PUBLIC VERSION

UNITED STATES OF AMERICA
BEFORE FEDERAL TRADE COMMISSION

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III. LNG FINDINGS OF FACT

A. LNG BACKGROUND

3.1 Liquefied natural gas ("LNG") is natural gas that has been converted to a liquid by cooling and condensing the natural gas to about -162° C (-260° F). (Glenn, Tr. 4066; CX 1259, at CB&I-HWH030454). LNG is composed primarily of methane (typically at least 90%), but may also contain ethane, propane and heavier hydrocarbons. (Kistenmacher, Tr. at 889; CX 1259, at CB&I-HWH030464). Neither LNG, nor its vapor, can explode by common ignition sources in an unconfined environment. (CX 1259, at CB&I-HWH030469). LNG weighs approximately 45% as much as the same volume of water. (*See* CX 1259, at CB&I-HWH030465).

3.2 The term methane cannot be used interchangeably with the term LNG because natural gas may contain other components such as nitrogen, ethane and higher hydrocarbons. (Kistenmacher, Tr. 889). Natural gas is not pure methane. (Kistenmacher, Tr. 889). For example, in Europe natural gas may be comprised of at least 10% nitrogen. (Kistenmacher, Tr. 889).

3.3 The purpose of an LNG tank is to contain natural gas in liquid form. (Glenn, Tr. 4066; Price, Tr. 530). When stored at ambient temperatures (i.e. room temperature), natural gas takes a gaseous form. (CX 1259, at CB&I-HWH030454). When liquefied, natural gas is far easier to store, as natural gas in gaseous form takes up 600 times the volume of its liquid equivalent. (CX 1259, at CB&I-HWH030454).

3.4 LNG tanks are essentially comprised of a tank within a tank. (

sidewalls and suspended deck often utilize an insulation called perlite. (Glenn, Tr. 4110; RX 428, at CB&I001194-PLA; CX 573, at CB&I-PL031582-83). The inner tank is made of a material suitable for cryogenic temperatures (-260° F) and is usually made out of a nine percent nickel steel. (Glenn, Tr. 4109; Price, Tr. 530; RX 428, at CB&I001194-PLA). Nine percent nickel steel is used for the inner tank because it is less brittle, at low temperatures, than carbon steel. (Glenn, Tr. 4109-4110). The outer tank and roof contain the LNG vapor and protect the insulation systems; they are usually made of carbon steel. (*See* RX 428, at CB&I001194-PLA).

1. Types Of LNG Tanks

3.5 There are various types of LNG tanks including single containment, double containment and full containment tanks. (Scorsone, Tr. 4919).

3.6 A single containment tank is a conventional double wall metal storage tank with an earthen dike. (RX 428, at CB&I001193-PLA). For a single containment tank, only the inner tank is capable of containing the liquefied natural gas. (Price, Tr. 530-31; RX, 428 at CB&I001193-PLA). A low dike wall is built around the inner tank for spill containment. (Price, Tr. 530-31; RX 428, at CB&I001193-PLA). A single wall tank is the least expensive of the three tank types (J. Kelly, Tr. 6274). Historically, single containment LNG tanks have been constructed in the U.S. (Glenn, Tr. 4108; Scorsone, Tr. 4919).

3.7 A double containment tank is a conventional single containment tank surrounded by a close-in but separate, high concrete dike. (Price, Tr. 531; RX 428, at CB&I001193-PLA). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XX]** (Jolly, Tr. 4720). For a double containment tank, both the inner

("FERC") regulations, which look at factors such as amount of available land and population density. (*See*

6492). LNG customers have also indicated that the "enhanced value" of double containment may be greater than the additional cost and, therefore, that might be what they build in the future. (Cutts, Tr. 2501). Customers also view full and double containment tanks as safer than single-containment tanks. (Glenn, Tr. 4112-13; Hall, Tr. 1842-

are allowed to build additional single containment tanks because the new construction is "grandfathered". (Eyermann, Tr. 7054).

3. Types Of LNG Facilities

3.15 The first and most common type of LNG facility is known as an "import terminal." LNG import terminals are constructed near coastal areas to receive natural gas from LNG ship or truck tankers. (Glenn, Tr. 4068). Import facilities vaporize LNG on a continuous basis to meet the day-to-day demands for gas year round. (CX 1259, at CB&I-HWH030458).

3.16 Owners of import terminals may include major utilities, oil companies and pipeline

shipboard regasification technology will allow natural gas to be transferred to specific markets in a quicker time, and may not be subject to certain permitting hurdles. (Bryngelson, Tr. 6158-59).

3.19 The second type of LNG facility is known as a "peak-shaver." LNG peak-shaving facilities take natural gas from gas transmission lines during warm months, liquefy the gas and store the liquid until cold weather. (Glenn, Tr. 4069; CX 1259, at CB&I-HWH030454). During severe cold periods, liquid is withdrawn from storage, vaporized (converted into a gas) and reinjected into the gas transmission line to meet peak winter demands for natural gas. (CX 1259, at CB&I-HWH030454).

3.20 The major components of a peak-shaving facility include a liquefaction unit, a vaporization system and an LNG tank. (Kistenmacher, Tr. 885).

3.21 A peak-shaving facility includes a process unit whereby incoming natural gas is liquefied. (Kistenmacher, Tr. 884). Natural gas is brought in from a natural gas pipe, liquefied in the liquefaction unit and stored in an LNG storage tank. (Kistenmacher, Tr. 884-85). When natural gas is needed, the LNG is vaporized and sent back through the natural gas pipe. (Kistenmacher, Tr. 885).

3.22 Owners of peak-shaving facilities include gas utilities, electric utilities, and companies that own and operate pipelines. (Glenn, Tr. 4070). About eighty-two of these plants are in operation in the United States, Canada, England, the Netherlands, Belgium, West Germany and Australia, with sixty-six of the plants located in the United States. (CX 1259, at CB&I-HWH030454).

3.23 There are several companies that compete with CB&I for liquefaction units for peak-shaving facilities in the U.S. including Air Products, Black & Veatch, Air Liquide,

Lotepro, and BOC. (Davis, Tr. 3188). Since 1990, Air Products has bid on peak-shaving projects for Alabama Gas Company; Key Span on Long Island; Cove Point; and Philadelphia Gas Works in Richmond, Virginia. (Davis, Tr. 3193). These projects

created to be used by fabrication shops, construction crews, and subcontractors. (Scorsone, Tr. 4886-87).

3.28 The engineering of an LNG tank does not differ from the engineering of any cylindrical flat-bottomed tank. (Rano, Tr. 5894). The same processes are used. (Rano, Tr. 5894). In each case, the specifications provided by the customers are digested, drawings are produced, and lists of needed raw materials are generated. (Rano, Tr. 5894-95).

3.29 CB&I does not have an engineering staff that is solely directed at working on LNG projects, LIN/LOX projects, LPG projects, or thermal vacuum chambers projects. (Scorsone, Tr. 4887). CB&I uses its engineers across several product lines. (Scorsone, Tr. 4888). Engineers who design flat-bottom tanks also have the capability to design LNG tanks. (Glenn, Tr. 4114-15; Scorsone, Tr. 4888). CB&I's engineers are located in Pittsburgh, Pennsylvania, Plainfield, Illinois, Houston, Texas, Canada, the Middle East, Philippines, and Australia. (Scorsone, Tr. 4887).

b. Materials procurement

3.30 After engineering is completed, the builder begins the process of purchasing raw materials. (Rano, Tr. 5895). A bill of materials, containing a list of the necessary materials, is then sent to the procurement group. (Scorsone, Tr. 4889-bottom tanks; (Scorsone, TRN90 T

Charleroi and Cruset Loix. (Scorsone, Tr. 4890-91). CB&I currently procures nine percent nickel steel from sources in either Europe or Japan, including NKK and Mitsui. (Scorsone, Tr. 4891).

3.32 In the past, CB&I made an effort to locate an American supplier of 9% nickel steel. (Rano, Tr. 5897). As a result of that search, it became clear that there are "no credible suppliers of 9 percent nickel steel in the U.S." (Rano, Tr. 5897).

c. Steel fabrication

3.33 Steel fabrication for LNG tanks is a simple process, involving the squaring, beveling, and rolling of manufactured steel plate. (Rano, Tr. 5898). The fabrication process for LNG tanks is the same as that used for other types of tanks, including water tanks, oil storage tanks, and LPG tanks. (Rano, Tr. 5898).

3.34 In most cases, steel plate fabrication occurs near the mill where the steel plate is purchased. (Rano, Tr. 5899). Steel mills generally have a fabrication facility within them or associated with them. (Rano, Tr. 5899). The steel mills in Europe and Japan, which provide nine percent nickel steel, typically provide a fabrication service in which the steel plates are squared, beveled, cut, rolled, and then exported to the job site. (Scorsone, Tr. 4891-92)

3.35 PDM EC used three fabrication facilities located in Warren, Pennsylvania, Clive, Iowa, and Provo, Utah. (Scorsone, Tr. 4892). CB&I Industrial utilizes fabrication shops in Houston, Texas and Provo, Utah. (Scorsone, Tr. 4893). The water division uses the fabrication shops in Clive, Iowa and Warren, Pennsylvania, however, CB&I Industrial uses those shops for storage tanks when it is geographically convenient. (Scorsone, Tr. 4893).

3.36 The nine percent nickel steel procured for the Cove Point LNG project and Puerto Rico LNG project was fabricated in Europe and shipped to the job site. (Scorsone, Tr. 4893-94). Although CB&I had the capability and the capacity to fabricate the steel for the Cove Point project at one of its fabrication facilities, it chose to have it fabricated overseas because it was "less expensive." (Scorsone, Tr. 4894-95; *see also* Glenn, Tr. 4118-19). Similarly, for the Bonny Island, Nigeria LNG project, CB&I fabricated the steel in Japan, where it was purchased. (Rano, Tr. 5898-99).

d. Transporting equipment

3.37 After fabrication is completed, the next step in constructing an LNG tank is to bring all of the equipment to the jobsite. (Rano, Tr. 5900-01). The length of time associated with this task depends on the remoteness of the jobsite. (Rano, Tr. 5900-01). For a remote location, such as Nigeria, it can take 4-5 months to bring all of the relevant equipment to a jobsite. (Rano, Tr. 5900). In places such as the U.S. or Australia, where equipment rental and spare parts are widely available, this task is easier. (Rano, Tr. 5901).

3.38 CB&I owns approximately 90% of its equipment, however, it typically rents large cranes. (Scorsone, Tr. 4897). CB&I carries the cost of owning equipment whether or not it uses it. (Scorsone, Tr. 4897). The PDM EC Division shared tools, equipment, and fabrication facilities with PDM's Water Division. (Scorsone, Tr. 4779).

e. Labor force

3.39 The next step in the construction of an LNG facility is to assemble a labor force. (Rano, Tr. 5905). CB&I's strategy in the U.S. is the same as it is elsewhere in the world: CB&I recruits local labor, workers who live less than 100 miles from the jobsite, to construct the facility. (Rano, Tr. 5906-07). CB&I will use a small, core team of 4-5 management employees, including a project manager and two or three key people to begin the project.

(Rano, Tr. 5917-18, 5952-53). The bulk of the labor force, however, will be locally recruited. (Rano, Tr. 5917-18, 5952-53).

3.40 CB&I

3.45 CB&I has never self-performed the construction of concrete walls for field-erected LNG tanks; it has always subcontracted this function to "competent concrete people." (Rano, Tr. 5923). The concrete subcontract on a full containment, field-erected LNG tank is "significant," and can amount to 40% of the value of the work. (Rano, Tr. 5923). With respect to full containment tanks to be built in the U.S., CB&I has determined that it will subcontract the concrete work for these jobs. (Rano, Tr. 5923-24).

g. Field erection

3.46 The field erection process for an industrial tank involves erecting the structure in accordance with the plans and contract specifications, and testing the work quality. (Scorsone, Tr. 4895-96). The construction of both flat-bottom and LNG tanks involves rigging, which is the practice of attaching cables, slings, and ropes to pieces and hoisting them into position. (Scorsone, Tr. 4897-98). The rigging "skill sets are identical" for both flat-bottom and LNG tanks. (Scorsone, Tr. 4898).

3.47 During the construction process, the steel roof is constructed and air-raised using air propulsion. (Rano, Tr. 5925). After the roof is raised, construction of the nine percent nickel steel liner and inner tank begins. (Rano, Tr. 5927-28). This construction involves three main tasks: steel erection, welding, and quality control. (Rano, Tr. 5929-30). This process does not differ depending on the location of the tank. (Rano, Tr. 5930).

3.48 In order to weld a field-erected LNG tank, two different welding processes are used: (1) hand welding, in which the welder holds the welding cable in his hand; and (2) submerged arc welding, which involves the use of a welding machine. (Rano, Tr. 5930-31). These welding processes are not only used for LNG tanks, but also for LPG tanks, water tanks, and oil tanks. (Rano, Tr. 5931).

3.49 All welders that work on a field-erected LNG tank for CB&I or anyone else in the industry must be certified in accordance with ASME Section 9 -- the international code that governs certification of welders. (Rano, Tr. 5931-32). In addition, customers and owners often require CB&I to re-certify and re-qualify welders for a particular job. (Rano, Tr. 5932).

3.50 CB&I does not always use welders who have already been certified by any authority. (Rano, Tr. 5933). In many cases, CB&I will train local workers with some aptitude for welding. (Rano, Tr. 5932-33). Prior experience with welding nine percent nickel steel is not a prerequisite for working on an LNG tank. (*See e.g.*, Rano, Tr. 6031-32). Workers with some welding experience can be trained and qualified to weld nine percent nickel steel in 1-2 weeks, while workers with no prior welding experience can be trained in 2-3 weeks. (Rano, Tr. 5947-48).

3.51 The other types of work needed to construct the steel portion of an LNG tank -- steel erection and non-destructive examination/quality control -- are identical to tasks that are done for every cylindrical tank. (Rano, Tr. 5945). In many cases, the workers necessary to perform these tasks cannot be found -- they are trained. (Rano, Tr. 5945).

5. Market Characteristics

a. The lng market is a global market

3.52 The

an "international business" in which "no one participant controls the market." (Bryngelson, Tr. 6160).

b. Few tanks have been built in the United States

3.53 Demand for LNG in the United States has been very small over the past 20 to 30 years. (Glenn, Tr. 4091; Carling, Tr. 4513; J. Kelly, Tr. 6263). The U.S. has been the least active market for the sale of LNG tanks worldwide. (Scorsone, Tr. 4859). Most of the LNG

a. Skanska/Whessoe is a qualified and economically viable competitor to construct LNG

3.60 Skanska/Whessoe offers a combination of skills for the LNG and associated markets that "few can rival." (RX 870, at 6/138). Skanska/Whessoe combines the engineering and construction skills of Skanska Construction with the design, engineering and procurement skill of Whessoe International Skanska. (RX 870, at 6/138). The result is a single

build LNG tanks in the Western Hemisphere. (Eyermann, Tr. 6992; RX 935, at CHE0357) (state of mind). Based on this document, Eyermann believes that Black & Veatch and Whessoe are "serious and trying to compete." (Eyermann, Tr. 6992; RX 935, at CHE0357) (state of mind).

iii. Cryocrete

3.66 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 688, 691). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 736). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 688-89). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 688). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 688).

3.67 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4700). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Glenn, Tr. 4221) (state of mind).

iv. Skanska/Whessoe has entered the U.S. LNG market

3.68 Skanska/Whessoe endeavored, and interviewed with Dynegy, to become the EPC contractor for the Hackberry facility. (Puckett, Tr. 4547). Skanska/Whessoe was ultimately successful as Dynegy awarded it the EPC contract (Puckett Tr. 4547).

Dynegy decided to bid the LNG tank portion of the project separately and Skanska/Whessoe submitted a bid to win this portion of the project as well. (Puckett, Tr. 4543-44, 4556). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4760). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]**

the United States. (Eyermann, Tr. 6981-82). Freeport LNG knows that Skanska/Whessoe has built LNG tanks in Dabhol, India, Trinidad, and Greece, and that Whessoe did a "very good" job on the Dabhol project. (Eyermann, Tr. 6980-81).

3.73 A Skanska/Whessoe sales representative told Nigel Carling that Skanska/Whessoe is "keen to enter the [United States] market." (Carling, Tr. 4483).

v. United States customers and LNG participants have accepted Skanska/Whessoe

3.74 Dynegy chose Skanska as its EPC contractor based on a negotiation to convert FEED costs into a lump-sum turnkey price, Skanska's experience in Dahl, India, and Skanska's ability to execute the project in the United States on Dynegy's schedule. (Puckett, Tr. 4548-49). Dynegy investigated Skanska's performance on the Dabhol, India project and heard that Skanska was performing in a satisfactory manner. (Puckett, Tr. 4565).

3.75 Dynegy is also satisfied that Skanska/Whessoe has the necessary reputation, the ability to do the requisite fabrication and field erection and the ability to manage the actual construction of the LNG tanks for the Hackberry facility. (Puckett, Tr. 4557-58). Dynegy is also satisfied that Skanska/Whessoe will be capable of meeting the necessary United States codes and standards. (Puckett, Tr. 4551). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XX]** (Jolly, Tr. 4691).

3.76 In the preliminary engineering report CHI's submitted to Yankee Gas for the Waterbury facility, CHI specifically proposed a double containment tank, with a concrete roof, in which both the inner tank and outer tank would be made of concrete. (Andrukiewicz, Tr. 6464-65). The concrete double containment tank cited in CHI's report was specifically related to the Skanska/Whessoe proposal. (Andrukiewicz, Tr. 6447).

3.77 CMS Energy believes that Whessoe is qualified to construct LNG tanks in the United States. (J. Kelly Tr. 6261). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (J. Kelly, Tr. 6291-92) (in camera). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (J. Kelly, Tr. 6291-92.)

3.78 British Petroleum would include Whessoe on a potential bidder list for LNG projects in the United States. (Sawchuck, Tr. 6062). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Sawchuck, Tr. 6092). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Sawchuck, Tr. 6088).

3.79 Calpine would be comfortable hiring Skanska to construct an LNG tank in the United States because Calpine considers Skanska one of the top two construction builders in the America. (Izzo, Tr. 6505). Calpine has no doubt that Skanska/Whessoe can build LNG tanks. (Izzo, Tr. 6498). Calpine considers Skanska to be an extremely qualified, large contractor. (Izzo, Tr. 6498). Based on his experience with Whessoe while at Enron, Izzo believes Skanska/Whessoe can construct an LNG tank in the United States to API standards. (IzX X Tr. 6505)0 BasIn Dabhol,essoe whilno e hiLNGstache UniIndiconstrctor. ,Tj -2535 0

3.80 Freeport LNG knows that Skanska is a "very big" construction company. (Eyermann, Tr. 6980). Freeport LNG believes that Whessoe is "serious and trying to compete." (Eyermann, Tr. 6992). Freeport LNG believes that Skanska/Whessoe is a potential supplier of LNG tanks and plans to solicit a bid from Skanska/Whessoe for the Freeport LNG project. (Eyermann, Tr. 6993). Freeport LNG plans to solicit a bid from Skanska/Whessoe for its Freeport LNG facility. (Eyermann, Tr. 6993).

3.81 Freeport LNG is not concerned that Skanska/Whessoe has not previously built an LNG tank in the United States. (Eyermann, Tr. 6993-94). If Whessoe can build an LNG tank in India with Indian labor or in Trinidad with Trinidadian labor, "they should be able to do that in America with local labor." (Eyermann, Tr. 6994).

3.82 Bechtel also believes Whessoe is able to competitively pursue LNG jobs in the United States. (Rapp, Tr. 1326-27). Bechtel acknowledges that Whessoe is a tank builder with experience constructing LNG tanks internationally. (Rapp, Tr. 1316). Bechtel is "satisfied" that the tanks Whessoe built in Trinidad are "well-constructed." (Rapp, Tr. 1333).

3.83 El Paso believes it would pre-qualify Skanska to build LNG tanks in the United States. (Bryngelson, Tr. 6131-32). El Paso already pre-qualified Skanska for its Altamira project. (Bryngelson, Tr. 6125-26). El Paso believes Skanska has sufficient financial stability to satisfy its requirements. (Bryngelson, Tr. 6128). Based on input received from its consultant KBR, El Paso believes that Skanska has a good reputation for building LNG tanks. (Bryngelson, Tr. 6130). El Paso believes that Skanska is capable of building LNG tanks in the United States at a competitive price. (Bryngelson, Tr. 6132).

3.84 Enron saw Skanska as a very large international engineering and construction company with operations in the U.S., and one of the larger contractors for steel structures in the U.S. (Carling, Tr. 4466). A former Enron employee with extensive experience in the LNG industry considers Whessoe as "very interested" and "increasingly enthusiastic" about competing in the United States market. (Carling, Tr. 4514). Carling would pre-qualify Skanska to obtain competitive bids for an LNG project in the United States. (Carling, Tr. 4485-86). In fact, Enron solicited a bid from Skanska/Whessoe for its Bahamas project based on Skanska's "significant financial strength" and "logistical expertise". (Carling, Tr. 4481). Carling considers Skanska/Whessoe to be a competitor for LNG facilities in the United States because it is actively pursuing work in America. (Carling, Tr. 4482). Skanska wanted to be on the bidders list for several LNG opportunities in the United States. (Carling, Tr. 4482-83). Carling would consider hiring Skanska/Whessoe for an LNG project in the United States. (Carling, Tr. 4485).

3.85 Clay Hall of Memphis, Light, Gas and Water believes that as of 1994 or 1995 Whessoe had significant international experience in building field-erected LNG tanks and that it had the capability to engineer an LNG tank. (Hall, Tr. 1805, 1845).

3.86 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim Tr. 750).

vi. Whessoe demonstrated its ability to work in a foreign country when it constructed LNG tanks in Dabhol, India

3.87 Enron selected Whessoe to construct three LNG tanks in Dabhol, India. (Carling, Tr. 4455; Izzo, Tr. 6483). The Dabhol facility consisted of a power plant and an import facility. (Izzo, Tr. 6478). Enron used a competitive bid process to select the EPC contractor for the LNG import terminal. (Izzo, Tr. 6483). Enron solicited and received

competent in controlling the local labor force. (Carling, Tr. 4459-60). The Dabhol job was more difficult to construct than the double containment tank built by PDM in Penuelas, Puerto Rico. The increased difficulty lay in the remotenes of the Indian facility and the quality of the labor force. (Carling, Tr. 4473-74).

3.92 Whessoe/Kvaerner successfully constructed LNG tanks for Enron in Dabhol, India. (Izzo, Tr. 6488). Kvaerner and Whessoe finished the Dabhol project successfully and completed the first LNG tank in 28 months, "probably a record for a tank of that size." (Izzo, Tr. 6487). By the end of the project, Enron was satisfied with the schedule, completion and quality of the Dabhol job. (Izzo, Tr. 6487).

vii. LNG Competitors and CB&I perceive Skanska/Whessoe as a capable U.S. competitor

3.93 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX] XXXXX XXXXX XXXXX**

involved in the development of the Hackberry, Louisiana LNG import terminal for Dynegy. (Scorsone, Tr. 4863).

3.96 Skanska's acquisition of Whessoe created a "formidable pair" in the LNG industry. (Scorsone, Tr. 4864). Scorsone has a high regard for Skanska/Whessoe as a competitor. (Scorsone, Tr. 4864).

and safety. (RX 872, at 5/14; RX 186, at TWC 000084). TKK's annual sales are approximately 34.9 billion Yen. (RX 872, at 2/14).

3.100 TKK is based in Japan but works on a world-wide basis. (*See e.g.*, RX 772, at 6-11/50). TKK has completed over 200 low temperature tanks throughout the world, including 72 LNG storage tanks. (RX 772, at 2-21/50; RX 818). TKK has built LNG tanks in Malaysia, Brunei, Oman, Nigeria, Australia, Indonesia, Algeria, and Korea. (RX 772, at 2-21/50). TKK has also built low temperature tanks in Qatar, Saudi Arabia, Greece, Iran, Iraq, Libya, Taiwan, and Japan. (RX 772, pp. 2-21).

3.101 TKK is the "world's leader" in constructing double containment and full containment LNG tanks. (Cutts, Tr. 2572-73). TKK has build more double containment and full containment LNG tanks than any other constructor in the world. (Cutts, Tr. 2572-73).

3.102 American Tank & Vessel, Inc. ("AT&V") is an engineering and construction firm that was incorporated in 1982. (RX 818). AT&V, based in Mobile, Alabama, offers complete turnkey services for, and has extensive experience in, the engineering, design, and fabrication of tanks, vessels and spheres. (RX 31, at 9/70; Carling, Tr. 4489).

