 of the Clayton Act, 15 U.S.C. 21, and Section 5 of the Federal Trade Commission Act, 15 U.S.C. 45.

3. At all relevant times herein, Respondents were engaged in commerce, as "commerce" is defined in Section 1 of the Clayton Act, as amended, 15 U.S.C. § 12, and affected commerce, as "commerce" is defined in Section 4 of the FTC Act, as amended, 15 U.S.C. § 44.

4. The FTC is vested with authority and responsibility for enforcing, *inter alia*, Section 7 of the Clayton Act. Clayton Act § 11(a), 15 U.S.C. § 21(a).

5. On or about February 7, 2001, CB&I acquired Pitt-Des Moines' Water and Engineered Construction Divisions ("PDM"). The acquisition is a transaction subject to Section 7 of the Clayton Act, 15 U.S.C. § 18, and Section 5 of the FTC Act, 15 U.S.C. § 45.

6. The FTC has jurisdiction pursuant to Section 11 of the Clayton Act, 15 U.S.C. § 21, to bring this administrative proceeding against the CB&I/PDM merger.

7. Section 7 of the Clayton Act prohibits any acquisition of stock or assets "where in any line of commerce . . . in any section of the country, the effect of such acquisition may be substantially to lessen competition or to tend to create a monopoly." 15 U.S.C. § 18.

8. Section 7 of the Clayton Act is intended to reach incipient monopolies and trade restraints outside the scope of the Sherman Act.

9. Section 7 of the Clayton Act uses the word "may" to indicate that the concern is with probabilities, not certainties. Section 7 does not require proof from Complaint Counsel that a merger has caused higher prices in the affected market. To satisfy Section 7, the FTC need only show a reasonable probability that the proposed transaction would substantially lessen competition in the future. All that is necessary is that the merger create an appreciable danger of anticompetitive consequences in the future. A predictive judgment, necessarily probabilistic and judgmental rather than demonstrable, is called for.

10. Under Section 7 of the Clayton Act, the FTC makes out a *prima facie* case, and gives rise to a presumption of violation, by showing: (1) the "line of commerce" or product market; (2) the "section of the country" or geographic market; and (3) the transaction's probable effect on concentration in the product and geographic markets.

11. Field-erected liquefied natural gas storage tanks ("LNG") are an appropriate line of commerce for evaluating the likely competitive effects of the acquisition.

12. LNG import terminals are an appropriate line of commerce for evaluating the likely competitive effects of the acquisition.

13. LNG peak shaving plants are an appropriate line of commerce for evaluating the likely competitive effects of the acquisition.

14. Field-erected liquid nitrogen, oxygen and argon storage tanks ("LIN/LOX") are an appropriate line of commerce for evaluating the likely competitive effects of the acquisition.

15. Field-erected liquid petroleum gas storage tanks ("LPG") are an appropriate line of commerce for evaluating the likely competitive effects of the acquisition.

16. Large (over 20 feet in diameter), field-erected thermal vacuum chambers ("TVC") are an appropriate line of commerce for evaluating the likely competitive effects of the acquisition.

17. The United States is the appropriate geographic region for evaluating the likely competitive effects of the acquisition in each of the above lines of commerce.

18. The Parties are in agreement about the relevant product and geographic markets.

19. The Herfindahl-Hirschman Index ("HHI") is an appropriate measure of market concentration.

20. The acquisition by CB&I of PDM significantly increased concentration in the relevant product markets in the United States, and result in highly concentrated markets.

21. The market shares and HHI concentration levels that resulted from this merger in the relevant markets make the merger so inherently likely to lessen competition substantially that it is presumptively unlawful under Section 7 of the Clayton Act.

22. Having established a *prima facie* case, the burden of producing evidence that the merger is not, in fact, anticompetitive shifts to Respondents. To meet their burden, Respondents must show that the market-share statistics give an inaccurate prediction of the acquisition's probable effect on competition.

23. Proof of ease of entry by other firms may rebut the presumption of anticompetitive harm, but Respondents have failed to do so here.