3.103 AT&V has engineering facilities in Birmingham, Alabama, Houston, Texas, George County, Mississippi, and Mobile, Alabama. (RX 31, at 1/70). AT&V also has fabrication facilities in George County, Mississippi and Houston, Texas. (RX 31, at 1/70). The Mississippi fabrication facility contains five sets of plate rolls and three presses. (RX 31, at 2/70). AT&V's field erection equipment consists of automatic welding equipment, cranes, air compressors, and generators. (RX 31, at 3/70).

3.104 In addition to the U.S., AT&V maintains global operations of service and support in Mexico, Argentina, Brazil, Ecuador, Trinidad, Philippines, Indonesia, and Thailand. (RX

31, at 19/70). AT&V has worked on "hundreds and hundreds" of projects overseas. (Cutts, Tr. 2476-77). AT&V has brought over foreign employees from Indonesia, Japan, Venezuela and Argentina to the U.S. to witness the construction of projects several times in the past five years. (Cutts, Tr. 2477-78). TKK/AT&V have established partnerships with two companies located in Trinidad and one firm in Chile for field-erected tanks. (Cutts, Tr. 2481).

3.105 In November 2001, AT&V entered into an agreement with TKK to jointly supply all types of large-scale LNG storage tanks to the U.S. market. (RX 250; Cutts, Tr. 2437-38; RX 818 (state of mind)). As part of this joint venture, TKK will carry the lead responsibility for performing the engineering and design work for LNG tanks. (Cutts, Tr. 2327). AT&V will be responsible for providing the field labor and field erection for LNG tanks in North America. (Cutts, Tr. 2328). Additionally, TKK and AT&V have "developed an understanding and general relationship" to also jointly pursue projects outside of North America. (Cutts, Tr. 2444).

3.106 AT&V chose TKK as its partner because of TKK's track record in the LNG industry and other tank structures. (Cutts, Tr. 2462). AT&V entered into the relationship with TKK to obtain the "complete package of technology" for building LNG projects in the U.S. (Cutts, Tr. 2463-64). TKK will provide engineering expertise, management expertise, and welding technology to the TKK/AT&V partnership. (Cutts, Tr. 2376-77).

3.107 Part of AT&V's goal in building a relationship with TKK for LNG projects is to provide stability: "stability requires you to sometimes do things at break even or modest profitability or almost none at all . . . ." (Cutts, Tr. 2461). AT&V is also aware of TKK's ability to obtain better bonding capacity. (Cutts, Tr. 2556-57). Customers have felt

satisfied that TKK is of sufficient size to be able to provide a financial guarantee for an LNG project. (Cutts, Tr. 2557-58).

3.108 AT&V is capable, by itself, of building double-wall steel LNG tanks. (Cutts, Tr. 2439). Prior to entering into the joint venture with TKK, AT&V solicited work from customers for LNG tanks. (Cutts, Tr. 2438). Employees of AT&V have experience building LNG tanks in the U.S. (Cutts, Tr. 2463). AT&V believes that its existing fabrication facilities are sufficient to pursue and fabricate LNG tanks in the U.S. market. (Cutts, Tr. 2457). AT&V has undertaken steps to research, design, and develop steps associated with scheduling, welding technology, and general construction sequencing for LNG tanks. (Cutts, Tr. 2440). AT&V has researched and developed techniques to weld nine percent nickel steel. (Cutts, Tr. 2464).

ii. TKK/AT&V has entered the U.S. LNG market

3.109 AT&V has expended capital on the TKK/AT&V joint venture for estimating, drafting, design, coordinating, and bidding. (Cutts, Tr. 2341-42). Personnel from TKK have come to AT&V's offices to train employees. (Cutts, Tr. 2441). TKK has trained employees of AT&V for LNG tanks on estimating, scheduling, construction techniques, welding, operation of welding equipment, and coordinating. (Cutts, Tr. 2324-25). TKK and AT&V will bear its own costs for the training of employees. (Cutts, Tr. 2443).

3.110 TKK has also trained an AT&V project manager on scheduling, and has plans to train field employees and fabrication shop employees of AT&V. (Cutts, Tr. 2325-26, 2442). TKK personnel have spent between 40 and 250 hours training with AT&V's estimators. (Cutts, Tr. 2441).

3.111 TKK has provided information to AT&V to assist it in the development of technical specifications for LNG tanks. (Cutts, Tr. 2564-65) TKK will be sharing welding technology with AT&V, and plans to train AT&V's welders on nine percent nickel steel. (Cutts, Tr. 2442, 2565-66).

3.112 AT&V has independently taken steps to provide LNG construction services to customers in the U.S. by marketing, researching, staffing, bidding and by procuring equipment. (Cutts, Tr. 2437). AT&V's marketing steps include publicizing its capabilities, calling on customers, and educating its sales force. (Cutts, Tr. 2439). AT&V emphasizes its relationship with TKK with respect to its marketing effort for large scale LNG tanks in the U.S. (Cutts, Tr. 2439). AT&V has created formal marketing materials that allude to TKK as its partner. (Cutts, Tr. 2439-40).

3.113 TKK's sales force will supplement AT&V's sales force in the LNG area. (Cutts, Tr. 2569-70). While AT&V and TKK jointly made sales calls to customers, TKK does its own sales and marketing in the U.S. as well. (Cutts, Tr. 2440). AT&V, with Dywidag and TKK, recently approached Linde to form an alliance to build import terminals and peak-shaving plants. (Kistenmacher, Tr. 902-03, 915).

3.114 AT&V/TKK have bid on three LNG projects for three separate customers during the past year. (Cutts, Tr. 2464-65). TKK/AT&V has also submitted budget pricing for three LNG projects. (Cutts, Tr. 2447). For a given project that TKK/AT&V work on, each company places a profit on the job, and neither company discloses to the other what their profits will be. (Cutts, Tr. 2482-84).

3.115 Around February 1, 2002, TKK/AT&V submitted a bid proposal to Dynegy for the construction of three LNG tanks. (Puckett, Tr. 4556; Cutts, Tr. 2468-69). Both TKK and

AT&V assisted in preparing the bid proposal. (Cutts, Tr. 2470). TKK/AT&V's bid met Dynegy's technical expectations and was within Dynegy's expected price range. (Puckett, Tr. 4557). Dynegy is "entirely comfortable with ATV and TKK and their ability to execute" the contract for Dynegy. (Price, Tr. 639-40).

3.116 TKK/AT&V have a comprehensive plan for executing the Dynegy job through its own work and the extensive use of subcontractors. For example, if TKK/AT&V win the Hackberry LNG project, it will subcontract the concrete work to Dywidag. (Cutts, Tr. 2471-72). Dywidag, a German company partnered with TKK/AT&V, is responsible for performing civil engineering and civil construction coordination. (Cutts. Tr. 2358-59, 2472-73, 2484-85). Dywidag will also implement the engineering and design that TKK submits for the project. (Cutts, Tr. 2484-85).

3.117 AT&V, TKK, and Dywidag have had discussions in an attempt to lower their bid price by reducing their costs. (Cutts, Tr. 2488).

3.118 AT&V does not expect that Japanese laborers will participate in the erection of the Hackberry LNG tanks. (Cutts, Tr. 2472-73). AT&V personnel and the subcontractors will be responsible for tank erection while four to eight Japanese employees will travel to the United States to supervise. (Cutts, Tr. 2472-73). A lot of the engineering will be done by TKK, in Japan, and electronically transmitted to AT&V for review. (Cutts, Tr. 2473).

3.119 AT&V predicts that the joint venture will purchase components from both Japan and the United States. (Cutts, Tr. 2473-74). The joint venture will purchase components from the country offering the best price, schedule, quality, and process. (Cutts, Tr. 2473-74). Heavy nine percent nickel steel will be purchased from Japan. (Cutts, Tr. 2474-75).

TKK/AT&V plan on fabricating components in the country from which they are purchased. (Cutts, Tr. 2473-74). Thus, a component purchased in Japan will be fabricated in Japan and a component purchased in the United States will be fabricated in the United States. (Cutts, Tr. 2473-75).

3.120 TKK has also provided a comprehensive budget quotation package to Halliburton KBR in connection with Williams plans to expand its existing Cove Point LNG facility in Cove Point, Maryland. (*See* RX 185). This budget pricing package contains engineering designs, pricing, estimates and detailed technical drawings and reports. (*See* RX 185). To execute this project, TKK has formed a consortium with Dywidag. (RX 185, at TWC 000035). TKK will be responsible for the project management, engineering, procurement, and construction of the tanks. (RX 185, at TWC 000035). Dywidag will be responsible for the civil des

work on the Hackberry LNG tanks and will be able to manage the actual construction of the LNG tanks for the Hackberry facility. (Puckett, Tr. 4557-58). Dynegy was "quite comfortable about the capability of teaming TKK with AT&V and the ability to execute a project here in the States." (Puckett, Tr. 4584-85).

3.124 CMS believes that TKK is qualified to build LNG tanks in the U.S. (J. Kelly, Tr. 6262).

3.125 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** [**XXXXX XXXXX**]

3.126 El Paso would pre-qualify TKK for a U.S. based LNG project. (Bryngelson, Tr. 6131-32). El Paso believes that TKK has sufficient financial stability, and is technically capable to build LNG tanks. (Bryngelson, Tr. 6128). El Paso pre-qualified TKK for LNG projects in Altamira, Mexico and Rosarito, Mexico. (Bryngelson, Tr. 6125-26).

3.127 Nigel Carling, a former Enron employee with substantial experience in the LNG industry, would pre-qualify TKK/AT&V for a U.S. LNG project. (Carling, Tr. 4447-48, 4485-86, 4489). Carling believes that TKK's prices for LNG tanks in the U.S. will be competitive to the level of PDM's prices. (Carling, Tr. 4519). Since TKK has a proven track record of entering into alliances with local contractors in countries such as Egypt, Indonesia, and Ras Laffan, Carling believes that TKK will be successful working in the U.S. (Carling, Tr. 4522-23). Mr. Carling is aware that AT&V employs many ex-CB&I workers. (Carling, Tr. 4489).

3.128 Bechtel would consider pre-qualifying TKK for an LNG project in the U.S. (Rapp, Tr. 1326). Bechtel acknowledges TKK as having international LNG experience. (Rapp, Tr. 1326).

3.129 Calpine would put TKK/AT&V on its EPC bid list for a proposed LNG tank project in Humboldt Bay, California. (Izzo, Tr. 6494-95). Calpine believes that TKK/AT&V has the experience and the balance sheet necessary to construct a large LNG project. (Izzo, Tr. 6495). Calpine further believes that AT&V is a competent cryogenic tank contractor that could compete on an LNG tank project alone, if TKK guaranteed it. (Izzo, Tr. 6499, 6536).

3.130 Freeport LNG received a variety of documents from TKK/AT&V, and met with its representatives regarding the Freeport LNG project. (Eyermann, Tr. 7002-04). Freeport LNG believes that TKK/AT&V is a strong competitor for U.S. LNG projects. (Eyermann, Tr. 7004-05). Freeport LNG perceives that AT&V has quality welders which will be sufficient to perform the proposed LNG project in Freeport, Texas. (Eyermann, Tr. 7001-02). Freeport LNG also believes that TKK is a qualified tank constructor with the ability to adapt to different working conditions in different countries. (Eyermann, Tr. 7000, 7004-05). Freeport LNG plans on soliciting bids from TKK/AT&V, even though the partnership has never constructed a field erected LNG tank in the U.S. (Eyermann, Tr. 7005).

3.131 S&B Engineers and Constructors approached TKK/AT&V in the past year to solicit their services for LNG projects. (Cutts, Tr. 2450-51).

3.132 MLGW permitted TKK to bid on an LNG project in 1994 because it believed TKK was capable of building field-erected LNG tanks in the United States. (Hall, Tr. 1805, 1849-50). MLGW would consider soliciting a bid from TKK/AT&V if and when it requires an additional LNG facility. (Hall, Tr. 1854).

3.133 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXX] XXXXX XXXXX**.

iv. LNG competitors and CB&I

3.140 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Glenn, Tr. 4221). Based on CB&I's loss to TKK/AT&V for an LNG tank in Trinidad, CB&I perceives that the partnership will be a tough competitor to CB&I in the U.S. (Scorsone, Tr. 4866, 4874-75).

c. Technigaz/Zachry is a qualified and economically viable competitor to construct lng tanks in the United States.

i. Technigaz background

3.141 From its establishment in 1964, French based SN Technigaz has handled the conceptual design, engineering and construction of LNG facilities. (RX 773, at 2/40). In 1984, Technigaz became a subsidiary of Bouygues, a leading construction group worldwide. (RX 773, at 2/40). Bouygues is the fourth largest contractor in the world with 2001 revenue of more almost $13 billion. (RX 736, at 2/17). Bouygues is highly-skilled in the implementation and management of large-scale international projects and in the vanguard of construction and civil works technologies. (RX 773, at 2/40).

3.142 The Bouygues Group provided Technigaz with its knowledge of giant concrete

Technigaz is one of the world's leading suppliers of liquefied gas facilities. (RX 871, at 6/78). Technigaz has a solid reputation with both customers and partners. (RX 871, at 6/78).

3.145 Technigaz offers a broad range of services including: feasibility studies and conceptual design, basic and detail engineering, project management, procurement, quality control, construction, coordination of subcontractors, supervision and technical assistance, commissioning and start-up, and operation. (RX 773, at 3/40).

3.146 Technigaz has the ability to undertake large-scale turnkey projects and is in a position to carry out a project right through from front-end engineering to delivery. (RX 773, at 3/40). Technigaz is one of the few companies in the world capable of carrying out the design and construction of complete liquefied gas terminals. (RX 773, at 3/40).

3.147 Technigaz's capabilities also cover all aspects of the design and construction of LNG peak-shaving facilities. (RX 773, at 4/40). Technigaz supplies the associated liquefaction units and send-out systems for peak-shaving facilities. (RX 773, at 4/40). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4732-33).

3.148 Technigaz primarily works on two types of LNG tanks, both of which utilize concrete outer tank: membrane tanks and full containment tanks with nine percent nickel inner tanks. (Jolly, Tr. 4439). In designing and building full-containment type storage tanks, Technigaz draws on its skills in post-tension concrete and its experience with steel tanks. (RX 773, at 5/40). Technigaz's **[XXXXX XXXX]** membrane technology relies on a post-tensioned concrete outer tank for structural resistance and a stainless steel corrugated membrane for liquid and gas tightness. (Jolly, Tr. 4730-31; RX 773, at 5/40).

3.149 Therefore, if an owner specifies a concrete-and-steel design, Technigaz can propose either a membrane or full containment concept, both being equivalent regarding safety towards internal or external hazards. (RX 773, at 5/40). Technigaz has experience working on double containment concrete tanks as well. (Jolly, Tr. 4439). Technigaz has specific concrete experience and built the world's largest concrete LNG tanks. (Jolly, Tr. 4439; RX 773, at 7/40).

3.150 Technigaz currently has eight full-containment LNG tanks under construction around the world: Spain, Egypt and India. (Jolly, Tr. 4440). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4732). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4732). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4732). Technigaz has already constructed three full-containment LNG tanks in Qatar. (Jolly, Tr. 4439-440).

3.151 Taking into account the eight LNG currently under construction, Technigaz believes it, in the last ten years, has built more full containment LNG tanks than any other company in the world. (Jolly, Tr. 4440). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4689).

3.152 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4725). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4747).

3.153 Technigaz pursues an active partnership policy, which has for many years enabled it to develop cooperation with industrial partners in various countries. (RX 773, at 7/40). For example, Technigaz has partnered with local construction companies to build facilities in

Spain (with Initec), Qatar (with Midmac), and Greece (with Technical Union). (RX 773, at 13-15/40).

3.154 Technigaz has built an LNG tank to Appendix Q design codes and specifications. (Fahel, Tr. 1410). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4721).

ii. Zachry background

3.155 Founded in 1924, Texas-based Zachry Construction Corporation is a leading United States construction company, with sales of around $1.7 billion and more than 14,000 employees in 2001. (RX 43, at ZC 000002). In 2001, Zachry was ranked eighteenth in the annual ranking of top construction contractors by Engineering News-Record, a leading industry publication. (RX 871, at 71/78). Zachry placed fifteenth overall among

XXXXX XXXXX XXXXX XXXXX XXX] (Fahel, Tr. 1680-81). Zachry has expertise in concrete construction and concrete walls. (Fahel, Tr. 1405).

3.159 Zachry has unlimited bonding capacity. (RX 45, at ZCC 000039). Zachry's satisfied customers include British Petroleum Chemicals, Calpine Corporation and Chevron WWTU. (RX 871, at 61/78).

3.160 Zachry is "low-cost driven" and has broad capabilities in the industrial and heavy civil industry. (Scorsone, Tr. 4865). While Zachry has never built an LNG tank before, it has experience in the general contracting and heavy civil industries, which includes concrete placement, logistics management, and direct craft hire. (Scorsone, Tr. 4868). Zachry also understands the various types of cultures of owners with sophisticated projects, based on its experience in a wide range of industrial projects. (Scorsone, Tr. 4868).

3.161 Zachry is an experienced civil contractor in the United States with licensed engineers and access to local labor in the United States. (Price, Tr. 656-57).

iii. Technigaz/Zachry alliance

3.162 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4683). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXX]** (Jolly, Tr. 4729). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXX]** (Jolly, Tr. 4757).

3.163 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX**

XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX] (Jolly, Tr. 4693-94).

3.164 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4694, 4764; *see also, e.g.*, Cutts, Tr. 2501). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XX]** (Jolly, Tr. 4702). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4725). Technigaz decided to create a strategic alliance with Zachry to broaden its competencies and geographic reach. (RX 871, at 46/78). Technigaz consider its alliance with Zachry a "valuable asset" that enables it to leverage opportunities in a high-potential market. (RX 871, at 46/78).

3.165 **[XXXXX XX]** (Fahel, Tr. 1676). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Fahel, Tr. 1676).

3.166 **[XXXXX XXXXX]** (Jolly Tr., 4685). A press release announcing the joint venture was issued in January of 2002. (RX 43, at ZCC000002). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4718). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4685).

3.167 In the press release, the alliance held itself out as pooling Technigaz's recognized turnkey LNG project expertise and broad-based knowledge of the market with Zachry's

XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX] (Jolly, Tr. 4710).

3.172 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4687). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4687).

iv. Technigaz/Zachry has entered the U.S. LNG market

3.173 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4690). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Fahel, Tr. 1684-85). The alliance represented to Dynegy that it, along with its parent companies, was prepared to commit the resources to support the Hackberry project immediately. (RX 45, at ZCC 000059).

3.174 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4692). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Fahel, Tr. 1650-51, 1689) (in camera). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Fahel, Tr. 1652). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Fahel, Tr. 1656). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Fahel, Tr. 1657).

3.175 Technigaz/Zachry approached Freeport LNG to present its alliance. (Eyermann, Tr. 6994). The alliance sent Freeport LNG marketing materials describing its expertise in

liquefied gas facilities and Technigaz's experience building LNG tanks. (Eyermann, Tr. 6996-98). In these marketing materials, Technigaz/Zachry held itself out being committed to engage in all types of undertakings to provide its expertise and long standing excellent reputation as designers/constructors of LNG terminal facilities. (RX 934, at CHE 0310) (state of mind evidence). The alliance emphasized that Technigaz is currently constructing large terminal facilities in Spain, India and other locations. (RX 934, at CHE 0310) (state of mind evidence). Based on these representations, Freeport LNG believes that Technigaz is "keenly interested" in working on the Freeport LNG project. (Eyermann, Tr. 6996-98). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]**

3.178 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]**. (Jolly, Tr. 4764-65).

v. United States customers and LNG Participants have accepted Technigaz/Zachry

3.179 Dynegy has made it clear that it is satisfied that Technigaz/Zachry has the necessary reputation, the ability to do the requisite fabrication and field erection and the ability to manage the actual construction of the LNG tanks for the Hackberry facility. (Puckett, Tr. 4557-58). Dynegy is also satisfied that Technigaz will be capable of meeting the necessary United States codes and standards. (Puckett, Tr. 4551).

3.180 El Paso believes it would pre-qualify Technigaz to build LNG tanks in the United States. (Bryngelson, Tr. 6131-32). El Paso already pre-qualified Technigaz for its Altamira and Rosarito projects. (Bryngelson, Tr. 6125-26). El Paso believes Technigaz has sufficient financial stability to satisfy its requirements. (Bryngelson, Tr. 6128). Based on input received from its consultant KBR, El Paso believes that Technigaz has a good reputation for building LNG tanks. (Bryngelson, Tr. 6130). El Paso believes that Technigaz is capable of building LNG tanks in the United States at a competitive price. (Bryngelson, Tr. 6132).

3.181 Calpine considers Zachry a competent American contractor capable of teaming with an LNG design company to build LNG tanks. (Izzo, Tr. 6499). Calpine is "perfectly comfortable" with Zachry building an LNG tank based on its familiarity with Zachry's skill sets. (Izzo, Tr. 6505). Calpine has used Zachry extensively to build power plants; Zachry is one of its five "go-to" contractors. (Izzo, Tr. 6496). Zachry has built half a dozen or more power plants for Calpine. (Izzo, Tr. 6499). Calpine believes Zachry has an experienced labor force. (Izzo, Tr. 6505). Calpine believes Technigaz has built LNG

tanks to API standards. (Izzo, Tr. 6501). More importantly, Calpine believes Technigaz will guarantee the standards in its contracts. (Izzo, Tr. 6501).

3.182 Despite the fact that Technigaz/Zachry has never built an LNG facility in the United States, Freeport LNG considers the alliance to be a potential LNG tank supplier for its Freeport LNG project. (Eyermann, Tr. 6998). Freeport LNG plans to solicit a bid from Technigaz/Zachry for the Freeport LNG project. (Eyermann, Tr. 6999).

3.183 British Petroleum accepted Technigaz's bid for an LNG project in Bilboa, Spain. (Sawchuck, Tr. 6053). British Petroleum believes that Technigaz has the technical capabilities to construct and execute an LNG import terminal, and would consider Technigaz as a viable supplier for LNG products in the U.S. (Sawchuck, Tr. 6062-63, 6092).

3.184 Bechtel also considers Zachry to be a reputable company. (Rapp, Tr. 1325). Bechtel regards Zachry's field labor force as "well-trained and experienced." (Rapp, Tr. 1325). Further, Bechtel believes that the Technigaz/Zachry joint venture can effectively compete for LNG jobs in the United States. (Rapp, Tr. 1325).

States with experienced construction practices, labor forces, and pricing structures. (Carling, Tr. 4487). Mr. Carling would feel comfortable having Zachry construct an LNG tank because it is one of the "powerhouse contractors in the United States" and because a tank "is a relatively straightforward exercise when compared with other aspects of construction." (Carling, Tr. 4526). Mr. Carling would consider hiring Technigaz/Zachry for an LNG project in the United States. (Carling, Tr. 4487-88).

3.186 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 745-46).

vi. LNG Competitors and CB&I perceive Technigaz/Zachry as a serious U.S. competitor

3.187 AT&V views Technigaz/Zachry as TKK/AT&V's competitor for LNG projects in the United States. (Cutts, Tr. 2450).

3.188 CB&I has been aware of the Technigaz/Zachry alliance since its announcement. (*See* RX 256) (state of mind evidence). CB&I has also tracked the success and strength of Technigaz's parent company, Bouygues. (*See* RX 271).

3.189 CB&I considers Technigaz to be one of its main competitors in the LNG market. (Glenn, Tr. 4095; RX 234). CB&I competes against Technigaz in the global competitor. (Glenn, Tr. 4093). CB&I recently competed against Technigaz, and lost, a project in Egypt. (Glenn, Tr. 4093).

3.190 Mr. Glenn also considers Technigaz to be a competitor in the domestic market. (Glenn, Tr. 4095). Mr. Glenn knows Zachry to have a lot of experience in the U.S., particularly in concrete construction. (Glenn, Tr. 4095). Mr. Glenn believes Zachry has a very good reputation in the United States as a general contractor with particular expertise in things like highway construction, power plants and concrete placement. (Glenn, Tr. 4097).

3.196 Daewoo is a world leader for the construction of full-containment LNG tanks, and plays a leading role in the construction LNG terminals in Korea. (RX 873, at 3/77). Korea is the world's second largest importer of LNG, and Daewoo holds itself out as the dominant contractor in the design and construction of LNG terminals and gas main trunklines in Korea over the past decade. (RX 10) (state of mind evidence). Since 1990, Daewoo has acted as a turnkey constructor for at least 12 LNG tanks for LNG projects located in Korea and Nigeria. (RX 760, at 10/31, 29/31; RX 873, at 3-6/77). Daewoo has constructed several LNG facilities for Korea Gas Corporation and Shell Petroleum Development Co. (RX 760, at 29/31; RX 873, at 5-6/77).

3.197 S&B Engineers and Constructors, Ltd. ("S&B") is an engineering contracting firm with corporate headquarters located in Houston, Texas. (RX 873, at 61/77). S&B offers a wide range of services including feasibility studies, engineering, procurement, field construction, and plant start-up. (RX 873, at 61/77). S&B has formed alliances with various international companies to perform projects in the Asia-Pacific and India. (RX 873, at 61-63/77). S&B's clients for the design and construction of process plants include Phillips, Shell USA, Arco Chemical, Conoco, and Chevron. (RX 873, at 61/77).

3.198 In mid 2002, Daewoo and S&B represented to the public that it had signed an agreement to jointly pursue LNG receiving terminals in North America. (RX 10) (state of mind evidence). The alliance further represented that S&B, Daewoo, and specialized LNG consultants formed teaming agreements to provide a complete range of services for LNG projects throughout North America, including fast track regulatory and insurance approvals, financial guidance, developmental and detailed engineering, material

procurement, and construction and commissioning services. (RX 10) (state of mind evidence).

3.199 According to the firms, S&B's project execution, construction management skills and knowledge of the U.S. EPC market, along with Daewoo's international experience in LNG technology form a strong competitor in the North American LNG market. (RX 10) (state of mind evidence).

ii. Daewoo/S&B's have entered the U.S. LNG market

3.200 Daewoo approached Dynegy, seeking to be included on Dynegy's bid list for the LNG tanks at the Hackberry, Louisiana LNG facility. (Puckett, Tr. 4553).

3.201 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Sawchuck, Tr. 6078, 6090).

3.202 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 754).

3.203 S&B contacted Freeport LNG and indicated it had combined its efforts with Daewoo to compete in the American market for LNG tanks. (Eyermann, Tr. 6976-77). Representatives from S&B and Daewoo had a meeting with Freeport LNG to discuss its capabilities, experience with current projects, and contracting strategies. (Eyermann, Tr. 6976-77; 7008). S&B and Daewoo also presented various brochures to Freeport LNG. (Eyermann, Tr. 7008). Based on these discussions, Freeport LNG requested Daewoo's LNG tank drawings to be used in connection with Freeport LNG's FERC application for its proposed LNG facility in Freeport, Texas. (Eyermann, Tr. 6976-77).

iii. United States customers and LNG participants have accepted Daewoo/S&B

3.204 Dynegy believes that Daewoo has the requisite experience and capabilities to build the LNG tanks at Dynegy's Hackberry, Louisiana facility. (Puckett, Tr. 4553).

3.205 BP believes that Daewoo has the capabilities and skills to construct LNG tanks in the U.S. (Sawchuck, Tr. 6062). BP would consider accepting a bid from Daewoo for the construction of an LNG tank on one of its proposed projects in the U.S. (Sawchuck, Tr. 6062).

3.206 Freeport LNG considers Daewoo/S&B to be a potential supplier of LNG tanks for the proposed LNG project in Freeport, Texas, and intends on sending them a bid package and a request for a bid. (Eyermann, Tr. 7014). Freeport LNG believes, based on reviewing Daewoo's brochures and technical documents, that Daewoo has experience building LNG tanks outside of Korea, and is considered a pioneer in the LNG industry. (Eyermann, Tr. 7010-11; *See also* RX 940, RX 929, RX 930) (state of mind evidence). Freeport LNG was also satisfied with LNG tank drawings that Daewoo provided to Freeport LNG for its FERC application. (Eyermann, Tr. 6974-75).

3.207 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 753). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 753-54).

3.208 Bechtel believes that S&B is a qualified company that can construct an LNG tank in the U.S. if partnered with an experienced foreign LNG tank company. (Rapp, Tr. 1327).

3.209 El Paso would consider pre-qualifying Daewoo and S&B Engineering for LNG projects in North America. (Bryngelson, Tr. 6145-46).

iv. CB&I

at CB&I

transportation and storage facilities. (RX 767, at 16/26). MHI has been active in the field of cryogenic storage tanks for many decades. (*See* RX 767). MHI is capable of constructing single containment and full-containment tanks. (RX 875, at 2/9). MHI has received orders of 36 large LNG storage tanks including: a full containment LNG tank for Oasaka Gas Co., Ltd. in 2000; the world's largest class membrane LNG tank for Toho Gas Co., Ltd. in 2001; and three full containment tanks at Ras Laffan, 0 Tw Co., Ltd. in

3.221 Former Enron executive Nigel Carling would consider using MHI as an LNG tank contractor for a U.S. project if MHI worked with a domestic partner. (Carling, Tr. 4492). MHI is "one of the big players in Japan" and has built tanks in Ras Laffan, Qatar, Taiwan, and Indonesia. (Carling, Tr. 4492).

3.222 Based on its recent bidding activity for LNG projects in Mexico, CB&I believes that MHI is positioned to compete in the U.S. for LNG tank projects. (Scorsone, Tr. 4849).

iii. IHI

3.223 Ishikawajima-Harima Heavy Industries, Co., Ltd. ("IHI") is rated as the world's leading constructor of LNG receiving terminals. (RX 764, at 6/36). IHI LNG storage tanks are currently operating at all LNG terminals in Japan. (RX 764, at 6/36). IHI is capable of constructing double and full containment LNG tanks. (RX 764, at 22/36).

3.224 British Petroleum would consider soliciting a bid from IHI to construct LNG tanks for its various projects in the United States. (Sawchuck, Tr. 6062). BP believes IHI has the technical capabilities and skills to construct LNG tanks in the United States. (Sawchuck, Tr. 6062-63). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Sawchuck, Tr. 6092).

3.225 Freeport LNG believes that if IHI finds an American partner it will be a potential supplier of LNG tanks in the United States. (Eyermann, Tr. 7017). In October 2002, Freeport LNG was contacted by a representative of IHI; the representative, stationed in New York, sent Freeport LNG marketing materials listing IHI's experience. (Eyermann, Tr. 7015-16; RX 931) (state of mind evidence). Freeport LNG understands IHI to have built 23 LNG terminals in Japan, with each terminal containing between 4 and 6 LNG tanks. (Eyermann, Tr. 7015-16).

3.226 IHI is included on the list of LNG tank contractors El Paso considers for its LNG projects. (Bryngelson, Tr. 6126). Bechtel recognizes IHI as a company with experience constructing LNG tanks on an international scale. (Rapp, Tr. 1309, 1316).

3.227 Based on its recent bidding activity for LNG projects in Mexico, CB&I believes that IHI is positioned to compete in the U.S. for LNG tank projects. (Scorsone, Tr. 4849).

2. EPC Contractor Competition Is Plentiful

Tr. 4938; Price, Tr. 656). Most of CB&I's EPC contractor competitors are significantly larger than CB&I. (*See* RX 736; RX 737).

3.231 Bechtel, with annual revenues of over $11 billion, is the 6th largest international contractor in revenue, and is the number one ranked contractor in the U.S. (RX 736, at 2/17; RX 737, at 1/16). Bechtel employs approximately 50,000 employees worldwide, and is regarded as a world-class engineering construction firm. (Rapp, Tr. 1303-04). Bechtel is currently serving as the EPC contractor for the Trinidad project, and has engineered and constructed LNG facilities in Kenai, Alaska for Phillips; Arun, Indonesia; Badak, Indonesia; and Arzu, Algeria. (Rapp, Tr. 1286, 1310).

3.232 Skanska, with revenues of over $14 billion, is the number one international contractor in terms of revenues. (RX 736, at 1/17). Skanska has domestic operations out of Whitestone, New York, and is considered the third ranked domestic contractor. (RX 737, at 1/16).

3.233 Fluor is a large EPC contractor that has a high-grade reputation across a number of industries including large industrial complexes and petroleum/petrochemical facilities. (Scorsone, Tr. 4942). Fluor Corp. is ranked second among domestic contractors, and 11th among international contractors. (RX 736, at 2/17; RX 737, at 1/16). Fluor earned revenues in excess of $7 billion in 2001. (RX 736, at 2/17).

3.234 Halliburton KBR, the sixth ranked U.S. contractor, is based in Houston, Texas. (RX 737, at 1/16). KBR is rated as the fifth largest international contractor with over $5 billion in revenues. (RX 736, at 2/17). Halliburton KBR is the "leading EPC contractor dealing with owner issues, front-end engineering studies, specifications development, taking the bids, construction terminals." (Scorsone, Tr. 4941).

3.235 Foster Wheeler is headquartered in Clinton, New Jersey, and is the 15th largest domestic contractor. (RX 737, at 2/16). Foster Wheeler has annual revenues of over $2 billion, and is rated as the 16th largest international contractor by revenue. (RX 736, at 2/17).

3.236 Black & Veatch is the 27th largest domestic contractor in the U.S., and the 69th largest international contractor in revenue. (RX 736, at 6/17; RX 737, at 2/16).

3.237 CB&I, however, is only the 41st largest contractor in the U.S., and the 53rd largest international contractor. (RX 736, at 6/17; RX 737, at 2/16).

3.238 CB&I offered to become the EPC contractor for an LNG import terminal to be built in Baja, California by Marathon. (Scorsone, Tr. 4939). However, Marathon rejected CB&I's offer because it felt that CB&I was not large enough to "tackle such a job." (Scorsone, Tr. 4939).

3.239 CB&I also competed, but was not successful, to become the EPC contractor for the expansion of the Cove Point LNG terminal. (Scorsone, Tr. 4937). Marlboro Enterprises was the successful EPC contractor for this project. (Scorsone, Tr. 4937-38).

3.240 CB&I does not perceive that it can force an owner to select CB&I for the EPC position of an LNG terminal by refusing to bid the tank portion of the work out competitively. (Scorsone, Tr. 4938). After a six week, world-wide, search, Dynegy ultimately selected Skanska/Whessoe as EPC contractor for the Hackberry

3.241 Dynegy identified six contractors that met its guidelines. (Puckett, Tr. 4545-46). The six contractors that made Dynegy's list were Kvaerner, Technip, Skanska, CB&I, Kellogg Brown & Root, and Bechtel. (Puckett, Tr. 4546). Dynegy believed these contractors had some level of LNG experience and the ability and capacity to execute the Hackberry project in the required time frame. (Puckett, Tr. 4545).

3.242

these companies has the requisite skills and capabilities to serve as an EPC contractor. (Sawchuck, Tr. 6061).

3.246 Calpine is considering Skanska/Whessoe, Technigaz/Zachry, and TKK/AT&V to be its EPC contractor. (Izzo, Tr. 6494-95). El Paso believes that Halliburton KBR and Fluor have the capability to be an EPC contractor for an LNG facility. (Bryngelson, Tr. 6146).

3. Current LNG Customers Are Not Concerned About CB&I's Acquisition Of PDM Assets Because Of The Presence Of Foreign Competition.

3.247 LNG owners are sophisticated buyers who know what an LNG project ought to cost. (Glenn, Tr. 4125-26).

3.248 Dynegy, the owner of what will be the largest LNG import terminal ever constructed in the United States, is satisfied with the post-merger LNG pricing it has received for the Hackberry project. (Puckett, Tr. 4540, 4587-88).

3.249 Bechtel believes it can obtain a reasonable price for an LNG tank in the United States as a result of a bidding process between CB&I and Technigaz. (Rapp, Tr. 1333-34).

3.250 Calpine does not believe that the PDM acquisition will allow CB&I to raise its prices. (Izzo, Tr. 6534).

3.251 El Paso, which is currently developing four LNG projects in the United States, Bahamas and Mexico, does not believe that the merger has affected the price for field-erected LNG tanks. (Bryngelson, Tr. 6155). Because the LNG industry is "an international business", El Paso believes that "no one participant controls the market." (Bryngelson, Tr. 6159-60). El Paso believes the LNG market is a "very competitive global market" and has not seen CB&I exert dominance with respect to any of El Paso's LNG projects. (Bryngelson, Tr. 6146).

3.252 Freeport LNG, currently developing an LNG import terminal in Freeport, Texas, is comfortable with the options it currently has available for builders of field-erected LNG tanks for its project. (Eyermann, Tr. 6959-60, 7019).

3.253 Nigel Carling, a former Enron employee with extensive experience in the LNG industry, does not believe the acquisition has adversely affected his ability to get a competitively priced LNG tank. (Carling, Tr. 4494). Competition since the acquisition has increased as foreign competitors are now trying to break into the United States market. (Carling, Tr. 4494). Mr. Carling believes there is no reason to believe they cannot be competitive in the United States. (Carling, Tr. 4495). These foreign competitors have excellent credentials and they have been able to put together competitive pricing. (Carling, Tr. 4494). In Mr. Carling's view, increased competition means prices will decrease. (Carling, Tr. 4495).

3.254 Likewise, CMS, which is adding an LNG tank to its existing Lake Charles, Louisiana facility, does not believe it is likely that prices for LNG tanks in the United States will increase as a result of the merger between CB&I and PDM. (J. Kelly, Tr. 6263-64).

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4. Post-Acquisition Competition Demonstrates CB&I

containment tanks. (Puckett, Tr. 4585). Additionally, due to terrorist concerns, more secure tanks are desirable. (Puckett, Tr. 4586-87).

3.261 When completed, the Hackberry LNG tanks will be the first full containment LNG tanks, of this size, built in the United States. (Puckett, Tr. 4541).

3.262 Dynegy estimates that the approximate dollar value for the entire project is somewhere between $550 to $700 million. (Puckett, Tr. 4565). Dynegy estimates that each of the three LNG tanks will cost around $40 or $50 million. (Puckett Tr. 4566).

i. EPC contractor search

3.263 Dynegy began its process by selecting an EPC contractor for the facility. (Puckett, Tr. 4543-44). After a six week, world-wide, search, Dynegy ultimately selected Skanska/Whessoe as EPC contractor for the Hackberry LNG project over CB&I and several other bidders. (Puckett, Tr. 4545, 4547). While conducting the search, Dynegy first reviewed all the contractors it felt had adequate experience and capabilities to do the project. (Puckett, Tr. 4544-45). Along with a contractor's capabilities, Dynegy also considered the size of the projects the contractors had typically constructed. (Puckett, Tr. 4545).

3.264 Dynegy identified six contractors that met its guidelines. (Puckett, Tr. 4545). The six contractors that made Dynegy's list were Kvaerner, Technip, Skanska, CB&I, Kellogg Brown & Root, and Bechtel. (Puckett, Tr. 4546). Dynegy believed these contractors had some level of LNG experience and the ability and capacity to execute the Hackberry project in the required time frame. (Puckett, Tr. 4545).

3.265 Dynegy told all the parties up-front that it planned to bid the LNG tank portion of the project separately. (Puckett, Tr. 4550).

3.266

3.276 Dynegy began the pre-qualification process by identifying companies that had manufactured LNG tanks in the past. (Puckett, Tr. 4552). Dynegy did not limit its search to tank manufacturers in the United states; Dynegy searched world-wide. (Puckett, Tr. 4552).

3.277 Based on its search, Dynegy created a list of four tank manufacturers, TKK, Technigaz, Skanska/Whessoe, and CB&I. (Puckett, Tr. 4552). Technigaz came partnered with Zachry and TKK had a relationship with AT&V. (Puckett, Tr. 4553-54). Dynegy invited each of the four companies to provide its pre-qualifications and come in for a meeting. (Puckett, Tr. 4554). Each firm presented Dynegy with written materials outlining its capabilities to construct the LNG tanks. (Puckett, Tr. 4554). Dynegy interviewed each of the tank builders. (Puckett, Tr. 4554).

3.278 As a result of the interviews and documents, Dynegy was satisfied that each of the four firms could construct the three LNG tanks as part of the Hackberry project. (Puckett, Tr. 4554).

3.279 Dynegy is satisfied that Skanska/Whessoe, Technigaz/Zachry, and TKK/AT&V all have the reputation necessary to construct the Hackberry LNG tanks. (Puckett, Tr. 4557).

3.280 Dynegy believes that Skanska/Whessoe, Technigaz/Zachry, and TKK/AT&V are all capable of doing the necessary fabrication and field erection work on the Hackberry LNG tanks. (Puckett, Tr. 4557-58).

3.281 Dynegy believes that Skanska/Whessoe, Technigaz/Zachry, and TKK/AT&V will all be able to manage the actual construction of the LNG tanks for the Hackberry facility. (Puckett, Tr. 4558).

3.282 Due to Skanska/Whessoe's desire to bid on the LNG tank portion of the project, Dynegy set up a Chinese wall to ensure fairness in the bidding process. (Puckett, Tr. 4554). Prior to soliciting bids, Dynegy explained its Chinese wall to the bidders. (Puckett, Tr. 4575-76). As part of the Chinese wall, all bidders were required to submit their bids directly to Black & Veatch in its Kansas City office. (Puckett, Tr. 4555).

3.283 Dynegy ultimately asked four tank builders, TKK, Technigaz, Skanska/Whessoe, and CB&I, to provide lump-sum turnkey bids for the construction of the Hackberry LNG tanks. (Puckett, Tr. 4552-53). Dynegy sent bid requests in the fourth quarter of 2001. (Puckett, Tr. 4568).

3.284 Although Daewoo was not on Dynegy's original list, Daewoo approached Dynegy just after Dynegy released the specifications to the bidders. (Puckett, Tr. 4553). Daewoo appeared capable of constructing the LNG tanks, but Dynegy chose not to include it in the bidding process because Dynegy did not want too many bidders bidding on the Hackberry project. (Puckett, Tr. 4553).

3.285 Dynegy does not believe in bidding a project to too many companies; Dynegy prefers giving the bidders a chance to believe that they have an opportunity to win the project (Puckett, Tr. 4553).

3.286 All of the bidders indicated a concern about submitting a bid given that Skanska, a competitor, was the EPC contractor. (Puckett, Tr. 4576). CB&I had never encountered a situation where one of the competitors was the EPC contractor taking bids on the tank, and also competing to bid on the tank; CB&I considered this arrangement highly unusual. (Scorsone, Tr. 4948-49).

3.287 Dynegy received bids sometime after February 1, 2002. (Puckett, Tr. 4556). Dynegy received a bid from TKK/AT&V, Skanska/Whessoe, and Technigaz/Zachry. (Puckett, Tr. 4556; Cutts, Tr. 4568-96).

3.288 All three of the bids Dynegy received met its technical expectations and were within Dynegy's expected price range. (Puckett, Tr. 4557). Dynegy's consultants are studying the LNG tank bids it received. (Puckett, Tr. 4557).

3.289 Gerald Glenn perceived Skanska/Whessoe, TKK/AT&V, and Technigaz/Zachry as competitors for the Hackberry LNG tanks. (Glenn, Tr. 4094-95, 4097-98) (state of mind evidence).

3.290 William Puckett believes the Hackberry facility will be built. (Puckett, Tr. 4569).

3.291 TKK and AT&V both played a part in preparing the Dynegy LNG tank bid. (Cutts, Tr. 2470). AT&V projects that its combined margin and contingency for the Dynegy project is approximately ten percent. (Cutts, Tr. 2357).

3.292 If TKK/AT&V win the Hackberry project, it will subcontract the concrete work to Dywidag, a company with foreign and domestic ties headquartered in Germany. (Cutts, Tr. 2471-72, 2358-59). Although TKK will have lead engineering responsibility for the entire project, Dywidag will perform civil engineering and civil construction coordination; Dywidag will implement TKK's engineering and design. (Cutts, Tr. 2484-85).

3.293 TKK will do the engineering in Japan and electronically transmit the information to AT&V. (Cutts, Tr. 2473). AT&V and Dywidag will be responsible for field erection, Japanese laborers will not participate. (Cutts, Tr. 2472-73). However, TKK will provide

on-site staff, between four and eight employees, to supervise the construction process. (Cutts, Tr. 2444, 2476).

3.294 For the Dynegy project, TKK/AT&V must purchase the requisite nine percent nickel steel from Japan because this type of steel cannot be purchased in the United States. (Cutts, Tr. 2474-74). Depending on where the materials are purchased, fabrication may take place in the United States or Japan. (Cutts, Tr. 2473-74).

3.295 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Fahel, Tr. 1684-85). **[XXXXX XXXXX]** (Fahel, Tr. 1685). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Fahel, Tr. 1630). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Fahel, Tr. 1632).

3.296 **[XXXXX XXXXX]** (Fahel, Tr. 1693; *See also* RX 45, at ZCC000059). **[XXXXX XXXXX]** (Fahel, Tr. 1694; *See also* RX 43, at ZCC000005). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX**

XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX] (Fahel, Tr. 1694; *See also* RX 43, at ZCC000005).

iii. CB&I's decision not to provide a tank-only bid

3.297 CB&I was also offered the opportunity to bid on the LNG tank portion of the Hackberry project. (Glenn, Tr. 4133). As part of the bid procedure, Dynegy required CB&I to submit its drawings, technical information and a firm price to Black & Veatch, a competitor. (Glenn, Tr. 4130). Besides sending CB&I an inquiry package, Black & Veatch did not make any efforts to encourage CB&I to submit a tank-only bid. (Price, Tr. 619).

3.298 CB&I met with Dynegy and indicated that it was uncomfortable providing a bid given that the Skanska/Black & Veatch group, a major competitor, was acting as the EPC contractor. (Puckett, Tr. 4574-75). CB&I did not want Skanska to 30 0 TD -Xj5pn16 -27.75 t0

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3.301 CB&I ultimately decided not to submit a tank-only bid because Black & Veatch, a company under contract with Skanska/Whessoe, was evaluating the bids and Skanska/Whessoe was a bidder. (Glenn, Tr. 4411). Given these circumstances, CB&I believed that its chance of being awarded the project was slim even if it provided the lowest bid. (Glenn, Tr. 4411). Under these conditions, CB&I did not b

3.306 Subsequently, CB&I did not submit a tank-only bid to Dynegy. (Glenn, Tr. 4138; Puckett, Tr. 4573).

iv. LNG tank finalists

3.307 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4691). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX X]** (Fahel, Tr. 1632). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4760). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4760). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4760). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4761).

3.308 Gerald Glenn also believes, based on conversations with William Puckett and Chuck Watson, that Skanska/Whessoe and TKK/AT&V are the finalists to construct the Hackberry LNG tanks. (Glenn, Tr. 4094-95, 4105) (state of mind evidence).

3.309 William Puckett has no doubt that Dynegy conducted the right due diligence in selecting competent bidders to bid on the Hackberry LNG tanks. (Puckett, Tr. 4587). At the time of Mr. Puckett's deposition, Dynegy was satisfied with the three bids it received. (Puckett, Tr. 4587-88).

3.310 Dynegy will award the LNG tank bid very soon. (Price, Tr. 619-620).

v. FERC

3.311 Dynegy filed its FERC application around December 2001. (Puckett, Tr. 4551). In December 2002, FERC provided preliminary approval for Dynegy's proposed LNG project. (RX 926).

3.312 Dynegy hired a number of firms, including Foster & Wheeler, to support it in its FERC filing application. (Puckett, Tr. 4551). Dynegy was able to get the resources it needed to complete the FERC filing. (Puckett, Tr. 4551-51).

vi. Pricing

3.313 Dynegy is satisfied with the post-merger LNG pricing it has received for the Hackberry project. (Puckett, Tr. 4568-69, 4587-88).

3.314 Black & Veatch has a team that is analyzing the firm fixed price bids submitted for the Hackberry LNG tanks. (Price, Tr. 609). Due to Dynegy's desire to keep the pricing extremely confidential, only four employees at Black & Veatch have seen the firm fixed bids. (Price, Tr. 610, 625).

3.315 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4691).

b. Atlantic LNG is not concerned about CB&I's acquisition of PDM assets

3.316 -

3.318 Bechtel believes there are unique challenges to working in Trinidad; there is a rainy season that "can slow down" the schedule. (Rapp, Tr. 1311).

3.319 Whessoe constructed the first two LNG tanks for the Trinidad LNG facility. (Rapp, Tr. 1287; Glenn, Tr. 4139). Bechtel is satisfied that the tanks Whessoe built are "well-constructed" and built to API standards. (Rapp, Tr. 1332-33). Whessoe imported a supervisory staff, and trained local labor for the Trinidad project. (Rapp, Tr. 1310).