24. Entry must be timely, likely, and sufficient in its magnitude, character and scope to deter or counteract the competitive effects of a merger. In order for entry to be sufficient to restore competition, it must be entry that replaces the competition that existed prior to the acquisition and such

entrants must be profitable at pre-merger prices. Even a showing of actual entry is insufficient to alleviate concern, unless that entry also indicates the likelihood of sufficient growth by the entrant to deter or counteract the anticompetitive effects of the merger. Respondents have offered no evidence to satisfy these requirements, and specifically have offered no evidence that any alleged entrant will enter the relevant product markets in the United States within two years, be profitable at pre-merger prices, and fully replace PDM as a competitive force.

25. Due to entry barriers, entry by new suppliers or the expansion of fringe suppliers is not likely to avert the anticompetitive effects of the merger in the relevant markets.

26. Respondents have not presented an efficiencies defense in support of the merger.

27. Respondents have asserted an "exiting assets" defense. The antitrust laws, and this Tribunal, do not recognize the existence of such a defense.

28. The antitrust laws recognize a "failing firm" or "failing division" defense. In order to satisfy this defense, Respondents must demonstrate that: 1) PDM would be unable to meet its financial obligations in the near future; 2) PDM would not be able to reorganize successfully under Chapter 11 of the Bankruptcy act; 3) PDM has made unsuccessful good-faith efforts to elicit reasonable alternative offers of acquisition of the assets of the failing firm that would keep its tangible and intangible assets in the relevant markets and pose a less severe danger to competition than does the proposed merger; and 4) absent the acquisition, the assets of PDM would exit the relevant markets. Respondents failed to prove each of these elements.

29. Respondents have not produced any significant evidence rebutting the presumption of violation of Section 7 of the Clayton Act and Section 5 of the FTC Act.

30. Had Respondents produced significant evidence sufficient to rebut the presumption, the burden of producing further evidence of anticompetitive effect would have shifted to Complaint Counsel.

31. Although Complaint Counsel is not required to prove the existence of actual anticompetitive effects resulting from the merger, such evidence, either in the form of unilateral post-merger price increases or coordinated interaction, negates any attempt to rebut the FTC's *prima facie* case, and independently establishes a violation of Section 7 of the Clayton Act and Section 5 of the FTC Act.

32. Because the merger would eliminate competition from PDM, CB&I's closest competitor in the relevant markets, the merger is likely to increase CB&I's ability to raise prices unilaterally. Anticompetitive price increases are more likely in a merger involving the two firms that buyers consider to be their first and second choices. A merger involving the first and second lowest-cost sellers could cause prices to rise to the constraining level of the next lowest-cost seller.

33. The acquisition is likely to give rise to coordinated anticompetitive effects through tacit

or express collusion. Section 7 of the Clayton Act seeks to prohibit excessive concentration, and the oligopolistic price coordination it portends. Where rivals are few, firms will be able to coordinate their behavior, either by overt collusion or implicit understanding, in order to restrict output and raise price.

34. Complaint Counsel need not show a likelihood of explicit collusion. A merger violates Section 7 of the Clayton Act if the remaining firms will be more likely to engage in conduct that is likely to result in higher prices, even if that conduct, in itself, would be entirely lawful. Section 7 seeks to prevent a market structure that enhances the ability to engage in both explicit and tacit collusion. The relative lack of competitors eases coordination of actions, explicitly or implicitly, among the remaining few to approximate the performance of a monopolist.

35. Complaint Counsel has offered substantial evidence of anticompetitive effects resulting from the merger, any of which would independently mandate a finding against Respondents as a matter of law.

36. CB&I's acquisition of PDM violates Section 7 of the Clayton Act because "the effect of such acquisition may be substantially to lessen competition or to tend to create a monopoly." 15 U.S.C. § 18. The acquisition also constitutes an unfair method of competition in or affecting commerce in violation of Section 5 of the FTC Act. 15 U.S.C. § 45.

37. The Order entered herein is appropriate to remedy the violation of law found to exist, and to protect the public now and in the future.

Respectfully submitted,

_____

J. Robert Robertson
Counsel Supporting the Complaint

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Dated: February 14, 2003

CERTIFICATE OF SERVICE

I hereby certify that on February 25, 2003, I caused a copy of the Public Version of Complaint Counsel's Proposed Findings of Fact and Conclusions of Law to be delivered by hand to

The Honorable D. Michael Chappell
Federal Trade Commission
H-104
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Dated: February 25, 2003

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April Tabor