3.320 Phillips Petroleum was responsible for providing the liquefaction process technology for the Trinidad project. (Rapp, Tr. 1314, 1316).

3.321 In 1999, CB&I bid against PDM to build a third LNG tank for the Trinidad's facility train two expansion. (Rapp, Tr. 1286-87; JX, 11 at par. 1). Bechtel chose CB&I for this project because: (1) CB&I "had worked in Trinidad before"; (2) CB&I "had a following of craftsman that worked" in Trinidad; and (3) CB&I had a lower price. (Rapp, Tr. 1294-95).

3.322 CB&I is approximately 85% complete with the construction of the third tank in Trinidad, and expects to complete the project in May 2003. (Scorsone, Tr. 4957; Glenn, Tr. 4139).

3.323 CB&I is on schedule with the construction of the LNG tank in Trinidad, and there have not been any performance problems. "Bechtel is pleased and the job is a successful one so far for CB&I." (Scorsone, Tr. 4957-58; Glenn, Tr. 4139-40). 27 TD 217.B (3.323) Tj 27 0 TD ( ) T

with TKK's bid because TKK formed a joint venture with AT&V, and because AT&V has a connection in Trinidad. (Scorsone, Tr. 5224).

3.326 TKK/AT&V was the successful bidder for this project. (Carling, Tr. 4488-89; Glenn, Tr. 4095, 4105; Scorsone, Tr. 4950).

3.327 Based on conversations with Bechtel, CB&I perceived that "[t]he price that TKK and

Trinidad based on working in Trinidad over the past 30 years. (Scorsone, Tr. 4955). CB&I has a good relationship with the local labor. (Scorsone, Tr. 4956). CB&I also has good knowledge of the local regulatory environment in Trinidad, and has good knowledge of the local subcontractors available in Trinidad. (Scorsone, Tr. 4956).

3.333 Despite all the advantages CB&I perceived it had in Trinidad, it still cut the price of its bid for the fourth tank. (Scorsone, Tr. 4958). CB&I was surprised and upset that it lost future work at Trinidad. (Glenn, Tr. 4140).

3.334 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4697). **[XXXXX XX]** (Jolly, Tr. 4697).

3.335 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4697). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XX]** (Jolly, Tr. 4698).

3.336 The pricing CB&I perceived that TKK/AT&V submitted in Trinidad has influenced CB&I's perception of TKK/AT&V's ability to compete for U.S. LNG projects. (Scorsone, Tr. 4951-52) (state of mind). CB&I perceives that TKK/AT&V is "a very serious competitor, that [is] highly focused . . . ." (Scorsone, Tr. 4953).

c. Yankee Gas is not concerned about CB&I's acquisition of PDM assets.

3.337 Yankee Gas, a Connecticut corporation, is a natural gas distribution company servicing approximately one hundred and ninety thousand customers in fifty-six cities and towns in Connecticut. (Andrukiewicz, Tr. 6439). Yankee Gas is planning to construct an on-system LNG production and vaporization system, also known as a peak shaving facility, in Waterbury, Connecticut. (Andrukiewicz, Tr. 6439-40).

3.338 Yankee Gas is constructing the facility to increase its supply portfolio to meet projected customer demand. (Andrukiewicz, Tr. 6462). The major components of the Waterbury facility include: one 2 BCF LNG tank with ten thousand cubic feet per day liquefaction and sixty thousand cubic feet per day vaporization; a liquefaction system; and a vaporization system. (Andrukiewicz, Tr. 6439-40).

3.339 The Waterbury facility will represent Yankee Gas's single largest capital expenditure. (Andrukiewicz, Tr. 6458). Yankee Gas is confident that the facility will be built and hopes to begin the construction phase in the first quarter of 2003. (Andrukiewicz, Tr. 6458).

3.340 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4693).

3.341 Yankee Gas hired CHI Engineering ("CHI") to perform a preliminary engineering analysis to determine the siting capabilities, budgetary costs and economic need for the Waterbury facility. (Andrukiewicz, Tr. 6444). As part of its analysis, CHI sought information regarding the Waterbury LNG tank from several potential LNG tank constructors. (Andrukiewicz, Tr. 6445).

3.342 CHI received responses and information from Skanska/Whessoe, Technigaz and CB&I. (Andrukiewicz, Tr. 6445). Each of the three tank builders provided pricing information, for the Waterbury LNG tank, as part of its submission. (Andrukiewicz, Tr. 6446).

3.343 In August 2001, CHI presented Yankee Gas with a preliminary engineering report. (Andrukiewicz, Tr. 6444). The report estimated the cost for the entire Waterbury facility in the $53 million range. (Andrukiewicz, Tr. 6461). The LNG tank itself would cost between $25 and $28 million. (Andrukiewicz, Tr. 6462). In addition to providing its o

CB&I knows of two companies with experience in this type of construction: Technigaz and Skanska/Whessoe. (Glenn, Tr. 4141).

3.347 Yankee Gas is currently planning to utilize the Waterbury facility to exclusively serve Yankee Gas's intrastate customers. (Andrukiewicz, Tr. 6463). Therefore, Yankee Gas does not believe FERC approval is required. (Andrukiewicz, Tr. 6463). The Waterbury facility will only be subject to FERC approval if Yankee Gas chooses to market the capacity of the tank on the interstate market. (Andrukiewicz, Tr. 6462-63).

3.348 As a regulated natural gas distribution company in the state of Connecticut, Yankee Gas is regulated by the Department of Public Utility Control ("DPUC"). (Andrukiewicz, Tr. 6443). DPUC has ordered, in a recent Yankee Gas rate case decision, that it would have the opportunity to approve the final design of the Waterbury facility. (Andrukiewicz, Tr. 6463).

3.349 After Yankee Gas received CHI's preliminary report, Skanska/Whessoe made a presentation to Yankee Gas and CHI in which Skanska/Whessoe described its tank construction capabilities. (Andrukiewicz, Tr. 6447, 6449).

3.350 Yankee Gas also met separately with CB&I and CHI. (Andrukiewicz, Tr. 6449). These conversations, however, were different than the Skanska/Whessoe presentation. (Andrukiewicz, Tr. 6449).

3.351 While the Skanska/Whessoe presentation dealt solely with tank construction, Yankee Gas's conversations with CB&I and CHI revolved around each company's methodology for building the entire LNG facility. (Andrukiewicz, Tr. 6449).

3.352 Since receiving CHI's preliminary report, Yankee Gas has contracted with another engineering consultant, SEA Consultants ("SEA"). (Andrukiewicz, Tr. 6444-45). Prior

to selecting SEA, Yankee Gas conducted a series of interviews with firms interested in assisting Yankee Gas to develop the Waterbury facility. (Andrukiewicz, Tr. 6455). Companies expressing interest included AI Group, Fuss and O'Neil, and PTL Associates. (Andrukiewicz, Tr. 6456).

3.353 Yankee Gas chose SEA because it believed SEA was best equipped to meet its needs. (Andrukiewicz, Tr. 6456). SEA's first assignment, which it is currently working on, is to develop project specifications that would allow Yankee Gas to solicit design build proposals. (Andrukiewicz, Tr. 6450). In addition to developing specifications, SEA is also charged with sending the specifications to, and soliciting information from, appropriate companies, reviewing responses, and assisting Yankee Gas in analyzing the final proposals. (Andrukiewicz, Tr. 6453).

3.354 CHI no longer has any role in the Waterbury project. (Andrukiewicz, Tr. 6459-60). While developing the preliminary engineering report, CHI expressed an interest in being involved in the design build phase of the project. (Andrukiewicz, Tr. 6459-60). Based on CHI's interest, Yankee Gas determined that CHI should not provide further engineering services. (Andrukiewicz, Tr. 6450). Currently, Yankee Gas considers CHI to be a potential EPC contractor. (Andrukiewicz, Tr. 6450).

3.355 CB&I also believes that CHI may become a potential bidder against CB&I, as an EPC contractor for the Waterbury facility. (Andrukiewicz, Tr. 6466).

3.356 Yankee Gas has not yet begun its pre-qualification process. (Andrukiewicz, Tr. 6451-52). In the pre-qualification stage, Yankee Gas will consider a constructor's prior experience, specifically with other double containment tanks a constructor has built, both domestically and abroad. (Andrukiewicz, Tr. 6452).

3.357 Yankee Gas would consider qualifying Skanska/Whessoe, Technigaz, CB&I and CHI for the Waterbury project. (Andrukiewicz, Tr. 6453-54). Yankee Gas has not disqualified Skanska/Whessoe, Technigaz, CB&I, CHI or any other company from the pre-qualification process. (Andrukiewicz, Tr. 6452-53).

3.358 Yankee Gas intends to pre-qualify firms in January 2003, and receive firm, fixed-price bids in April or May of 2003. (Scorsone, Tr. 4989).

3.359 It is unclear whether CB&I will bid on the Yankee Gas project if the design calls for a double concrete wall full containment LNG tank. (Scorsone, Tr. 4989-90; Glenn, Tr. 4141).

3.360 CB&I believes Technigaz/Zachry and Skanska/Whessoe will be competitors for the Waterbury facility. (Glenn, Tr. 4098). CB&I

3.362 Black & Veatch also intends to discuss plans to submit a bid to Yankee Gas. (Price 651-53). In fact, Brian Price has already communicated to Yankee Gas Black & Veatch's experience on the Dynegy project. (Price 653-54).

d. El Paso is not concerned about CB&I

3.367 El Paso sent pre-qualification letters to a list of potential bidders for the LNG tanks at the Altamira and Baja California terminals. (Bryngelson, Tr. 6124). The pre-qualification letters requested information on each company's previous experience and financial capabilities. (Bryngelson, Tr. 6124). The pre-qualification process was used to narrow the field down to a smaller list of qualified bidders. (Bryngelson, Tr. 6124).

3.368 El Paso's pre-qualification standards for LNG tanks is "fairly stringent." (Bryngelson, Tr. 6131). El Paso pre-qualifies a company if it meets El Paso's technical and financial requirements. (Bryngelson, Tr. 6127).

3.369 In determining the financial status of a bidder, El Paso considers a company's ability to post performance bonds and provide necessary liquidated damages coverage. (Bryngelson, Tr. 6127). El Paso will also consider the total assets of the company, and determine if "they're a strong enough company, [so that] we can go and get some money to cover our damages." (Bryngelson, Tr. 6127-28).

3.370 El Paso's pre-qualification list of LNG tank builders varies depending on who it partners with for a specific job. (Bryngelson, Tr. 6126). El Paso's general list of contractors that it considers for projects includes TKK, MHI, CB&I, TKK, Technigaz, Skanska, and IHI. (Bryngelson, Tr. 6126).

3.371 For the Rosarito terminal, El Paso pre-qualified TKK, MHI, CB&I, Entrepose (which is owned by Tractebel) and Technigaz. (Bryngelson, Tr. 6125-26). Each of the companies on the pre-qualification list for the Rosarito job have sufficient financial stability that satisfy El Paso's requirements and are technically capable of building LNG tanks. (Bryngelson, Tr. 6128-29).

3.372 CB&I believes that El Paso will solicit bids from Skanska/Whessoe, TKK, MHI, IHI, and Technigaz/Zachry for the Rosarito (Baja California) project. (Scorsone, Tr. 4992-93) (state of mind evidence); (Glenn, Tr. 4146) (state of mind).

3.373 Each of the companies on the Rosarito list submitted bids, and "they're still in the running." (Bryngelson, Tr. 6139-40). El Paso has not yet awarded a contract for this project. (Bryngelson, Tr. 6138-39).

3.374 El Paso pre-qualified six LNG tank companies for the Altamira terminal including: TKK; MHI (Mitsubishi Heavy Industries); CB&I; Technigaz; and Skanska. (Bryngelson, Tr. 6125). Each of the companies on the pre-qualification list for the Altamira job have sufficient financial stability that satisfy El Paso's requirements, and are technically capable of building LNG tanks. (Bryngelson, Tr. 6128-29).

3.375 El Paso has not yet solicited bids, or awarded a contract, for the Altamira project. (Bryngelson, Tr. 6138-39).

3.376 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXX]** (Fahel, Tr. 1668).

3.377 Kellogg Brown & Root is an engineering contractor that El Paso employs for the purpose of designing and assisting with the development process for LNG terminals. (Bryngelson, Tr. 6129). El Paso believes that KBR has an excellent reputation as an engineering consultant. (Bryngelson, Tr. 6130).

3.378 El Paso hired KBR to act as the FEED contractor for the Rosarito project, and will be probably considered for the EPC contractor position. (Glenn, Tr. 4146).

3.379 Based on input received from KBR and El Paso's engineering staff, El Paso believes that all of the bidders on the Altamira and Rosarito bid list are technically qualified, and have

a good reputation for building LNG tanks. (Bryngelson, Tr. 6129-30). All of the companies on the Altamira and Rosarito bid lists are "fairly equal as far as reputation for building field-erected LNG tanks." (Bryngelson, Tr. 6130-32). El Paso also believes that each of the companies on the Altamira and Rosarito bid lists, including IHI, can serve as a turnkey contractor for an LNG facility. (Bryngelson, Tr. 6144-45).

3.380 El Paso is sole-sourcing the Grand Bahamas job with CB&I. (Bryngelson, Tr. 6126). However, the EPC contract for the Bahamas job has not yet been awarded to CB&I. (Bryngelson, Tr. 6134). El Paso believes that all of the companies on the Altamira and Rosarito bid lists are capable of building the LNG tank for the Bahamas job at a competitive price. (Bryngelson, Tr. 6138).

3.381 El Paso would pre-qualify each of the companies on the Altamira and Rosarito bid lists to build tanks in the U.S., and believes that each of the companies are capable to build tanks in the U.S. at a competitive price. (Bryngelson, Tr. 6131-32).

3.382 El Paso would not be concerned about using a company to build an LNG tank in the U.S. if that company had no prior experience in the U.S.: "So the actual construction of the tank, it would be the same in the U.S. as it would be in an international location, by and large." (Bryngelson, Tr. 6141).

3.383 El Paso does not believe that CB&I has any competitive advantage over other companies in providing LNG facility services because: "It's a very competitive global market and we haven't seen them exert dominance in any of our bid -- our one bid process to date or any other information I have from KBR or any of the four advisers." (Bryngelson, Tr. 6146).

3.384 **[XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4695). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4695).

e. Freeport LNG is not concerned about CB&I's acquisition of PDM assets

3.385 Freeport LNG is a partnership that is developing an LNG import terminal in Freeport, Texas. (Eyermann, Tr. 6959-60). Cheniere Energy is a 40% owner of the Freeport LNG project. (Eyermann, Tr. 6961).

3.386 Freeport LNG will be constructing double-containment LNG tanks to fulfill NFPA 59A requirements on the site. (Eyermann, Tr. 6968). The tanks will each contain 160,000 cubic meters of LNG. (Eyermann, Tr. 6968). Freeport LNG currently has a completely negotiated lease for the site. (Eyermann, Tr. 6978).

3.387 Freeport LNG had a difficult time finding property large enough for the tanks because NFPA 59A requires that the radiation intensity emanating from a tank fire does not exceed a certain distance from the property line. (Eyermann, Tr. 6969-70). Freeport LNG "looked around" to find a property site that could accommodate a single containment tank, but it was ultimately unsuccessful. (Eyermann, Tr. 6970-71). Freeport LNG believes it is difficult to find enough land to build a single containment tank. (Eyermann, Tr. 7054). "If you build -- try to find a new site, you are going to have a hard time finding one that will allow you to construct a single containment tank." (Eyermann, Tr. 7055). Safety was also a consideration in choosing a double containment tank design for the Freeport facility. (Eyermann, Tr. 6971-72).

3.388 Freeport LNG

3.394 Several foreign LNG tank builders have contacted Freeport LNG, expressing interest in constructing the Freeport LNG facility including: Skanska/Whessoe (Eyermann, Tr. 6981-83); Technigaz/Zachry (Eyermann, Tr. 6994-96); TKK/AT&V (Eyermann, Tr. 7000-01); Daewoo/S&B Engineers (Eyermann, Tr. 7008); and IHI (Eyermann, Tr. 7015-16).

3.395 Freeport LNG will seek bids from at least Technigaz, TKK, CB&I, Daewoo, and Skanska/Whessoe to receive a competitive price for the LNG tanks. (Eyermann, Tr. 7018, 7022-23).

3.396 Freeport LNG

f. Calpine is not concerned about CB&I's acquisition of PDM assets

3.399 Calpine is currently exploring the possibility of developing an LNG regasification

consider Kellogg, Brown & Root and Black & Veatch as an overall engineer or manager for its project. (Izzo, Tr. 6497).

3.404 Calpine would consider Skanska/Whessoe, Technigaz/Zachry, CB&I, TKK/AT&V, and maybe others, to construct the Humboldt Bay LNG tank. (Izzo, Tr. 6496, 6501).

3.405 Calpine believes there are enough competitors for it to obtain a very competitive bid. (Izzo, Tr. 6495). Calpine needs four bidders to get a very good competitive bid and Skanska/Whessoe, Technigaz/Zachry, TKK/AT&V and CB&I are qualified to provide such bids. (Izzo, Tr. 6494-95).

3.406 Calpine, as the owner, will be responsible for preparing and submitting the FERC application for the Humboldt Bay facility. (Izzo, Tr. 6492-93). Although the Humboldt Bay project is still in early development, Calpine hopes to make a public announcement at the end of the first quarter of 2003. (Izzo, Tr. 6490).

3.407 CB&I believes that Calpine will competitively bid the Humboldt Bay project. (Scorsone, Tr. 4994) (state of mind). CB&I considers Skanska/Whessoe, Technigaz/Zachry, TKK/AT&V, Daewoo/S&B, MHI and IHI as potential competitors for this project. (Glenn, Tr. 4102, 4147; Scorsone, Tr. 4994) (state of mind).

g. British Petroleum is not concerned about CB&I's acquisition of PDM's assets.

3.408 British Petroleum ("BP") is a global company, located in Great Britain, with operations throughout the world. (Sawchuck, Tr. 6063). BP is currently developing three potential LNG import terminals in confidential locations in the United States: the northern U.S. project, the northeast U.S. project and the Tampa project. (Sawchuck, Tr. 6054; Scorsone, Tr. 4994).

3.409 All three of the projects are currently in a holding pattern as BP conducts commercial negotiations, develops gas sales contracts and evaluates other commercial opportunities. (Sawchuck, Tr. 6057). Commercial developments will determine whether BP will go forward with one or more of the LNG projects. (Sawchuck, Tr. 6058). BP does not intend to build all three terminals at the same time, as such a decision would be very expensive. (Sawchuck, Tr. 6060).

3.410 BP has already hired CB&I to assist it in creating Resource Report 13 for its northeast U.S. project's FERC application; outside environmental consultants are also assisting with the necessary environmental reports. (Sawchuck, Tr. 6056). BP also hired CB&I to evaluate methods in the construction and project management to reduce the overall construction schedule for its projects. (Scorsone, Tr. 4994).

3.411 Initially, CB&I refused to provide any front-end services unless BP awarded it the full CB&I

3.413 BP has indicated that it will sole-source negotiate with CB&I, but, it will explore other options with other contractors if it cannot reach an agreement with CB&I. (Scorsone, Tr. 4995).

3.414 BP is a sophisticate worldwide play; BP knows how much LNG storage should cost. (Glenn, Tr. 4149). CB&I does not believe it can dictate pricing and terms to BP. (Scorsone, Tr. 4995).

3.415 BP has internal benchmarks that it could use to determine the cost of LNG facilities. (Sawchuck, Tr. 6075). CB&I believes that BP has developed a sophisticated pricing model enabling it to very accurately predict the cost of some of these facilities. (Scorsone, Tr. 4995-96) (state of mind). CB&I employees that have worked with BP's model believe it to be very accurate. (Scorsone, Tr. 4997) (state of mind). CB&I believes BP's model will affect how CB&I will negotiate with BP. (Scorsone, Tr. 4997) (state of mind).

3.416 CB&I

a brand-new import terminal located in a coastal area in the northern United States. (Sawchuck, Tr. 6055).

3.419 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Sawchuck, Tr. 6112). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Sawchuck, Tr. 6109-10). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX o 1c86 Tr. 6**

3.423 BP has a list of potential tank contractors that it would consider accepting bids from for the construction of one or more of the LNG tanks on the various projects in the United States. (Sawchuck, Tr. 6062). The potential bidder list includes: Whessoe, Mitsubishi Heavy Industries, IHI, Daewoo, Hyundai, Technigaz and CB&I. (Sawchuck, Tr. 6062). BP believes that all seven of these companies have the capabilities and skills to construct LNG tanks in the United States. (Sawchuck, Tr. 6062-63). Each of these companies have successfully constructed LNG projects in other parts of the world. (Sawchuck, Tr. 6063).

3.424 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Sawchuck, Tr. 6087). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Sawchuck, Tr. 6088).

3.425 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Sawchuck, Tr. 6090).

3.426 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXX]** (Fahel, Tr. 1657). **[XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4696). In fact, BP recently awarded Technigaz an LNG project in Bilboa, Spain. (Sawchuck, Tr. 6053). **[XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4696). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4696).

3.427 BP believes that the current level of competition will provide it with a fair and reasonable LNG tank price. (Sawchuck, Tr. 6075).

h.

3.433 CB&I believes that Skanska/Whessoe, TKK/AT&V and possibly Technigaz/Zachry are potential competitors for the Cove Point II expansion. (Glenn, Tr. 4148) (state of mind evidence).

i. Marathon Oil is not concerned about CB&I's acquisition of PDM's assets

3.434 Marathon Oil owns an LNG project in the Baja Peninsula of Mexico that is being built to service the United States. (Glenn, Tr. 4151).

3.435 CB&I approached Marathon about becoming the overall contractor for the entire terminal. (Glenn, Tr. 4151).

3.436 CB&I was not allowed to pursue a bid as an EPC contractor based on its size. (Scorsone, Tr. 4938-39). CB&I made an overture toward Marathon to become the turnkey EPC contractor and Marathon told CB&I that it appreciated CB&I's efforts but it did not feel CB&I was large enough to tackle such a job. (Scorsone, Tr. 4938-39).

3.437 CB&I believes, based on a conversation with Marathon, that Marathon did not think CB&I had the financial capacity and bonding capability to handle the $500 to $700 million project. (Glenn, Tr. 4151) (state of mind).

3.438 CB&I believes that KBR will be the EPC contractor. (Glenn, Tr. 4151-52) (state of mind).

3.439 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 753).

3.440 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 754).

3.441 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 755).

j. A former Enron executive is not concerned about CB&I's acquisition of PDM's assets.

3.442 In 2001, Enron planned to construct an LNG project in the Bahamas to supply LNG to Florida through the use of a sub sea pipeline. (Scorsone, Tr. 4997; Carling, Tr. 4481; Glenn, Tr. 4149). CB&I submitted pricing to Enron around the time it went into bankruptcy. (Glenn, Tr. 4149-50).

3.443 Enron solicited, and received, competitive bids for LNG tanks in the Bahamas from CB&I, Skanska/Whessoe and Tractebel. (Carling, Tr. 4480-81). Each of these companies expressed interest in bidding the project, and had proven track records of designing LNG tanks. (Carling, Tr. 4480-81).

3.444 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Fahel, Tr. 1400, 1659, 1688). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Fahel, Tr. 1660).

3.445 Enron received the three bids for the Bahamas job in September/October 2001. (Carling, Tr. 4481). The bids for the Bahamas project were "close" and were within a "range of 7 to 10 percent." (Carling, Tr. 4481). The "Tractebel bid was the low one, with Skanska second and CB&I third." (Carling, Tr. 4481-82).

3.446 The LNG tanks for the Bahamas job were never awarded because of Enron's bankruptcy. (Carling, Tr. 4482). Enron sold the Bahamas project to Tractebel, which recently acquired Entrepose. (Scorsone, Tr. 4998; Glenn, Tr. 4150). CB&I believes that Tractebel, an EPC contractor, could build the Bahamas project by utilizing its own forces. (Scorsone, Tr. 4998) (state of mind) (Glenn, Tr. 4151).

k. Chevron/Texaco project

3.447 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4694). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4694). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XX]** (Jolly, Tr. 4694).

3.448 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4695).

3.449 **[XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4694). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4694).

3.450 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4685-86).

5. CB&I Perceives Fierce Competition In The United States LNG Market

3.451 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Glenn, Tr. 4223-24) (state of mind). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Glenn, Tr. 4224) (state of mind).

3.452 CB&I believes that in some instances its competitors may be at a cost advantage for a specific project over CB&I; e.g. double concrete full containment or full containment. (Glenn, Tr. 4408-09) (state of mind).

3.453 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Glenn, Tr. 4224) (state of mind). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Glenn, Tr. 4224) (state of mind). CB&I does not perceive that it can get away with a 5% price increase on LNG tanks now that PDM is no longer a competitor of CB&I. (Scorsone, Tr. 5062-63).

3.454 Mr. Scorsone's perceptions about competition in the LNG market have changed over time. (Scorsone, Tr. 5225). CB&I's current competitors are not the same companies Mr. Scorsone perceived to be PDM's competition for LNG tanks in 1997, 1998, 1999, and 2000. (Scorsone, Tr. 4850-52).

3.455 Mr. Scorsone knew that CB&I was a competitor to PDM for LNG tanks, but believed foreign companies could, and probably would, enter the market if demand increased. (Scorsone, Tr. 4851). This belief was based on some of the foreign companies involvement with Memphis Gas in 1994. (Scorsone, Tr. 4851).

3.456 Mr. Scorsone's perception about LNG competition changed in 2001, when press releases announced the formal establishment of joint venture companies, involving a number of global LNG builders, to pursue work in the U.S. (Scorsone, Tr. 4851).

3.457 Mr. Scorsone's perception of LNG competition changed between 2000 and early 2002 when: (1) the "market began to increase" as "potential LNG projects were being developed" in the U.S. and North America; and (2) formal announcements were made of the Technigaz/Zachry joint venture, the TKK/ATV joint venture, and in that time period Skanska acquired Whessoe from Kvaerner. (Scorsone, Tr. 4852).

3.458 Additionally, as President of PDM EC, Mr. Scorsone was responsible for submitting board reports to the Board of Directors. (Scorsone, Tr. 4883). There was a competitors section in these board reports, which included PDM EC's competitors Scorsone perceived at the time. (Scorsone, Tr. 4883). The competitors section, however, did not include an exhaustive list of PDM EC's competitors; rather, it only represented a "quick snapshot". (Scorsone, Tr. 4883). Mr. Scorsone's perceptions as to competition in the relevant

markets has changed since the time he had responsibility to submit board reports to the PDM board of directors. (Scorsone, Tr. 4884).

3.459 Mr. Scorsone perceives that each of the foreign LNG tank builders are technically capable of constructing and executing an LNG project in the U.S. (Scorsone, Tr. 4873-74) (state of mind). Mr. Scorsone also perceives that each of the foreign LNG tank builders will be able to competitively price LNG tanks against CB&I in the U.S. (Scorsone, Tr. 4874) (state of mind). While competing against foreign companies that have never previously built an LNG tank in the U.S., CB&I will assume that the foreign companies will "have a very good chance of successfully capturing the work". (Scorsone, Tr. 4872).

6. Owners Can Get Competitive Pricing Through Either Sole Source Negotiated Contracts Or A Bidding Process.

3.460 LNG contracts can be awarded either by a competitive bidding process or through a sole-source arrangement. (Scorsone, Tr. 4959). A bidding process can take between 3 and 6 months to complete. (Bryngelson, Tr. 6134-35). Owners also incur an expense while reviewing bids. (Rapp, Tr. 1304-05). Reviewing bids can cost as much as one million dollars (Bryngelson, Tr. 6135), and **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (J. Kelly, Tr. 6299).

3.461 Under a sole-source agreement, an owner negotiates a contract exclusively with one contractor. (Scorsone, Tr. 4959). Owners choose to sole-source negotiate contracts even if they have competitive alternatives. (Bryngelson, Tr. 6137-38; Scorsone, Tr. 4959).

3.462 Owners choose to engage in sole-

Companies will sole-source projects when their schedules do not allow sufficient time for a bidding process. (Glenn, Tr. 4124).

3.463 Owners will also sole-source projects when they do not have the in-house staff available to manage a bid process. (Glenn, Tr. 4124). Sole-sourcing with one contractor can provide an owner with greater flexibility, less costs, and can save time when a project is under development. (Bryngelson, Tr. 6134; Scorsone, Tr. 4959). This creates "[a] certain degree of comfort" for the owner. (Scorsone, Tr. 4959). An owner may solicit bids because of a company policy or a loose schedule. (Glenn, Tr. 4124).

3.464 The ultimate decision regarding what format the contracting process will take is the owners decision. (Glenn, Tr. 4125; Izzo, Tr. 6480-81).

a. Sole-sourcing was a common practice prior to the acquisition

3.465 Prior to the acquisition, customers commonly sole-source negotiated LNG projects in the U.S. (Scorsone, Tr. 4959-60). The three most recently constructed LNG projects in the U.S. prior to the acquisition were sole-source negotiated. In 1994, PDM negotiated a sole-source contract with Enron for an LNG import terminal in Penuelas, Puerto Rico. (Scorsone, Tr. 4960; Izzo, Tr. 6480). In 1995, CB&I negotiated a sole-source agreement for the Pine Needle peak-shaving plant, consisting of two single-containment LNG tanks, in North Carolina. (Scorsone, Tr. 4960; RX 447). PDM also entered into sole-source negotiations, and was granted a letter of intent, with Williams to construct the Cove Point LNG facility just prior to the acquisition in 2001. (Scorsone, Tr. 4963).

3.466 The Puerto Rico project consisted of a power plant and import regasification facility, including a one million barrel double containment tank. (Izzo, Tr. 6478-79). Enron was

comfortable with the open-book process it used with PDM for the Puerto Rico project, and believed that it got a "reasonable, fair price". (Izzo, Tr. 6481).

3.467 While negotiating, PDM did not assume it had no competition for the Puerto Rico project: "my view of our business is that there's always competition at some point and throughout the negotiations on a sole-source basis the customer can at any time change their mind and decide to drop you and pursue the project with some other contractor." (Scorsone, Tr. 4960).

b. [XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX]

3.468 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Scorsone, Tr. 5074; J. Kelly, Tr. 6285). The Lake Charles facility currently has three single-containment LNG tanks; each tank is 95,000 cubic meters in size. (J. Kelly, Tr. 6257-58).

3.469 As part of the Lake Charles expansion, CMS has decided to construct an additional, single containment LNG tank at the Lake Charles facility. (J. Kelly, Tr. 6260). The new tank will be larger than the three original tanks and will add 140,000 cubic meters of storage. (J. Kelly, Tr. 6260). The one tank expansion will cost approximately $35 million. (J. Kelly, Tr. 6260). The expansion will expand the send-out capacity of the facility from 630 million cubic feet a day to 1.2 billion cubic feet per day. (J. Kelly, Tr.

3.470 CMS entered into an EPC agreement with CB&I for the Lake Charles expansion. (J. Kelly, Tr. 6260). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (J. Kelly, Tr. 6288).

3.474 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (J. Kelly, Tr. 6293). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (J. Kelly, Tr. 6284). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (J. Kelly, Tr. 6285, 6293).

[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX] (J. Kelly, Tr. 6285).

3.475 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXX]** (J. Kelly, Tr. 6290). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXX]** (J. Kelly, Tr. 6290).

3.476 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (J. Kelly, Tr. 6290-91). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (J. Kelly, Tr. 6296). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (J. Kelly, Tr. 6291) **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (J. Kelly, Tr. 6296).

3.477 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Kelly, Tr. 6284-85). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Scorsone, Tr. 5075). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (J. Kelly, Tr. 6285). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (J. Kelly, Tr. 6285).

3.478 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]**

3.482 The size of a tank constructor is important because for the Lake Charles expansion contract, CMS requested a parent guarantee; the parent company needed to be financially large enough to support the size of the project. (Kelly, Tr. 6264).

3.483 CMS believes there is enough competition from international vendors to ensure that a single tank supplier will not be able unilaterally raise prices. (Kelly, Tr. 6263-64).

c. El Paso is satisfied with its sole source arrangement with CB&I

3.484 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Scorsone, Tr. 5077-78). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Scorsone, Tr. 5077-78).

3.485 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXX]** (Scorsone, Tr. 5078). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Scorsone, Tr. 5078).

3.486 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXX]** (Scorsone, Tr. 5080). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Scorsone, Tr. 5079). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Scorsone, Tr. 5079).

3.487 CB&I is also in sole-source negotiations with El Paso to construct an LNG import facility in the Bahamas, which will serve the U.S. market. (Scorsone, Tr. 4991-92; Glenn, Tr. 4145). However, the EPC contract for the Bahamas job has not yet been awarded to CB&I. (Bryngelson, Tr. 6134).

3.488 El Paso decided to sole-source the Bahamas job to CB&I for two reasons: (1) sole-sourcing saves time during the development process; and (2) CB&I was willing to "wear a lot of the predevelopment costs in the design" of the facility. (Bryngelson, Tr. 6134).

3.489 A bid process could take between three and six months, and could cost El Paso "in the order of a million dollars plus." (Bryngelson, Tr. 6134-35). By sole-sourcing the Bahamas job to CB&I, El Paso was put in a better competitive position over other owners who are considering building a potential LNG facility in the same location. (Bryngelson, Tr. 6134-35).

3.490 El Paso felt "comfortable with deal structure" with CB&I for the Bahamas project. (Bryngelson, Tr. 6136). El Paso does not have any concerns with CB&I's price for the Bahamas job because it "will be done on an open-book basis where we see what costs going into--go into it, plus an agreed margin or fee structure on top of that." (Bryngelson, Tr. 6136).

3.491 CB&I does not believe it can dictate its price terms while in sole source negotiations with El Paso for the Bahamas project. (Scorsone, Tr. 4992). CB&I perceives that El Paso will "select another contractor to negotiate sole source with or bid the project" if it cannot reach an agreement with CB&I on price and terms. (Scorsone, Tr. 4993) (state of mind).

3.492 El Paso is not sole-sourcing the Bahamas project because it believes CB&I is the only company capable of performing the job. (Bryngelson, Tr. 6137-38). Rather, El Paso believes that all of the companies on the Altamira and Rosarito bid list are capable of building the LNG tank for the Bahamas job at a competitive price. (Bryngelson, Tr. 6138).

7. The Bids Submitted For The Memphis, Light, And Gas Project Are Not

quote because it did not want to take the risk of bidding the project. (Kistenmacher, Tr. 940).

3.498 Lotepro's total facility bid was approximately $40 million. (Kistenmacher, Tr. 939). Lotepro incorporated an LNG tank construction quotation from Titan Constructors in its Memphis bid. (Kistenmacher, Tr. 895-96) Noell Whessoe's engineering package accounted for $1 million of the $15 million tank bid, while Titan Constructor's construction/erection costs accounted for the remaining $14 million. (Kistenmacher, Tr. 900, 938).

ignored this requirement. (RX 888). +-RX 888 indicates that Black & Veatch's tank price, using TKK's design, was approximately $13 million. (RX 888). Of the $13 million tank price, over $10 million of the cost was attributed to materials and labor that would be supplied by Graver for the project. (RX 888). This document further indicates that "the erection costs quoted by Graver Tank are very high." (RX 888). CX 1571, which represents the bid results of the Memphis project, indicates that Black & Veatch's tank price was $16.7 million. (Price, Tr. 646; CX 1571).

3.503 Brian Price of Black & Veatch conceded that a primary reason it was unsuccessful at Memphis was because its liquefaction unit had a high cost. (Price, Tr. 561, 645). Black & Veatch's total bid price for the Memphis project was $47,700,000. (Price, Tr. 648). Black & Veatch submitted a liquefaction bid that was $31 million. (Price, Tr. 648; CX 1571). Black & Veatch's liquefaction bid was $11 million higher than PDM's bid, and $9 million dollars higher than CB&I's bid. (Price, Tr. 648-49). In fact, even if Black & Veatch partnered with PDM to bid on the Memphis project, the Black & Veatch/PDM bid still would have finished fourth in the bidding process. (Price, Tr. 648-49).

3.504 Preload also submitted a tank only bid for the Memphis project. (Price, Tr. 555). Preload proposed to build a steel-lined concrete tank. (Hall, Tr. 1816-17).

3.505 While PDM/Air Products submitted the lowest bid for the Memphis project, its bid did not conform to MLGW's specifications. (Hall, Tr. 1823-24; Davis, Tr. 3196). In fact, PDM's bid had approximately 157 shortcomings that were out of line with MLGW's request for proposal. (Hall, Tr. 1823-24). PDM also failed to address a variety of engineering issues. (Hall

Products' bid was disqualified. (Hall, Tr. 1823-24; Scorsone, Tr. 5012). PDM's bid and CB&I's bid were "not quoted on the same item." (Hall, Tr. 1839-40).

3.506 PDM did not submit a separate break-out price for the LNG tank, apart from the liquefaction unit bid. (Scorsone, Tr. 5010). Because PDM failed to provide a separate price for the LNG tank, Mr. Scorsone testified that it would be difficult to determine what

managing the safety, managing the regulations and managing the unions." (Carling, Tr. 4526). Building a tank "is a relatively straightforward exercise when compared with other aspects of construction." (Carling, Tr. 4526).

3.517 Prior to the acquisition, PDM teamed with Technigaz to construct

filing applications and gaining permitting approval from FERC. (Carling, Tr. 4480; Bryngelson, Tr. 6148; Scorsone, Tr. 4930-31; Cutts, Tr. 2500). The tank contractor will typically only provide technical data to support the filing. (Bryngelson, Tr. 6148).

3.523 Several owners such as El Paso, Williams, CMS and Tractebel have experience working on FERC applications. (Bryngelson, Tr. 6148-49). El Paso has experience filing for FERC permitting for the Elba Island reactivation, and has worked with Williams on FERC matters in connection with the Cove Point reactivation. (Bryngelson, Tr. 6149). Enron also was responsible for applying for FERC permitting for the Puerto Rico project and the Bahamas project. (Carling, Tr. 4480). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX] [XXXXX XXXXX XXXX]**

3.524 CB&I

3.525 **[XXXXX XXXXX]**

manufacturers will also teach welders. (Glenn, Tr. 4121-22). There are a half dozen places in the Houston area where people could take welding classes and become certified. (Glenn, Tr. 4122).

3.535 Prior experience with welding nine percent nickel steel is not a prerequisite for working on an LNG tank. (Rano, Tr. 6031-32). In connection with an LNG tank CB&I built in Bonny Island, Nigeria, CB&I's four welding supervisors did not have prior experience welding nine percent nickel steel. (Rano, Tr. 6031-32). CB&I's supervisors on LNG projects in Indonesia, Das Island, and Spain also did not have experience in working with nickel steel. (Rano, Tr. 6031-32).

3.536 CB&I does not have plans to staff its domestic LNG projects with welders who have experience nine percent nickel steel. (Rano, Tr. 5936-37). The use of experienced nine percent nickel welders is unnecessary, and can be counterproductive because: (1) the welder's qualifications may have lapsed; (2) the welder would have to be retested; and (3) improperly trained welders may need to be "untrained." (Rano, Tr. 5937).

3.537 Workers with some welding experience can be trained and qualified to weld nine percent nickel steel in 1-2 weeks, while workers with no prior experience welding can be trained in 2-3 weeks. (Rano, Tr. 5947-48).

3.538 With respect to the Bonny Island, Nigeria project, CB&I's newly-trained Nigerian welders achieved a weld acceptance rate of over 99 percent, which is well above industry norms in the U.S. and worldwide. (Rano, Tr. 5918-19).

3.539 Whessoe has knowledge of procedures to weld nine percent nickel as evidenced by the two LNG tanks that they built in Trinidad. (Rapp, Tr. 1312). In 1999, Whessoe and Kvaerner trained local Indian workers to weld nine percent nickel steel for an LNG

project they were constructing in Dabhol, India. (Carling, Tr. 4461-62). The Indian labor force passed the welding tests within a week. (Carling, Tr. 4462). The welding failure rate on this project was below 2%, which fell within the acceptable performance range for similar sized jobs. (Carling, Tr. 4459).

3.540 TKK is sharing welding technology with AT&V, and training AT&V's welders on 9% nickel steel. (Cutts, Tr. 2442, 2565). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4721).

4. The Use Of Subcontractors Are Not A Barrier To Entry Or Success For Foreign Competitors

3.541 A turnkey contractor can have complete or partial responsibility for the engineering, procurement, construction, and start-up functions for an LNG facility. (Rapp, Tr. 1323-24). Turnkey contractors for LNG projects typically subcontract out portions of a construction project to other companies. (Bryngelson, Tr. 6143; Rapp, Tr. 1323-24).

3.542 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 719).

3.543 Subcontracting certain portions of an LNG tank job does not necessarily increase the costs of a particular job. (Bryngelson, Tr. 6143). In some cases, subcontracting actually lowers costs because subcontractors with an expertise in a particular area are able to use a standardized approach in performing work. (Bryngelson, Tr. 6143-44). Similarly, subcontracting can reduce the price of a bid because specialized subcontractors may be better at certain job functions than the general contractor, which could improve the overall schedule. (Cutts, Tr. 2472).

3.544 A turnkey contractor can reduce its overhead costs by using a local subcontractor because hiring local labor may be cheaper than retaining higher paid people on staff. (Bryngelson, Tr. 6144).

3.545 One project owner, El Paso, would not be concerned about qualifying a supplier to construct an LNG tank if more than fifty percent of the work would be subcontracted out to another company. (Bryngelson, Tr. 6169).

3.546 CB&I regularly subcontracts certain aspects of construction projects, such as concrete, to other firms. (Rano, Tr. 5923). Concrete work is not one of CB&I's core competencies. (Rano, Tr. 5920-21). CB&I has never self-performed the construction of concrete walls for field-erected LNG tanks, regularly subcontracts out concrete work for the tank's foundation. (Rano, Tr. 5920-23). CB&I has always subcontracted this function to competent concrete companies. (Rano, Tr. 5923). The concrete subcontract on a full-containment LNG tank is significant, and can represent almost 40% of the project's total value. (Rano, Tr. 5923).

5. The Price Of Shipping Raw Materials Is Not A Barrier To Entry Or Success For Foreign Competitors

3.547 CB&I's procurement group procures raw materials, listed on the bill of material, from a wide variety of vendors. (Scorsone, Tr. 4889-90). One essential part of the procurement process for an LNG tanks is the purchase of nine percent nickel steel. (Rano, Tr. 5895-96; Scorsone, Tr. 4890). CB&I generally acquires its nine percent nickel steel from foreign sources, principally Japan and Europe. (Glenn, Tr. 4116; Scorsone, Tr. 4890-91). For example, CB&I procured nine percent nickel steel from Europe for the current Cove Point, Maryland LNG expansion. (Glenn, Tr. 4116-17). CB&I believes there is only one manufacturer of nine percent nickel steel in the United States; CB&I has serious

questions about the quality and the timeliness of delivery of this manufacturer. (Glenn, Tr. 4116; Rano, Tr. 5896-97).

3.548 Current customers agree that nine percent nickel steel is internationally sourced from a few steel mills. (Izzo, Tr. 6503). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXX] XXXXX XXXXX [XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXX] XXXXX XXXXX [XXXXX XXXXX XXXXX XXXXX XXXXX] [XXXX XXXXX]** AT&V concurs that steel for the Dynegy project must be imported from Japan because it is not available in the United States. (Cutts, Tr. 2474-75). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4717).

3.549 CB&I does not believe it has a competitive advantage over foreign LNG firms for the procurement of steel for jobs in the U.S. because "it's a global, competitive market." (Scorsone, Tr. 4892).

6. The Lack Of Local Labor/Workforce Is Not A Barrier To Entry Or Success For Foreign Competitors

3.550 Workers involved in the field erection of an LNG tank include: carpenters, pipe fitters, welders and painters. (Glenn, Tr. 4119). Field crew workers are free to work for a number of companies (Rano, Tr. 5952-53), and tend to move from job to job depending on where work is available. (Rano, Tr. 5957). Because field crews are very migratory, CB&I hires its general field labor on a job to job basis. (Glenn, Tr. 4119-20; Rano, Tr. 5917-18, 5952-53). Most of the touch-craft field labor and supervision are paid on an hourly basis. (Scorsone, Tr. 4896; Rano, Tr. 5952-53).

3.551 CB&I's salaried personnel on LNG projects include superintendents, construction L6c

(Rano, Tr. 5972-73). If CB&I cannot find a trained and qualified local labor force, it will train and qualify them to do the work. (Rano, Tr. 5916-17).

3.556 A foreign company building an LNG tank in the United States will not incur additional costs over a U.S. competitor as a result of having to import foreign labor. (Bryngelson, Tr. 6150). Similar to CB&I, a foreign company seeking to build an LNG tank in the United States would hire domestic workers from a local labor pool. (Bryngelson, Tr. 6150;

and educational levels inferior to Western workers. (Carling, Tr. 4461-62). Whessoe also has experience working with a local labor force in Trinidad. (Rapp, Tr. 1310).

3.559 TKK has experience constructing field-erected LNG tanks in Nigeria. (Rano, Tr. 5926). The average U.S. worker has some high school education and some training in the crafts. (Rano, Tr. 5972-73). By contrast, the average worker in a place like Nigeria has very little education and infrastructure to support him. (Rano, Tr. 5972-73). These differences make it easier to construct a field-erected LNG tank in the U.S. as opposed to a place like Nigeria. (Rano, Tr. 5972-73).

7. The Lack Of Locally Owned Fabrication Facilities Is Not A Barrier To Entry Or Success For Foreign Competitors

3.560 Steel fabrication for LNG tanks is a simple process, involving squaring, beveling, and rolling of manufactured steel plate. (Glenn, Tr. 4117; Rano, Tr. 5898). Fabrication costs account for less than five percent of the total cost of an LNG tank. (Glenn, Tr. 4119). The fabrication process for LNG

3.563 The nine percent nickel steel procured for the Cove Point LNG project and Puerto Rico LNG project was fabricated in Europe and shipped to the job site. (Glenn, Tr. 4118; Scorsone, Tr. 4893-94). Although CB&I had the capability and the capacity to fabricate the steel for the Cove Point project at one of its fabrication facilities, it chose to have it fabricated overseas because it was "less expensive." (Scorsone, Tr. 4894-95). Similarly, CB&I purchased pre-fabricated steel from Japan for an LNG tank it built in Salley, South Carolina. (Glenn, Tr. 4118-19). For the Bonny Island, Nigeria LNG project, CB&I also fabricated the steel in Japan, where it was purchased. (Rano, Tr. 5899).

3.564 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Jolly, Tr. 4715; *see also* Glenn, Tr. 4117, 4119; Rano, Tr. 5898).

8. CB&I Perceives That Foreign Companies Can Effectively Build LNG Tanks In The U.S.

3.565 Foreign LNG tank builders are able to work in countries where they don't have a permanent physical presence for several reasons: (1) they make an effort to understand the cultures of the countries they operate in; (2) they are sophisticated worldwide procurers of materials; (3) they mobilize an expatriate work force, while using a high degree of local labor and global subcontractors; and (4) they are very good at logistically

greenfield areas around the world. (Scorsone, Tr. 4870-71) (state of mind). A "greenfield" location is an area that is not industrially developed. (Scorsone, Tr. 4871).

3.567 It is much easier for a tank builder to construct an LNG tank in the U.S. than it is to construct in a remote, greenfield location such as Nigeria where tank builders encounter obstacles relating to: (1) the local political environment; (2) weather; and (3) communication and infrastructure limitations. (Scorsone, Tr. 4871; Rano, Tr. 5973-87).

a. The U.S. political climate is not a barrier to entry in the LNG markets

3.568 The political situation in a particular country can affect the ability of a contractor to construct a field-erected LNG facility. (Rano, Tr. 5973-74). Based on his experience throughout the world, and on the information that he has acquired as Vice President of CB&I, Peter Rano is able to compare the ability to deal with the political situation in the United States with abilities outside of the U.S. (Rano, Tr. 5973-74). In a place like Nigeria, it is difficult to deal with the political situation: laws change regularly; the enforcement of those laws is erratic; and contractors must deal with various civil governments, and various local rulers. (Rano, Tr. 5974-76). These political aspects create an added burden that does not exist in developed countries, such as the United States, where the "laws are stated and understood and applied equally." (Rano, Tr. 5974-76).

b. Weather is not a barrier to entry in the U.S. LNG markets

3.569 The weather in a particular country can affect the ability of a contractor to construct a field-erected LNG facility. (Rano, Tr. 5977-79). Based on his experience throughout the world, and on the information that he has acquired as Vice President of CB&I, Mr. Rano is able to compare the ability to deal with weather in the United States with abilities outside of the U.S. (Rano, Tr. 5977-78). It is far more difficult to work in places such as

Nigeria (rain) and the Middle East (heat) than it is to work in the United States. (Rano, Tr. 5978-79). Weather in the U.S. is much more moderate. (Rano, Tr. 5978-79).

c. Communications and infrastructure are not a barrier to entry in the U.S. LNG markets

3.570 The communications and infrastructure that are available in a particular country can affect the ability of a contractor to construct a field-erected LNG facility. (Rano, Tr. 5980-81). Based on his experience throughout the world, Mr. Rano is able to compare communications and infrastructure available in the U.S. to that which is available elsewhere in the world. (Rano, Tr. 5980-81). In countries such as Nigeria, the available infrastructure is minimal and telephones work less than half of the time. Communication is important for many reasons, such as problem solving and informing management of developments. (Rano, Tr. 5986-87). Because of the developed communication infrastructure in the U.S., it is easier to construct a field-erected LNG tank in the U.S. than in other, less developed parts of the world. (Rano, Tr. 5986-87).

D. RESPONDENTS' WITNESSES HAVE FOUNDATION FOR THEIR VIEWS AND OBSERVATIONS BASED ON CURRENT COMPETITION IN THE LNG

for an expansion of the Dabhol project. (Carling, Tr. 4465, 4473). Further, Mr. Carling was extensively involved in the Puerto Rico LNG facility that PDM

3. Robert Bryngelson Has Foundation To Discuss The LNG Markets

3.577 Robert Bryngelson is the Managing Director of Business Development for El Paso Global LNG, and is responsible for developing LNG infrastructure throughout the world. (Bryngelson, Tr. 6121).

3.578 Mr. Bryngelson is currently managing a team for the development of three LNG terminals in Altamira, Mexico, Baja California, Mexico, and on the Grand Bahama Island. (Bryngelson, Tr. 6161-62). He was involved in identifying a list of qualified LNG tank bidders for these projects. (Bryngelson, Tr. 6124).

3.579 Mr. Bryngelson relied upon input provided by Kellogg Brown & Root, a reputable engineering contractor and consultant, who examined each of the LNG tank bidders and determined that they all have the necessary qualifications and reputations to successfully build LNG tanks for El Paso's projects. (Bryngelson, Tr. 6129-30). Halliburton KBR has access to historical pricing information of LNG tanks. (Scorsone, Tr. 4940). Halliburton KBR is capable of determining whether the price of an LNG tank price submitted is reasonable based on its access to historical tank pricing. (Scorsone, Tr. 4940). Halliburton KBR assists owners in evaluating tank bids. (Scorsone, Tr. 4940-41).

4. Jeffrey Sawchuck Has Foundation To Discuss The LNG Markets

3.580 Jeffrey Sawchuck is employed by British Petroleum, which is developing three potential LNG import terminals in the U.S., costing hundreds of millions of dollars. (Sawchuck, Tr. 6054, 6066). Mr. Sawchuck is responsible for the LNG technology program and LNG network within BP. (Sawchuck, Tr. 6050-51).

3.581 Mr. Sawchuck is entrusted by BP to oversee every LNG project which might be completed in the U.S. He has ultimate responsibility for the evaluation of potential LNG vendors. (Sawchuck Tr. 6050-51).

3.582 Mr. Sawchuck has worked on a number of BP's LNG projects in Trinidad and in Spain, and has evaluated bids from various suppliers including PDM, CB&I, and Whessoe. (Sawchuck, Tr. 6052-53). Mr. Sawchuck was also involved in the Bilbao, Spain LNG project, in which BP selected Technigaz as the LNG tank contractor. (Sawchuck, Tr. 6052-53).

5. William Puckett Has Foundation To Discuss The LNG Markets

3.583 As vice president of technical services, William Puckett is responsible for the execution of Dynegy's major projects including Dynegy's current plan to build the largest LNG regasification facility in the United States. (Puckett, Tr. 4539-40).

3.584 In addition to conducting a six week, world-wide search for an EPC contractor, Mr. Puckett has also performed a pre-qualification process for the LNG tank portion of the project. (Puckett, Tr. 4545, 4552).

3.585 During the pre-qualification process, Dynegy reviewed promotional materials of, conducted meetings with and interviewed four potential tank providers. (Puckett, Tr. 4554). Dynegy received bids from three of the contractors, Skanska/Whessoe, TKK/AT&V and Technigaz/Zachry. (Puckett, Tr. 4556).

3.586 Dynegy hired a consultant, Black & Veatch, to analyze the bids. (Puckett, Tr. 4557). All of the bids were within Dynegy's expected price range. (Puckett, Tr. 4557).

6. Larry Izzo Has Foundation To Discuss The LNG Markets

3.587 Larry Izzo of Calpine is considering constructing an LNG import facility at a cost of approximately $250 million. (Izzo, Tr. 6493). As senior vice president, Mr. Izzo is responsible for the company's current plans to construct an LNG facility in Humboldt Bay, California. (Izzo, Tr. 6474).

3.588 Mr. Izzo is personally familiar with LNG facilities, including peak-shavers, built in the United States. (Izzo, Tr. 6474, 6540). Prior to working at Calpine, Mr. Izzo worked for Enron for 11 years. (Izzo, Tr. 6475). While at Enron, Mr. Izzo was involved in several LNG projects including the Dabhol, India and Penuelas, Puerto Rico LNG projects. (Izzo, Tr. 6476).

3.589 Mr. Izzo has experience with, and knowledge of, internationals, Puer.,0.0 Tw (-) Tj 4.5 0 TD -0.097

the scope of work for that price. (Glen, Tr. 4125). The contractor bears the burden of any cost overruns. (Glen, Tr. 4125).

3.598 In contrast to a firm, fixed-

be required for field erection; or (6) consider current fabrication rates. (Scorsone, Tr. 4999-5000).

3.602 CB&I does not know what the construction schedule will be when it submits a ROM or budget estimate. (Scorsone, Tr. 5000). CB&I cannot determine what its equipment and tool costs, or its mobilization and demobilization costs are at the time it submits a budgetary estimate or a ROM price. (Scorsone, Tr. 5000-01).

3.603 CB&I does not know what time of year a project will be constructed in when it submits a budgetary estimate or a ROM price. (Scorsone, Tr. 5001). CB&I's labor productivity is impacted depending on the weather in which it constructs; this impact will affect CB&I's price. (Scorsone, Tr. 5001).

3.604 CB&I often does not know the precise location for a project when it prepares a budgetary estimate or a ROM price. (Scorsone, Tr. 5001). This can impact the price of a project because CB&I cannot account for the m

may be 30%, this does not mean that CB&I will seek a 30% profit margin if a firm, final bid is submitted. (Scorsone, Tr. 5003).

3.607 Customers do not purchase LNG

making its budget based on the numbers. (Hall, Tr. 1869). Second, the number was not provided under competitive conditions -- in other words, no formal bidding process had been entered into at this point. (Hall, Tr. 1869-70). Moreover, MLGW is at least five or six years away from entering into such a process. (Hall, Tr. 1869-70).

3.611 The budgetary price CB&I submitted to MLGW cannot be likened to a firm, fixed-price bid because: (1) CB&I does not know what the price of materials will be in five to seven years; (2) it does not know what engineering rates will be in five to seven years; (3) it does not know what fabrication rates will be in five to seven years; (4) it does not know if material will be imported from Europe in five to seven years; and (5) it does not know what the field engineering rates will be in five to seven years. (Scorsone, Tr. 5251).

3.612 CB&I will not seek a 30% margin if it submits a fixed, firm offer to sell the tank to Memphis. (Scorsone, Tr. 5251). The 30% margin included in the budget estimate contained a number of contingencies. (Scorsone, Tr. 5252).

3.613 When MLGW purchased a field-erected LNG tank in 1994, it did so only after receiving firm, fixed-price bids. (Hall, Tr. 1861-63). Mr. Hall of MLGW spoke with the FTC in September of 2002. (Hall, Tr. 1873). During that conversation, Hall was asked whether he had made any effort to compare the SWAG that he received to the firm, fixed-price bid received by MLGW in 1994. Hall told them that he had made no such comparison. (Hall, Tr. 1873-74). Further, to Hall's recollection, no one from the FTC asked him

three LNG tanks each of which is 42 times the size of the one million gallon tank Alaska Fairbanks is considering. (Scorsone, Tr. 5007) .

3.615 A budget price for a project in Alaska will be "very rough" unless the customer provides very specific information. (Scorsone, Tr. 5006). Fairbanks, Alaska is in a very remote location, and is a very difficult area to work. (Scorsone, Tr. 5004-05). It is also more expensive to work in Alaska than in the lower 48 contingent states. (Scorsone, Tr. 5005). For example, it is difficult to ship construction materials to Alaska. (Scorsone, Tr. 5005). Additionally, due to the climate CB&I will encounter safety issues and productivity problems working in Alaska. (Scorsone, Tr. 5006).

3.616 Therefore, there are more unknowns when CB&I submits budget estimates or ROM prices for projects in Alaska than there are for projects in the United States. (Scorsone, Tr. 5006).

3.617 Within the LNG industry, it is known that the cost per unit stored volume increases as the tank size decreases. (Scorsone, Tr. 5008).

4. Cove Point, Maryland

3.618 Prior to the acquisition, PDM submitted a bid for the construction of a fourth LNG tank at the Cove Point facility. (Scorsone, Tr. 4962-63). Columbia was the owner of the Cove Point facility at the time of the bid. (Scorsone, Tr. 4962-63). The Cove Point facility was subsequently sold to Williams during the bidding process. (Scorsone, Tr. 4963).

a. PDM needed to re-price the tank after the project's scope changed

3.619 The size of the Cove Point tank was 750,000 barrels when PDM first submitted a bid for the project. (Scorsone, Tr. 4963-64). Subsequently, Williams modified the project's specifications, increasing the tank size from 750,000 barrels to 850,000 barrels. (Scorsone, Tr. 4964). As a result, PDM needed to re-design, and re-price, the tank to

account for the specification change. (Scorsone, Tr. 4964). The re-design took approximately 200 hours, and the follow-up estimating for the project took between 100 and 200 hours. (Scorsone, Tr. 4964).

3.620 PDM ultimately submitted a new price for the 850,000 barrel tank. (Scorsone, Tr. 4965).

At the time PDM submitted a new price, Mr. Scorsone believed that CB&Iup eagainstt thenew

3.624 A consensus was reached at the bid review meeting to set the price that was submitted to Williams. (Scorsone, Tr. 4968-69). The members of the group, however, were not in complete agreement. (Scorsone, Tr. 4969). A complete agreement is "rarely" reached among the participants at a bid review meeting. (Scorsone, Tr. 4969).

3.625 In an attempt to solicit comments from committee participants after the meeting, Scorsone circulated the price (CX 1160) that was reached at the bid review committee to the participants. (Scorsone, Tr. 4969-70).

3.626 CX-1160 contains a series of prices in two columns labeled "as reviewed" and "as submitted". (Scorsone, Tr. 4971). The "as reviewed" column represented the pricing that was submitted at the beginning of the bid review meeting. (Scorsone, Tr. 4971). The "as submitted" column reflects the actual price, on a summary level, that was submitted to Williams for the 850,000 barrel tank. (Scorsone, Tr. 4971).

3.627 On November 6, 2000, Jeff Steimer sent his comments regarding the results of the bid review meeting. (CX-1160; Scorsone, Tr. 4969-70).

3.628 The materials estimate was revised by the bid review meeting. (Scorsone, Tr. 4973). While Mr. Steimer did not agree with the revised material estimate, he did not hold a majority view. (Scorsone, Tr. 4973). Mr. Steimer "was a salesperson on the project and it's not untypical for salespersons to have concerns when prices are increased." (Scorsone, Tr. 4973). Mr. Steimer does not have any experience in estimating the amount of materials for an LNG tank, and does not have the basis of knowledge to hold a valid opinion on this subject. (Scorsone, Tr. 4974).

3.629 Mr. Scorsone also did not agree with Mr. Steimer's comments made in connection with the project's revised engineering estimates. (Scorsone, Tr. 4974). The engineering

estimate was increased for this project because PDM's "engineering group was struggling" and Mr. Scorsone was "uncomfortable with the level of engineering effort . . . ." (Scorsone, Tr. 4975).

3.630 Neither Mr. Scorsone nor the bid review group agreed with Mr. Steimer's comments with respect to the revised estimates for fabrication, field erection, subcontracting, and project management. (Scorsone, Tr. 4976-80). Mr. Steimer has never been involved in the

XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX] (Scorsone, Tr. 5333-34). **[X**

(Scorsone, Tr. 4985). Further, there are various inaccuracies contained in this re-estimate. (Scorsone, Tr. 4985-86).

3.639 First, the estimate did not properly account for the erection method that PDM used for the tank roof. PDM used "a complete[ly] different method" than the one used by CB&I. (Scorsone, Tr. 4986). "PDM and CB&I

steel. (Blaumueller, Tr. 286). CB&I gave People's Gas a good price for the 1973 Champaign facility. (Blaumueller, Tr. 288).

3.643

The refinery gas was created as a by-product from making gasoline and other products. (Blaumueller, Tr. 328). The source of the refinery gas for the Joliet facility is different from the direct natural gas, from the Gulf, that would be pumped directly to the Champaign facility. (Blaumueller, Tr. 328). Thus, the Joliet facility was based on refinery gas, not natural gas. (Blaumueller, Tr. 327). Methane derived from cracking petroleum is not a natural gas. (Blaumueller, Tr. 282).

3.647 The physical composition of the methane gas to be stored in the Joliet methane facility is "very similar", but not identical, to LNG. (Blaumueller, Tr. 282). In the Joliet facility, the methane portion of the refinery gas would be stored "in the equivalent of LNG tanks". (Blaumueller, Tr. 281).

3.648 The pricing Mr. Blaumueller received from CB&I and PDM, in 1998 or 1999, were only preliminary estimates, not firm price quotes. (Blaumueller, Tr. 328-29).

3.649 Mr. Blaumueller believes it will take a foreign company "decades" to learn how to complete a successful regulatory filing. (Blaumueller, Tr. 311-12).

2. Clay Hall

3.650 Clay Hall is an engineer employed by Memphis Light, Water & Gas ("MLGW"). (Hall, Tr. 1771-73). MLGW is not a current participant in the market for field-erected LNG tanks. (Hall, Tr. 1832-33). MLGW has not received firm bids on an LNG tank since 1994, and does not plan to procure an LNG tank until at least 2006. (Hall, Tr. 1832-33).

3.651 PDM has never done work for MLGW, and since 1994, Mr. Hall does not recall PDM ever contacting him regarding potential LNG work. (Hall, Tr. 1840-41).

3.652 Mr. Hall has limited knowledge regarding the LNG market; he is not familiar with projects relating to import terminals. (Hall, Tr. 1854-56). While Mr. Hall is generally

aware of the Yankee Gas peak-shaving project, he is not familiar with any of the bidders that have been working on that project. (Hall, Tr. 1856-57).

3.653 Since 1994, neither Mr. Hall or MLGW has conducted any searches for builders of field-erected LNG tanks or facilities. (Hall, Tr. 1843-45). Mr. Hall does not monitor the LNG

(Hall, Tr. 1805, 1849-50). Mr. Hall is generally familiar with AT&V, but does not know whether a combination of TKK/AT&V would be able to build LNG tanks in the U.S. (Hall, Tr. 1850-53).

3.657 In order for Mr. Hall to determine whether TKK/AT&V was a viable competitor to CB&I in the U.S., Hall would need a lot of additional information, including resumes of key employees, experience lists, and references. (Hall, Tr. 1853-54). Mr. Hall has not seen any of this information. (Hall, Tr. 1853-54). When MLGW solicits bids for field-erected LNG tanks in the future, Mr. Hall would consider soliciting a bid from TKK/AT&V. (Hall, Tr. 1854). He does not know one way or the other whether that entity would be qualified to build such a tank from MLGW. (Hall, Tr. 1854).

3. Brian Price

3.658 Mr. Price, a Black & Veatch employee, works with salesmen in presenting Black & Veatch's credentials and capabilities to clients. (Price, Tr. 510-11).

3.659 Black & Veatch is a head-to-head competitor of CB&I on peak-shaving facilities. (Price, Tr. 641). Black & Veatch owns proprietary liquefaction technology called PRICO that it sells to customers for use at peak-shaving plants. (Price, Tr. 520). CB&I's liquefaction process competes with a liquefaction process that Mr. Price personally patented. (Price, Tr. 642).

3.660 Black & Veatch has a team that is analyzing the firm fixed prices that have been bid for the Dynegy tanks. (Price, Tr. 609). Mr. Price has not seen these bids. (Price, Tr. 610). Price has not seen the details of the budget pricing Black & Veatch received for the Dynegy project. (Price, Tr. 629).

3.661 Black & Veatch did

1990, Black & Veatch has not received any firm, fixed-price bids for an LNG tank from either PDM or CB&I. (Price, Tr. 644).

4. Robert Davis

3.666 Robert Davis is the director of HYCO services for Air Products. (Davis, Tr. 3174). Mr. Davis does not have any current responsibility relating to LNG projects. (Davis, Tr. 3175). Mr. Davis does not have any firsthand experience with the construction of LNG

3.673 Linde BOC competes against CB&I for the sale of liquefaction units in the United States. (Kistenmacher, Tr. 884, 935). Linde BOC competed against CB&I for a peak-shaving project for Memphis Gas and a liquefaction project, that did not include an LNG tank, in Baltimore. (Kistenmacher, Tr. 886, 934).

3.674 Since 1994, Linde has never bid with CB&I for an LNG project. (Kistenmacher, Tr. 935). From January 1, 1994 to February 7, 2001, Linde never bid with PDM on an LNG project. (Kistenmacher, Tr. 936).

3.675 Linde was upset it lost the Memphis bid. (Kistenmacher, Tr. 899-900). Linde thought it had a fantastic process and should have won the bid "hands down". (Kistenmacher, Tr. 900).

3.676 For the Memphis Gas bid, Whessoe would not bid the entire LNG tank to Lotepro. (Kistenmacher, Tr. 895). Whessoe was reluctant to even get involved in the Memphis bid. (Kistenmacher, Tr. 939-40). However, Whessoe was willing to give Lotepro an engineering package for the tank that included all the detailed know-how about how to build the tank. (Kistenmacher, Tr. 895).

3.677 Lotepro "had difficulties" getting Whessoe to provide the engineering quote. (Kistenmacher, Tr. 940). Whessoe requested to be paid for its quote; Whessoe wanted to be reimbursed because it did not want to take the risk of bidding. (Kistenmacher, Tr. 940).

3.678 Despite Whessoe's offer, Lotepro still needed to search in the United States for a construction company to build the LNG tank. (Kistenmacher, Tr. 895-96). Lotepro ultimately incorporated an LNG tank construction quotation from Titan Constructors. (Kistenmacher, Tr. 896). Whessoe and Titan did not form a partnership. (Kistenmacher,

Tr. 901). Mr. Kistenmacher admits that the LNG tank price was high due to "the inexperience of those partners working together." (Kistenmacher, Tr. 901). "Whessoe didn't have a lot of experience in the U.S. and Titan didn't have a lot of experience in building cryogenic LNG tanks, and so they put their contingency in whatever on top of whichever and we ended up at this enormously large price." (Kistenmacher, Tr. 901).

3.679 Whessoe's engineering package accounted for $1 million of the $15 million tank price.; Titan Constructors construction/erection costs accounted for the remaining $14 million (Kistenmacher, Tr. 900, 938). Lotepro's total facility bid was $40 million. (Kistenmacher, Tr. 939).

3.680 Despite the fact that CB&I's tank bid was almost $5 million less than the Whessoe/Titan tank quotation, Lotepro still believed it won the Memphis project. (Kistenmacher, Tr. 899). Lotepro approached Memphis to discuss its evaluation method; Memphis used a different net present value calculation for the power consumption part of the bid. (Kistenmacher, Tr. 899).

3.681 Whessoe had no arrangement with Skanska at the time it submitted a quote to Lotepro for the engineering portion of the Memphis tank. (Kistenmacher, Tr. 939). Whessoe had no office in the United States at the time of the Memphis bid. (Kistenmacher, Tr. 939).

3.682 Mr. Kistenmacher believes TKK could probably, based on its experience, supply a good engineering package; Kistenmacher has concerns about TKK's ability to fabricate and build an LNG tank in the U.S. (Tr. 906:11-16.).

6. Patricia Outtrim

3.683 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 680). **[XXXXX XXXXX XXXXX XXXXX XXXXX**

XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX] (Outtrim, Tr. 681-82, 684).

3.684 **[XXXXX XXXX8120154308 Tw1654308uttrim, Tr. 681**

XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX] (Outtrim, Tr. 738).

3.688 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 733). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 734).

3.689 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXX]** (Outtrim, Tr. 691). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 690) (in camera). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 693).

3.690 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 737). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 787). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 787).

3.691 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 778). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 812-13).

3.692 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 702).

[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX] (Outtrim, Tr. 744). **[XXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 744). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 744). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 763).

3.693 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 746). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 746).

3.694 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 749). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 749).

3.695 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 753).

3.696 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXX]** (Outtrim, Tr. 795). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXX]** (Outtrim, Tr. 796-97). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Outtrim, Tr. 804-05).

IV LPG FINDINGS OF FACT

A. LPG BACKGROUND

1. LPG Tanks

4.1 The term LPG tanks refers to field erected tanks that are used to store liquefied petroleum gases at low temperatures of approximately minus 50 degrees Fahrenheit. (RX 79 at 3, ¶ 14; N. Kelley, Tr. 7096-97).

4.2 LPG means liquefied petroleum gas, which is an umbrella term of butanes and propanes. (Cutts, Tr. 2436). The purpose of an LPG terminal is to store liquid petroleum gases, such as propanes, butanes, and possibly some others, that would have been stripped out of natural gas and may be sold as independent gases. (G. Glenn, Tr. 4072-73). Anything that exists naturally as a gas can be liquefied. For example, liquefied propylene, propane, butene, butane, and isobutane can be liquefied. (N. Kelley, Tr. 7080-81).

4.3 Field erected tanks mean a tank that is too large to construct in the shop. (N. Kelley, Tr. 7080).

4.4 LPG tanks are also pressure vessels. (N. Kelley, Tr. 7080). API 650 tanks are field erected tanks with no more than 2 pounds of pressure. API 620 tanks, typical LPG tanks, are refrigerated tanks or more than 2 pounds of pressure. (N. Kelley, Tr. 7103).

4.5 LPG tanks store material brought in by ship and held before being sold from the facilities by truck. (Warren, Tr. 2280-81).

4.6 Typical owners of LPG terminals are owners of pipelines intended for distribution of propane, natural gas, or trucked to other outlets. (G. Glenn, Tr. 4073-74).

4.7 The refrigeration systems on the tanks are readjusted depending on the customer and chemicals to be stored within the tank. At any time, the tank may or may not be operating at its full refrigeration capacity. (N. Kelley, Tr. 7100-01).

2. The Manufacture Of LPG Tanks

4.8 Typically, LPG tanks are manufactured the same way as LNG tanks, but for storage at a lower temperature. (G. Glenn, Tr. 4073).

4.9 LPG tank construction usually takes 8 to 10 weeks of fabrication in the shop -- from buying steel, fabricating, and preparing to send out the pieces. Then, the tank construction process usually lasts 16 weeks in the field. Finally, the remaining site work and piping systems occur after the tank is completed. (N. Kelley, Tr. 7109-10).

B. COMPETITION IN THE LPG MARKET

1. LPG Market Overview

a. Demand for lpg tanks

4.10 Competition in the LPG market is extraordinarily thin, and the market is almost nonexistent. (Harris, Tr. 7281-82).

4.11 Since 1992, only 8 LPG tanks have been constructed in the United States. (Harris, Tr. 7284-85; RX 947).

4.12 From 1993 to the date of the acquisition, CB&I did not build an LPG tank. (Harris, Tr. 7286; RX 947).

4.13 PDM constructed 3 of the 4 LPG tanks in the United States between 1994 and 2001. The other LPG tank was constructed by American Tank & Vessel ("AT&V"). (Harris, Tr. 7285; RX 947).

b. Insignificance of the lpg market

4.14 Since the PDM acquisition, CB&I has only been involved in one LPG project in the United States. That project was valued at $1-3 million. (G. Glenn, Tr. 4088-89, 4156). Gerald Glenn, CB&I's CEO, ("Glenn") is not actively involved in the decision making process for LPG tanks. (G. Glenn, Tr. 4156).

4.15 Historically, the price of an LPG project is less than $5 million. Current LPG sales reflect even smaller values. The last two LPG projects, constructed by AT&V and CB&I, were $300,000 and $1.2-1.3 million respectively. (Harris, Tr. 7281; RX 947).

2. Entry Has Occurred And Is Occurring In The LPG Market

a. Entry in the U.S. market -- AT&V

i. AT&V experience building lpg tanks and related products

4.16 William T. Cutts ("Cutts") is Vice President and Regional Director of AT&V. (Cutts, Tr. 2320). Mr. Cutts graduated from the University of South Alabama in finance and economics. (Cutts, Tr. 2321).

4.17 AT&V is technically capable of building, and has built, field erected LPG tanks. (N. Kelley, Tr. 7088-89, 7130; Kamrath, Tr. 2261). AT&V has already developed the skills, procedures, and obtained the necessary equipment. (Cutts, Tr. 2495).

4.18 AT&V is a key player successfully competing in the LPG market for a number of years. Not only has AT&V constructed an LPG tank for Intercontinental Terminals Co. ("ITC") in 2000 (Cutts, Tr. 2334), but AT&V has also built the following LPG tanks: an LPG tank in 1996 for CMS Nomeco in Equatorial Guinea; and an LPG storage tank in 1994 for Project Services in Port of Houston, Texas. (CX 396 at 2; CX 397 at 1).

4.19 Moreover, AT&V has built other LPG products, such as 3 LPG sphere projects in 2001 alone. AT&V built 3 LPG spheres for Westlake in Sulphur, LA in June 2001 (CX 396 at 1); 2 LPG ASME pressure spheres for Black & Veatch in Reno, NV in January 2001 (CX 397 at 1); and 8 spheres for International Matex in Avondale, LA in January 2001 (CX 397 at 4). Further, AT&V has built numerous API 620 tanks and ASME spheres. (CX 396; CX 397).

4.20 Mr. Cutts himself has been a project manager for three different structures that hold propane or butane. (Cutts, Tr. 2436-37).

4.21 LPG customers commonly evaluate the substitution alternative of refrigerated storage (LPG tanks) versus pressure storage (pressure spheres). (Scorsone, Tr. 5170-71). As such, AT&V has built both refrigerated and pressurized spheres and tanks or a combination of both. (Cutts, Tr. at 2495-96; CX 396; CX 397).

4.22 LPG customers have expressed satisfaction to AT&V with the work that AT&V has performed, and AT&V intends to pursue LPG projects in the future. (Cutts, Tr. 2455-56; N. Kelley, Tr. 7130-31).

ii. ITC -- Deer Park, TX LPG project

(a) ITC background

4.23 ITC is in the bulk liquid storage business. ITC acts as a distributor for customers, receiving product by ship, barge, tank car, truck, and pipeline. (N. Kelley, Tr. 7076-77). ITC handles all kinds of chemicals, mainly petrochemicals, benzene, xylene, toluene, butadiene, butene, and propylene. (N. Kelley, Tr. 7077). ITC specializes in the storage and handling of chemicals. It has docking capabilities and the ability to transport such products. (N. Kelley, Tr. 7095-96).

4.24 Norman Kelley ("Kelley") is currently Vice-President of Engineering at ITC. He is responsible for capital budgets and engineering as well as the construction of new facilities and systems. (N. Kelley, Tr. 7077). Mr. Kelley has been VP of Engineering for 7-8 years. (N. Kelley, Tr. 7078). Mr. Kelley managed jobs and budgets and took over all engineering functions. (N. Kelley, Tr. 7078, 7079).

(b) ITC Deer Park facility

4.25 The ITC facility contains the following: seven similar semi-refrigerated spheres (three 35,000 barrel spheres and four 25,000 barrel spheres) and one 50,000 barrel low-pressure tank for butadiene, two full pressure spheres for isobutane, and three fully refrigerated propylene tanks. All of these structures were built by CB&I, with the exception of the 50,000 barrel low-pressure tank for butadiene that was built by PDM. (N. Kelley, Tr. 7088, 7097, 7099-7100, 7101, 7102).

4.26 In the past 4-5 years, ITC has purchased one LPG tank (2000) at its facility in Deer Park, Texas. This LPG tank contains butene-1, which is similar to butane or isobutane. Currently, the tank is being stored at 20 degrees. (N. Kelley, Tr. 7081-82).

4.27 ITC has 178 storage tanks. All but 10 are ambient temperature tanks. ITC has 24 bullets, or pressure vessels. With the exception of the shop-erected bullets, ITC's storage tanks are all field erected. (N. Kelley, Tr. 7093-94). ITC's bullets store propylene at ambient temperatures under pressure or refrigeration. Mr. Kelley is responsible for the procurement of ITC's pressure vessels as well. (N. Kelley, Tr. 7094).

(c) The bidding and qualification process

4.28 The Deer Park project in 2000 was part of a terminal facility. The rest of the facility was successfully subcontracted by ITC. (N. Kelley, Tr. 7092-93).

4.29 ITC always subcontracts all the work themselves. ITC does not bid projects turnkey. ITC provides a foundation, then the contractor builds the tank, ITC tests the tanks, and finally completes all the piping themselves. (N. Kelley, Tr. 7086-87).

4.30 Serving as the general contractor is cheaper by eliminating subcontractors' mark ups. (N. Kelley, Tr. 7087). By executing a project turnkey itself, LPG customers save 10-15 percent of the total cost of the project. (N. Kelley, Tr. 7116-17).

4.31 ITC does not engage in a formal prequalification process. ITC knows from experience which contractors can compete based on past experience and reputation in the industry. (N. Kelley, Tr. 7084-85).

4.32 Without experience, complete confidence in the contractor can overcome any hurdle. ITC has complete confidence in AT&V and its engineers. (N. Kelley, Tr. 7104-05). AT&V used experienced field crews and welders, and ITC had complete confidence in AT&V's contact person. (N. Kelley, Tr. 7106-07).

4.33 As part of the purchasing process, ITC bid the LPG tank project. ITC sent out a specification containing the scope of work, specifications, and boilerplate terms. ITC utilizes a minimum of three bidders, and depending on the scope of the project and classification of work, may send out 4-5 bid packages. The contractors review the specifications and send back bid proposals. ITC then evaluates these bids to determine if they comply with the project specifications and whether the contractor is capable of completing the job as desired. (N. Kelley, Tr. 7082-83).

4.34 On the Deer Park LPG project, CB&I, AT&V, and Matrix bid on the project. PDM was not a bidder. These companies were selected to bid on the project because they are "good reputable contractors that have the capability of building the tank." (N. Kelley, Tr. 7083-84).

4.35 AT&V won the ITC Deer Park LPG project. (N. Kelley, Tr. 7086).

(d) Customer reaction to AT&V performance and price

4.36 AT&V has built several tanks for ITC for about 8-10 years: some regular stainless steel tanks and some regular API 650 tanks. On those projects, AT&V performed well. These

previously built tanks by AT&V for ITC are similar to the LPG tank in 2000. (N. Kelley, Tr. 7085-86, 7107-08).

4.37

2000 Deer Park project (Matrix, AT&V and CB&I) give ITC the competition that it needs to obtain a competitive price. (N. Kelley, Tr. 7091).

4.61 Currently, ITC does not have plans to construct a future LPG tank, but hopes to require an additional LPG tank in the future. (N. Kelley, Tr. 7089-90). On a future LPG project, ITC would solicit bids from Matrix, AT&V, and CB&I. (N. Kelley, Tr. 7090). With CB&I, Matrix, and AT&V, ITC felt it had enough bidders on the Deer Park project. Mr. Kelley did not investigate other companies or even if Southwest Tank bid on the project. (N. Kelley, Tr. 7133-34).

4.62 LPG customers believe that the merger between CB&I

b. Competition on the ABB Lummus project

4.66 CB&I's last LPG project was awarded by ABB Lummus in Port Arthur, TX. The project included four ambient-temperature LPG spheres, one low-temperature LPG tank for butadiene and one flatbottom conventional storage tank. The total value of the project

ii. The Ferndale project

4.76 Texaco sought an LPG tank at its Ferndale import facility in Ferndale, Washington, some 80 miles from Seattle. Morse is located in Everett, Washington, some 40 miles from Seattle. Morse's facilities are approximately 85 miles from Ferndale. (Maw, Tr. 6549).

4.77 James Crider ("Crider") retired from Texaco in 1996. (Crider, Tr. 6704). Mr. Crider started working at the Ferndale facility in 1976, when it was owned by California Liquid Gas Corp. Texaco bought the facility in 1985. (Crider, Tr. 6704-05). Mr. Crider managed the Ferndale, Washington facility from 1984 to 1996. (Crider, Tr. 6705).

4.78 Texaco's Ferndale facility consisted of one 350,000 barrel refrigerated tank designed for the storage of propane. (Crider, Tr. 6705). In addition, the facility had a rail and truck rack, six 30,000 gallon high pressure storage tanks, two compressors, one 30,000 gallon storage tank, and a pipeline system. (Crider, Tr. 6705-06).

4.79 The Ferndale Expansion Project was pursued to import and/or export product faster. Most vessels carry from 30 to 45,000 metric tons of product. With a 350,000 barrel tank, a ship could not be completely filled. As a result, the ship had to be held until more product could be transported in off railcars. Product could be transported in via pipelines, but then it would have to be chilled before loaded aboard the ship. In order to compete long term, Texaco needed more storage capacity. (Crider, Tr. 6709).

4.80 The scope of the Ferndale LPG project was expanded to include additional site work. This site work would have increased the initial contract price of $4.3 million. The modification of the existing tank was $1-2 million. Further, change orders would have also increased the total price on the LPG portion of the tank. (Maw, Tr. 6683-85).

4.81 The Ferndale project cost approximately $7.3 million. Without the turn-around project, the LPG tank was just under $5 million. (Maw, Tr. 6560). The tank itself was about 190 feet in diameter. (Maw, Tr. 6575). The LPG tank was designed to store propane at negative 55 degrees Fahrenheit. (Maw, Tr. 6580; RX 675).

iii. The bidding process

4.82 Mr. Crider suggested to Texaco management in Tulsa that Morse be considered. He suggested Morse based on a professional relationship with a salesman at Morse who had been inquiring about potential business for years. When Jim Offutt from Texaco asked if anyone else should be considered on the Ferndale project, Mr. Crider suggested Morse based on its flatbottom tank experience. (Crider, Tr. 6710-11; Maw, Tr. 6549-50).

4.83 Morse was selected to bid on the Ferndale project by Texaco corporate management, not by Mr. Crider or any local Texaco employees in the Washington area. (Maw, Tr. 6550, 6558, 6560, 6673). The Texaco employees at the Ferndale facility were not involved in the bidding or procurement process for the Ferndale LPG project. (Crider, Tr. 6714).

4.84 Morse submitted a bid on the Ferndale project at Texaco's request. Morse bid against CB&I, PDM, and San Luis Tank (owned by Matrix). (Maw, Tr. 6549-50). Morse attended a meeting with Texaco management in Tulsa, Oklahoma. At this meeting, the parties discussed Morse's ability to complete the job on time. (RX 30). Morse and San Luis Tank were brought to Tulsa as the two finalists on the project. Texaco expressed the importance of the Ferndale project and its high-profile nature. (Maw, Tr. 6560-63).

4.85 Morse was awarded the Ferndale LPG project. (Maw, Tr. 6563).

iv. Morse successfully completes the project

4.86 Morse timely completed the Ferndale project, as planned, without any major defects, and no delays. (Crider, Tr. 6714, 6715-16; Maw, Tr. 6585). Texaco imposed time

constraints on the project by accelerating the delivery schedule due to increased demand and the need for additional storage as a result of an advanced maintenance schedule on the existing LPG tank. Morse was pressed by Texaco's conditions, but met those demands. (Crider, Tr. 6714-15).

4.87 The Ferndale LPG project was a "highly visible" tank project. (RX 30). On this project, Texaco and Mr. Crider were very satisfied with Morse's performance. In fact, once the tanks were placed into service, Texaco personnel from Tulsa to Houston expressed their satisfaction with Morse's performance. (Crider, Tr. 6716; Maw, Tr. 6585-86) As a result, Texaco awarded Morse additional work on-site. This work included the renovation of an existing 350,000 barrel LPG tank. (Maw, Tr. 6586; Crider, Tr. 6707, 6708).

4.88 Morse made $1,007,556 in profit on the Ferndale LPG project. (Maw, Tr. 6586, 6690; RX 677 at 1). This profit was greater than Morse anticipated because of its performance and the opportunity for change orders. Change orders allow an opportunity to increase margins. (Maw, Tr. 6587).

4.89 Mr. Maw was responsible as project manager in 1994 for bringing the Ferndale LPG project in at a profit. Whenever a project is not profitable, project managers are scrutinized. On the Ferndale project, Mr. Maw never heard from Morse's finance personnel that the project was not profitable. In fact, Morse's finance department always discussed the profitability of the Ferndale project. (Maw, Tr. 6691-92).

b. Specific entry barriers

i. Reputation

4.90 At the time the Ferndale LPG project was bid, Morse had never constructed an LPG tank. In fact, Morse told Texaco that it had no LPG experience. Nonetheless, Texaco asked Morse to bid the Ferndale project. (Maw, Tr. 6550-51).

4.91 Morse's never having built an LPG tank before was not a concern to Texaco because companies hire people to do the job. Morse's personnel sold the project. (Crider, Tr. 6713-14).

ii. Cost of bidding

4.92 On June 4, 1993, Texaco requested Morse to submit a bid on the Ferndale LPG project. (Maw, Tr. 6558; RX 681 at 1-3). Morse submitted a bid package. In so doing, Morse did not incur any additional expenses than it does on any other tank project. No additional salaried employees were hired to prepare the bid. (Maw, Tr. 6556-57).

iii. Engineering

4.93 As part of that bid package, Morse submitted a preliminary design. Duane McMahan ("McMahan"), a professional engineering consultant, was hired to perform the design work. Morse had less than one month to complete its bid package. (RX 130). Prior to

about $2,000 to develop by running and testing the coupon. Texaco approved Morse's procedures. (Maw, Tr. 6569-70). Morse then trained its welders individually on these procedures, requiring about one-half hour per person over the course of two days. (Maw, Tr. 6570-72).

4.95 Each welder on the Ferndale project received a certificate of completion, which expires 90 days after the welder has completed use of that process on the project. Therefore, the Ferndale welders would have had to complete another LPG tank within 90 days in order not to have to be re-qualified. (Maw, Tr. 6572).

v. Fabrication

4.96 Morse hired no additional salaried employees to fabricate the LPG tank. (Maw, Tr. 6557). Morse did not have to acquire special equipment, methods, personnel, or procedures for fabricating the LPG tank. (Maw, Tr. 6567).

4.97 Morse's fabrication shop is about 40,000 square feet, some 5 times smaller than CB&I's shop in Houston, Texas. (Maw, Tr. 6567-68; RX 676 at 1).

vi. Construction/field-erection

4.98 Morse hired no additional salaried employees to construct the LPG tank. (Maw, Tr. 6557, 6572). The tank is built in rings. Each ring is a layer of steel plates eight feet high connected by vertical welding seams. (Maw, Tr. 6574). The bottom floor of the tank contains heaters to prevent the soil from freezing around the tank, covered with insulation, sealed with a vapor barrier, and topped off with a steel floor. (Maw, Tr. 6575-76, 6580-81). The roof of the tank is constructed on the floor of the tank, then it is air-raised. (Maw, Tr. 6578). Finally, the tank is insulated and painted. (Maw, Tr. 6579-80; RX 676).

c. Morse did not have a cost advantage on the Ferndale lpg project

i. Morse experienced a labor cost disadvantage

4.99 Morse had a competitive cost disadvantage on the Ferndale project by adhering to the obligations under its union collective bargaining agreement, such as increased wages, benefits and subsistence costs to all field personnel. (Maw, Tr. 6563-64, 6566, 6680).

4.100 In 1994 and today, Morse uses union field crew personnel hired from a union hall. (Maw, Tr. 6552). Morse is obligated to hire such union employees pursuant to a collective bargaining agreement. This agreement does not give Morse a choice as to whether to use union or nonunion employees. (Maw, Tr. 6552).

4.101 This obligation to use union labor applies to any Morse project, whether or not in the local area. (Maw, Tr. 6552). In fact, Morse did not have the option of selecting its

Tr. 6566). This disadvantage amounted to about $180,000, which is about 3.5 percent of the project. (Maw, Tr. 6565-66).

4.109 In calculating this cost disadvantage, Morse estimated 180,000 man hours to perform the necessary work, utilizing the sum of $10/hour for the difference of union versus nonunion labor, for a total of a $180,000 cost difference. (Maw, Tr. 6566).

ii. Morse's location advantage, if any, was minimal and offset by Morse's labor disadvantage

4.110 Morse's transportation cost advantage on the Ferndale LPG project, if any, was minimal. (Maw, Tr. 6563-64). Morse's labor cost disadvantage more than offset any slight transportation cost advantage Morse realized on the Ferndale project. (Maw, Tr. 6566).

4.111 Morse made efforts to quantify this potential transportation cost advantage as a result of being 70-80 miles from the Ferndale job site. (Maw, Tr. 6564). Morse's cost advantage as a result of its location to the job site was about $70,000, which was a little over 1 percent of the approximately $5 million price of the LPG tank. (Maw, Tr. 6564-65).

4.112 In calculating this slight advantage, railroad transportation was a realistic alternative to truck and freight transportation. (Maw, Tr. 6682). Morse has experience in transporting materials by railroad on prior tank projects. (Maw, Tr. 6681). Rail transportation is more cost-effective than freight transportation. (Maw, Tr. 6606). The Ferndale site had a rail spur to make it easier to transport via rail. (Maw, Tr. 6681).

4.113 In addition, Texaco scheduled sufficient time on the project to utilize rail transportation as a practical alternative to freight transportation on the Ferndale project. (Maw, Tr. 6681-82).

4.114 As part of his normal job responsibilities, Mr. Maw does not call himself for rail rates. Instead, he calls someone with that responsibility and specialized knowledge and contacts

to do so. Mr. Maw then relies on that person's knowledge. (Maw, Tr. 6682-83). This

2. Customers Do Not Believe That Entry Barriers Exist In The LPG Market

a. Experience/expertise

4.120 The same skills are used to build an API 650 as an API 620 tank. All you have to do is read the code, find out the differences, use the right metal and welding rods, the right welding procedures, and anybody can build either tank. (N. Kelley, Tr. 7103).

4.121 A tank supplier would be considered to bid on an ITC project if it had built an API 620 tank. But, such cryogenic tank experience is not required. (N. Kelley, Tr. 7117-18). If a company had never built a cryogenic tank before, but had experienced personnel who had, then that company would get a chance to prove it could build the tank. (N. Kelley, Tr. 7131-32).

4.122 Tank construction is simply welding shell plates together and putting a roof on it. (N. Kelley, Tr. 7086).

4.123 Tank companies are really the people that you deal with, not the number of years in business. The people you deal with everyday are the company, the ones to believe. (N. Kelley, Tr. 7108-09).

4.124 Decisions to sole source are made by the client -- often times the costs of prequalfiying and bidding the project are outweighed by the savings of being able to move forward with the project. (Warren, Tr. 2309-11).

b. Materials discounts

4.125 No customers or competitors complain that CB&I receives volume discounts for steel or purchases directly from the steel mill. (N. Kelley, Tr. 7122). Labor prices are where there is a lot of difference on tank bids, not steel. (N. Kelley, Tr. 7122-23).

c. Safety

4.126 The safety risks with LPG tanks are no different then LNG tanks. In fact, the difference is in the temperature at which the product is stored. (N. Kelley, Tr. 7132).

d. Equipment

4.127 Generally, the same type of equipment is needed to construct an LPG tank as any field-erected tank -- welding machines, cranes, and rigging equipment. Further, the same people that build API 650 tanks also build API 620 tanks. If a company has the capability to build a standard API 650 or standard API 620 tank, they would also have the capability to build a field erected LPG tank. (N. Kelley, Tr. 7091-92).

e. Engineering

4.128 AT&V performed the engineering design of the ITC Deer Park LPG tank in-house, without the help of consultants. (N. Kelley, Tr. 7120).

f. CB&I cost disadvantages

4.129 CB&I has to cut its jobs to the very minimum because they have so much overhead and so many engineers that it is hard for them to be competitive on all jobs. (N. Kelley, Tr. 7122).

g. Local advantages

4.130 A local contractor does not hold a competitive advantage as compared to another domestic supplier. For instance, AT&V is ITC's most competitive supplier and it is located in Alabama, and that includes shipping steel plates from Alabama to Texas. (N. Kelley, Tr. 7121).

4.131 Tank construction is only guaranteed for one year after completion, so using a local contractor is not a preference. (N. Kelley, Tr. 7114-15).

h. CB&I problems and mistakes in the lpg market

4.132 CB&I notoriously did not meet their schedules on time for LPG customers. AT&V's scheduled delivery is much more accurate than CB&I. (Cutts, Tr. 2510-11). In one instance, CB&I was significantly late on multiple API 650 tanks for ITC where scheduling and timing were very important. (Cutts, Tr. 2512).

4.133 In the industry, CB&I has a good reputation for innovation, but over the years they make mistakes just like everybody else. They do not always perform like would like to or on time. (N. Kelley, Tr. 7124).

4.134 Over time, CB&I has had flaws. For example, CB&I misdesigned vents on some 160,000 barrel tanks for ITC. To correct the mistakes, ITC used a small, local tank roofing company that did a great job fixing CB&I's antiquated designs. (N. Kelley, Tr. 7124). Moreover, CB&I used the wrong steel on the propylene tank. (N. Kelley, Tr. 7125).

4.135 Mistakes on other projects can be a selling point by demonstrating how readily and capably the company corrects its mistakes and handles the situation. An error on a project can really become a benefit. (Cutts, Tr. 2506-10).

4.136 Despite a supplier's flaws, LPG customers would be willing to accept bids in the future once the problems have been corrected. (N. Kelley, Tr. 7126-27).

i. PDM problems and mistakes in the lpg market

4.137 -

4.138 On the Sea-3 LPG project, there was a $400,000 piece of equipment that was left out of the estimate, which had ramifications in terms of the cost of the equipment and the attenuated associated construction costs. (Scorsone, Tr. 4826).

4.139 In addition, PDM had very poor performance by its engineering group, which resulted in late procurement of equipment and materials thereby extending the project's schedule and driving up costs in the field. (Scorsone, Tr. 4826).

4.140 Finally, PDM had a difficult time with labor stability in the field of almost 300 percent

4.145 Fluor does not build LPG tanks, but provides supervision and construction management services. (Warren, Tr. 2276, 2279-80). Fluor was responsible for preliminary design and management of tanks and all associated control systems on the Sea-3 Newington, NH (1998) and Tampa, FL (2000) LPG projects. (Warren, Tr. 2275-76, 2298). Fluor's prequalification process was not utilized on the Sea-3 projects because CB&I and PDM were already pre-qualified. (Warren, Tr. 2281).

4.146 On the Tampa project, Ms. Warren was involved in coordinating Fluor's technical review of the bid proposals. (Warren, Tr. 2276-77, 2278-79).

4.147 On both Sea-3 projects, CB&I and PDM bid -- with PDM winning and constructing both projects based on a lower price (roughly 4% lower). (Warren, Tr. 2298-2300, 2302-04, 2305, 2306).

b. Amy Warren lacks knowledge of the current LPG market

4.148 Ms. Warren's current knowledge of field-erected LPG tanks is based on her involvement in the bidding process for Sea-3 in 1998, the last time Ms. Warren had any involvement in the procurement of an LPG tank. (Warren, Tr. 2284, 2318).

4.149 On the Sea-3 project, the client for both projects was Sea-3 and not Fluor. (Warren, Tr. 2275, 2280). Sea-3 was actually responsible for selecting a contractor to build the LPG tanks. (Warren, Tr. 2316).

4.150 The individual responsible for selecting an LPG contractor was Bill Cornell, the president of Sea-3, not Ms. Warren or Fluor. (Warren, Tr. 2316, 2317). At Fluor, the person responsible for determining which companies would bid on the Sea-3 projects was George King, not Ms. Warren. (Warren, Tr. 2317-18).

4.151

ITC 25 years ago. Mr. Kelley managed jobs and budgets and took over all engineering functions. (N. Kelley, Tr. 7078, 7079).

4.160 During his 25 years at ITC, Mr. Kelley has procured LPG tanks for over 23 of those 25 years. Tank procurement is Mr. Kelley's area of responsibility, including ITC's LPG tank project at its Deer Park, TX facility in 2000. (N. Kelley, Tr. 7079-80).

THE FOLLOWING IS SECTION FIVE

I. LIN/LOX FINDINGS OF FACT

A. LIN/LOX/LAR BACKGROUND

1. Definition And Characteristics Of LIN/LOX/LAR Tanks

2. LIN/LOX/LAR Tanks Are Used For Air Separation Facilities

5.6 LIN/LOX/LAR tanks are most commonly incorporated into the infrastructure of a functioning air separation facility. There are no viable substitutes for storing liquid oxygen or nitrogen produced by such a plant. (Hilgar, Tr. 1386).

5.7 An air separation plant is a plant that liquefies ambient air, then distills the air into its component parts/ The component parts of air are the industrial gases oxygen, nitrogen, and argon. The liquefied gases are later cooled and stored in cryogenic storage tanks. Subsequently, the gases are delivered to the marketplace either in a gaseous form or liquid form. (Kamrath Tr. 1980); (V. Kelley Tr. 4592); (Kistenmacher Tr. 824-25).

5.8 When air is distilled into component parts it is cooled to temperatures in the order of minus 300 degrees Fahrenheit. Once the ambient air is cooled, pressure is used as a driving force to separate the different components that comprise air. (Kistenmacher Tr. 824-26).

5.9 The cost to design and fabricate LIN/LOX tanks typically represents five to ten percent of the total cost of an air separation facility. (Hilgar, Tr. 1507). Construction of an air separation facility may cost $18 million. LIN/LOX/LAR tanks used at such a facility may cost from $1 to $1.5 million. (Kistenmacher Tr. 836); (Hilgar, Tr. 1507-08).

3. Design And Construction Process

5.10 CB&I uses the same construction steps when it builds LIN/LOX tanks as it does when it builds any ambient-temperature flat-bottom tank. (Scorsone, Tr. 4885).

5.11 First, the project is engineered and drawings are developed in connection with the procurement of materials. Second, materials including the raw steel and steel components are procured. Third, steel materials are fabricated in fabrication shops. Next, tool and equipment lists are created and everything including the fabricated

materials are shipped to the construction site. The structure is then erected on the project site and tested. (Scorsone, Tr. 4885-86).

a. Engineering

5.12 The engineering phase involves the performance of calculations and an analysis to determine the size and shapes of the various components to be placed in the structure. This phase entails writing the specifications for the various materials and welding processes that will be used. Drawings are created to be used by fabrication shops, construction crews, and subcontractors. (Scorsone, Tr. 4886-87).

5.13 CB&I does not have an engineering staff that solely works on LIN/LOX projects. CB&I uses its engineers across several product lines. Engineers who design flat-bottom tanks also have the capability to design LIN/LOX tanks. CB&I's engineers are located in Pittsburgh, Pennsylvania; Plainfield, Illinois; Houston, Texas; Canada, the Middle East, Philippines, and Australia. (Scorsone, Tr. 4887-88).

b. Procurement

5.14 The bill of materials contains a list of materials that are sent to the procurement group. The procurement group then procures these materials from a wide variety of vendors. (Scorsone, Tr. 4889-90).

c. Fabrication

5.15 The metal materials are fabricated in a fabrication shop by the same personnel and using the same equipment that is used to fabricate other types of tanks. (Scorsone, Tr. 4885; 4892-93).

d. Field erection

5.16 The field erection process for an industrial tank involves: (1) receiving the material from the fabrication source and the steel mills; (2) establishing a site office; (3) establishing a

5.21 CB&I's CEO does not generally become involved in the LIN/LOX portion of CB&I's business due to the small size and infrequency of the projects. (Glenn, Tr. 4155). CB&I does not have any salespersons dedicated to the LIN/LOX market. (Scorsone, Tr. 5017).

3. Three Competitors Have Entered The LIN/LOX/LAR Market

5.22 CB&I's believes that it competes for LIN/LOX projects against Matrix, AT&V, and CB&T. (Scorsone, Tr. 4849-50) (state of mind).

5.23 Graver was a long-time competitor in the LIN/LOX market, however Graver was acquired by ITEQ. (Patterson, Tr. 458). CB&I's state of mind is that Graver/ITEQ went out of business due to poor management by ITEQ and an overall lack of demand in the market. (Scorsone, Tr. 4876-77) (state of mind). Moreover, the view that Graver, after it was acquired by ITEQ, exited the market due to deteriorating performance is also held by Air Liquide. (Kamrath, Tr. 1988-1989; 2004-2005).

5.24 CB&I believes that AT&V and CB&T have hired experienced personnel that previously worked for Brown Minneapolis Tank and Graver Tank. As a result, CB&I perceives that Brown Minneapolis Tank's and Graver Tank's "know-how" moved on to AT&V and CB&T. Matrix is another recent player in the LIN LOX market, so there are three competitors now in addition to CB&I. (RX 208) (Scorsone, Tr. 5029-30) (state of mind).

5.25 Some of the companies that CB&I perceives as competitors in the LIN/LOX market today are new entrants and were not competitors until shortly before the Acquisition. (Scorsone, Tr. 4877) (state of mind). Scorsone's perceptions of the LIN/LOX market have changed over time due to entry that has occurred from Matrix, AT&V, and CB&T. (Scorsone, Tr. 4878) (state of mind).

a. AT&V

i. Began efforts to enter the LIN/LOX market in the late 1990s

5.26 AT&V is a tank contractor which had primarily constructed ambient-temperature, flat-bottom storage tanks. (Cutts, Tr. 2458-59). Cryogenic tank sales used to make up 0 percent of AT&V's sales, today they have increased substantially to 3-10 percent of its total sales. (Cutts, Tr. 2393).

5.27 AT&V spent approximately $100,000 on research and development that went into AT&V's efforts to build cryogenic tanks. (Cutts, Tr. 2336; 2405-06).

5.28 Despite never having estimated a LIN/LOX tank before, AT&V has produced estimates that were very accurate. In order to provide an estimate for LIN/LOX projects, AT&V created its own design for LIN/LOX tanks. (Cutts, Tr. 2519-21).

5.29 Specifically, AT&V has d

never constructed a LIN/LOX tank prior being awarded the project in 2000 by BOC. (Cutts, Tr. 2501). AT&V successfully completed construction of one LIN and one LOX tank in Midland, North Carolina. (Cutts, Tr. 2418-19; 2321-22; 2330; 2436).

5.32 After the construction of the Midland project, BOC told AT&V that their "quality was

United States. AT&V has submitted budget pricing for approximately six customers and has formally been pre-qualified as a bidder by one customer and informally pre-qualified by several others. (Cutts, Tr. 2452-53).

5.36 AT&V believes it is making a long-term investment in entering the LIN/LOX market and did not expect to recoup all of its expenditures on its first LIN/LOX project. AT&V believes that future work from BOC will enable them to recoup their initial expenditures in the LIN/LOX market. (Cutts, Tr. 2429-30). AT&V has not had a net income loss on any of its cryogenic projects to date. (Cutts, Tr. 2462).

5.37 AT&V believes that BOC has spoken to other LIN/LOX tank customers and recommended AT&V's construction abilities. As a result of this recommendation, AT&V believes that at least one customer has accepted a bid on a LIN/LOX project from AT&V. (Cutts, Tr. 2453-54).

iv. AT&V believes it has competitive advantages over CB&I

5.38 Although AT&V believes that CB&I's reputation exceeds AT&V's reputation and marketing abilities, AT&V believes that in a "detailed battle of the facts" AT&V would come out in front. AT&V believes that its quality in construction, as illustrated by AT&V's extremely low x-ray weld rejection rate, is far superior to CB&I and other tank vendors in the industry. (Cutts, Tr. 2491-93).

5.39 AT&V believes it has the best project completion schedule in the industry due to the fact that last year they completed 163 of 164 projects on time. AT&V believes that its scheduling is much better than CB&I on non-cryogenic applications. AT&V believes that whenever schedule is a critical component of a project, it can and will deliver the project on time (Cutts, Tr. 2510-12).

5.40 AT&V believes it has an advantage over CB&I and can sell LIN/LOX tanks at a lower price. (Cutts, Tr. 2572). As has been demonstrated on recent projects, AT&V has offered pricing that "is below [CB&I's] flat cost." (RX 273).

v. Past difficulties are positive selling points for AT&V

5.41 AT&V believes that its past difficulties on a few projects, such as pressure spheres, are actually positive selling points for the company. AT&V encountered a few difficulties on a pressure sphere project for Black & Veatch but was able to correct the problems and deliver a successful product. AT&V believes these examples show AT&V's strength as a company, not its weaknesses. (Cutts, Tr. 2508-10).

5.42 AT&V received very high ratings on the Black & Vetch pressure sphere project and has used that project as a reference for future projects. There were numerous issues that occurred on the project, but Cutts believes that AT&V ultimately performed well since Black & Vetch gave AT&V many other projects after its completion of the Westlake project. (Cutts, Tr. 2535-50).

b. Matrix

i. Matrix has entered the LIN/LOX market

5.43 Matrix has hired employees who have experience building cryogenic storage tanks. Specifically, a project manager, foreman, and a crew. (Newmeister, Tr. 2188). This has allowed Matrix to increase customer confidence in its qualifications and demonstrate to buyers that it can met the requisite API specifications. (Newmeister, Tr. 2189-90).

5.44 Matrix has undertaken numerous steps to enter the LIN/LOX market. For example, Matrix has found and hired experienced employees, tested materials, established welding procedures, and created engineering standards. (Newmeister, Tr. 2213-14).

ii. Matrix began constructing LIN/LOX tanks in 1997

5.45 Matrix designed and constructed its first cryogenic storage vessel for Praxair in 1997. Praxair awarded Matrix a liquid oxygen and liquid nitrogen "cluster tank" project over CB&I. The tanks were built in Rossford, Ohio. Matrix finished the work on time and to the satisfaction of Praxair. (Newmeister, Tr. 2174-75).

5.46 After Matrix's successful completion of its first cryogenic tanks, Matrix sought additional opportunities in the cryogenic market. In 1998, Praxair again hired Matrix to build a LIN/LOX tank in Delaware City, Delaware. Matrix was awarded the Delaware City tanks in 1998 over CB&I and completed the project on time. Praxair was again satisfied with Matrix's performance. (Newmeister, Tr. 2176-77).

iii. Matrix successfully constructed four LIN/LOX tanks and other types of cryogenic tanks

5.47 Matrix has successfully constructed four LIN/LOX tanks in the United States. (Newmeister, Tr. 2213-14).

5.48 Matrix built two LIN/LOX tanks for Praxair in Delaware City, Delaware, in 1998. (Newmeister, Tr. 2173; 2176-77). Matrix was awarded the Delaware City LIN/LOX project in 1998 over

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Air Products. Air Products awarded the tank to Matrix over CB&I and PDM, despite the fact that Matrix had never built a tank for Air Products before. (Newmeister, Tr. 2173-74).

iv. Matrix is a serious competitor in the LIN/LOX market

5.51 Matrix is a competitive force in the LIN/LOX market and has current work experience with Praxair and Air Products. With experience and good recommendations from its customers Matrix believes it can become an even stronger competitor in the market. (Newmeister, Tr. 2166-67).

5.52 Matrix believes that the Acquisition of PDM has given it opportunities in the market for low temperature and cryogenic storage tanks. (Newmeister, Tr. 2182-83). Matrix currently has three bids outstanding on LIN/LOX tanks for two different customers. (Newmeister, Tr. 2178).

v. LIN/LOX customers believe Matrix is a viable competitor

5.53 Air Liquide has solicited bids from Matrix on at least two projects, Freeport and Longview, Texas. Air Liquide is unaware of any failure or problems in LIN/LOX tanks constructed by Matrix. (Kamrath, Tr. 2005-06).

5.54 Air Products has informed CB&I that they consider Matrix to be "a player in the [LIN/LOX] market" and certainly consider them to be a "viable competitor." (RX 273).

5.55 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXXX XXXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]**

c. Chattanooga Boiler

i. CB&T is an experienced tank construction company capable to building LIN/LOX tanks

5.56 CB&T has constructed tanks and structures significantly more difficult to build than LIN/LOX tanks. CB&T estimates that some of the stru

office is also positioned to promote CB&T in the Houston area. (Stetzler, Tr. 6318-19; RX 273). Specifically, Rex Robinson was a senior Graver project manager with experience in building LIN/LOX tanks and dealing with LIN/LOX tank customers. (Stetzler, Tr. 6317-19; *see also* RX 273). Robinson now works for CB&T as Manager of Texas Operations. (Stetzler, Tr. 6320). Robinson's past experience as a LIN/LOX project manager and familiarity with LIN/LOX sales has enabled CB&T to use much of Graver's experience with LIN/LOX tanks in order to promote CB&T's experience in the

5.64 CB&T has bonding capacity which exceeds tens of millions of dollars and is more than adequate to bond and build field-erected LIN/LOX tanks.. (Stetzler, Tr. 6385-87; 6391).

5.65 CB&T's employees are knowledgeable about how to build tanks to withstand low temperatures and involve insulation. (Stetzler, Tr. 6388-90). CB&T has sufficient equipment and technical expertise to compete for jobs involving field-erected LIN/LOX tanks, vacuum chambers, or field-erected LPG tanks. (Stetzler, Tr. 6393).

iii. CB&T believes that it has competitive advantages over CB&I

5.66 CB&T has superior quality crews with productivity as good as or better than most of CB&T's competitors. Reasons for this conclusion include CB&T's high retention rate, good safety record, good quality record, and reputation. (Stetzler, Tr. 6324:20-6325:17). CB&T competes with CB&I for industry safety awards and has beaten CB&I in several different years. (Stetzler, Tr. 6329).

5.67 CB&T has competitive advantages over CB&I. CB&T is a smaller company better able to respond to certain jobs, CB&T has a lower overhead structure, and CB&T can respond to immediate market conditions more quickly and efficiently than CB&I. Moreover, CB&T may be able to purchase materials closer to market price than CB&I. (Stetzler, Tr. 6369). Further, CB&T has more experienced personnel than CB&I. (Stetzler, Tr. 6370-73).

iv. CB&T has been actively competing for LIN/LOX projects

5.68 CB&T believes it has new opportunities created by CB&I's Acquisition of PDM. CB&T plans to take advantage of these opportunities. For example, PDM was removed from customers' suppliers lists and that gives a new company, such as CB&T, the opportunity to take PDM's place. (Stetzler, Tr. 6367-68).

5.69 CB&T bid on LIN/LOX tanks for BOC in Midland, North Carolina, because CB&T is interested in winning contracts in the LIN/LOX market and it saw a potential opportunity in light of the Acquisition. (Stetzler, Tr. 6347; 6350-51; 6368).

5.70 CB&T also submitted a budgetary proposal to MG for a field-erected LIN/LOX tmar39,1

5.74 CB&I first became aware that AT&V had entered the LIN/LOX market and was a competitor when AT&V was awarded a LIN/LOX project by BOC in Midland, North Carolina. (Scorsone, Tr. 4878) (state of mind).

5.75 Matrix has already performed well for LIN/LOX customers and is definitely "a player in the [LIN/LOX] market." (RX 273).

5. CB&I Has Lost All Three Of The Post-Acquisition Projects It Has Bid Against To AT&V

5.76 CB&I attempted to compete against AT&V on three of the competitively bid projects and lost to AT&V each time. CB&I has yet to win a LIN/LOX project when AT&V was a competitor bidding on the project. Every time CB&I has gone up against AT&V for a LIN/LOX project, it has lost. (Scorsone, Tr. 5018).

5.77 Since CB&I's Acquisition of PDM in 2001, only five LIN/LOX projects have been awarded by LIN/LOX customers. Only two of those projects have been awarded to CB&I. (Scorsone, Tr. 5015-16). The five LIN/LOX projects that have been awarded since the Acquisition are Midland, North Carolina (BOC), Hillsboro, Oregon (BOC), Freeport, Texas (Air Liquide), New Johnsonville, Tenness263r'ers. O]3lndrs.riesw Joort Tc 0

5.80 Air Liquide, BOC, MG Indust

5.85 Linde is a sophisticated customer, although not currently active in the LIN/LOX market. Linde is a U.S. subsidiary of a large German corporation and has extensive experience with LIN/LOX tanks in the U.S. and overseas. (*See* Kistenmacher, Tr. 822-23; 830).

5.86 Praxair is a sophisticated customer. At one time, Praxair owned CB&I in its entirety. (*See* Glenn, Tr. 4062-63). Praxair negotiated a sole-source partnership agreement with PDM which was renewed by CB&I prior to the Acquisition. (*See* Scorsone, Tr. 5018-19).

i. BOC

(a) Midland, North Carolina

5.87 In 2000, BOC solicited bids for the Midland, North Carolina, LIN/LOX project from PDM, CB&I, AT&V and Chattanooga Boiler & Tank. (V. Kelley, Tr. 4598; Scorsone, Tr. 5024-25; RX 273). BOC awarded the contract for both tanks at Midland to AT&V. (V. Kelley, Tr. 4599; Scorsone, Tr. 5024; RX 273).

5.88 The BOC Midland project was a gas supply site for a Corning plant located adjacent to the BOC property. The Midland site also produced liquid gases for sale to the open market. The project included the construction of one LIN and one LOX tank that are typical in terms of the size of tanks that BOC usually purchases. (V. Kelley, Tr. 4596-97).

5.89 There were many other components to the Midland project other than the LIN/LOX tanks. (V. Kelley, Tr. 4633). The LIN/LOX tanks on the Midland project represented approximately 3 percent of the total cost of the entire project. (V. Kelley, Tr. 4665). The Midland facility was constructed in 20-22 months and the LIN/LOX tanks were built in approximately 12 months. (V. Kelley, Tr. 4633-34).

(1) Pre-qualification and bid process

5.90 Victor Kelley was the manager of construction contracts for the Midland project. Kelley directed the project manager, Scott Colby, to solicit bids for the LIN/LOX tanks. (V. Kelley, Tr. 4597-98).

5.91 BOC performed its due diligence for all tank suppliers in order to ensure that the provider they selected was a safe company. (V. Kelley, Tr. 5282). Scott Colby led the team in charge of pre-qualifying AT&V as a tank supplier for BOC. (V. Kelley, Tr. 5282-83). BOC's technical team on the Midland project took a concerted effort to interview AT&V and determined that AT&V was capable of constructing the project. (V. Kelley, Tr. 4666-67). There is no one factor that would cause BOC to reject a potential tank supplier, BOC collected all of the information and reviewed each piece when making a decision on a new supplier. (V. Kelley, Tr. 4661-62).

5.92 BOC solicited bids for the Midland LIN/LOX tanks in 2000 from PDM, CB&I, AT&V, and Chattanooga Boiler & Tank. (V. Kelley, Tr. 4598-99). BOC used historical records in order to select the companies to solicit bids from. (V. Kelley, Tr. 4598-98).

5.93 When soliciting bids for the Midland project, BOC determined who it would solicit bids from by looking at its historical records. Those companies that had worked for BOC recently were not required to fill out any additional paperwork. Those companies that had not worked for BOC recently were required to complete a standard AIA (American Institute of Architects) form (V. Kelley, Tr. 4604-06). BOC uses the AIA form to determine if a company is financially stable. (V. Kelley, Tr. 4629-30).

5.94 BOC believes that it can get a competitive price for a LIN/LOX tank with two bidders. (V. Kelley, Tr. 5285). It does not want as many as practical because it would flood the

Kelley, Tr. 5284). The plate buckling that occurred on the Midland project is something that can easily happen on a

project, so AT&V does not believe there were any problems with its piping. (Cutts, Tr. 2553-55).

5.104 AT&V believes that the piping the BOC project was flawlessly performed. There were a few problems with the insulation that BOC installed that had to be corrected by AT&V. (Cutts, Tr. 2529-30).

5.105 At the conclusion of the project, BOC did not tell AT&V that there were any problems

5.110 BOC "was satisfied with both [AT&V's] execution of the contract and the execution of their schedule" and "was satisfied with the approach that they took and to meeting the various time lines that they had stated." (V. Kelley, Tr. 5288).

5.111 BOC did not make any negative comments regarding the equipment or materials used by AT&V, or the supervision on the project. (V. Kelley, Tr. 5288-89). AT&V "adequately supervised the job." (V. Kelley, Tr. 5289). AT&V used its traditional site supervision of one field supervisor, one construction manager, one pusher, and one foreman on site at the BOC Midland project. (Cutts, Tr. 2513-14). BOC does not have any negative comments with respect to AT&V's on-site supervision. BOC believes that AT&V adequately supervised the project. (V. Kelley, Tr. 5269).

5.112 AT&V's estimates on the BOC project fell within a few percent of its actual costs on the project. (Cutts, Tr. 2517-18).

(4) BOC would and is using AT&V again

5.113 Based upon AT&V's performance on the Midland project, BOC would hire AT&V again on its next LIN/LOX project. (V. Kelley, Tr. 4601). BOC would certainly use AT&V again and testified that "[i]n terms of another job if BOC was going to procure a LIN/LOX tank, certainly they [AT&V] have distinguished themselves as being capable LIN/LOX tank providers." (V. Kelley, Tr. 5281-82). BOC did not place any conditions or restrictions on its opinion that it would certainly use AT&V again. (V. Kelley, Tr. 5292-93).

5.114 BOC Process Plant provided a reference for AT&V to Tony Bradshaw from BOC Edwards and "stated that [BOC] would use AT&V again." (V. Kelley, Tr. 5289-90).

5.115 AT&V believes that they were awarded a LIN/LOX project by Air Liquide as a result of BOC's satisfactory comments. (Cutts, Tr. 2523). BOC has indicated a desire to work with AT&V in the future and has used BOC as a reference. AT&V believes that BOC's reference has aided AT&V in securing additional LIN/LOX projects. (Cutts, Tr. 2552-53).

(b) Hillsboro, Oregon

(1) BOC Edwards division solicited pricing for a project in Oregon

5.116 BOC Edwards solicited pricing for a LIN tank in Hillsboro, Oregon, and awarded the project to AT&V. (V. Kelley, Tr. 5291-92; RX 813). BOC Edwards Division, a branch of BOC that works in the electronics industry, solicited bids for a LIN tank in Hillsboro, Oregon. (V. Kelley, Tr. 4601). CB&I submitted budget pricing for a BOC LIN/LOX project in Hillsboro, Oregon. (Scorsone, Tr. 5031).

5.117 The LIN tank for BOC Edwards is planned to be constructed in Hillsboro, Oregon, and will be of similar size to the tanks AT&V previously built in Midland. The Edwards division believed they could achieve a cost savings by duplicating the engineering from the Midland LIN tank. (V. Kelley, Tr. 4602-03).

(2) BOC Edwards awarded the project to AT&V

5.118 BOC Edwards has selected AT&V to construct a LIN tank in Hillsboro, Oregon. (V. Kelley, Tr. 5291-92; RX 813). BOC Edwards signed a letter of intent with AT&V for the construction of a LIN tank in Hillsboro, Oregon. (V. Kelley, Tr. 4603-04; RX 813). BOC Edwards signed the letter of intent with AT&V for the Hillsboro LIN tank because "AT&V had the low bid." (V. Kelley, Tr. 5292; RX 813).

5.119 AT&V believes that BOC will request that AT&V perform the Hillsboro project on more of a turnkey basis because BOC managed certain aspects of the Midland project which had problems or caused delays. (Cutts, Tr. 2407).

5.120 CB&I never had an opportunity to submit a firm fixed bid to BOC for the Hillsboro job because BOC decided to award the project to AT&V. (Scorsone, Tr. 5031). CB&I believes that CB&I was not solicited additional pricing for the Hillsboro BOC project because AT&V and BOC negotiated some type of deal between themselves. (Scorsone, Tr. 5032) (state of mind).

5.121 Since AT&V has been awarded a second LIN/LOX tanks by BOC, CB&I believes that BOC was pleased with AT&V's performance on the first project. (Scorsone, Tr. 5032) (state of mind).

ii. Air Liquide

(a) Freeport, Texas

5.122 In 2001, Air Liquide solicited bids for a LIN/LOX project in Freeport, Texas. AT&V, CB&I, Matrix and BSL bid on the project. (Cutts, Tr. 2569; Scorsone, Tr. 5032; RX 627 at 2). AT&V was awarded the project. (Kamrath, Tr. 2006; Scorsone, Tr. 5017).

(1) Air Liquide awarded AT&V the project because they were the low bidder

5.123 Air Liquide used the competition between the bidders on the Freeport project in order to apply pressure to the tank companies and receive better pricing. (Kamrath, Tr. 1993; RX 627 at 2).

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5.125 **[XXXXX XXXXX]**

(2) Air Liquide awarded the project to AT&V as a result of their earlier success with BOC

5.126 Air Liquide told AT&V that they would not be awarded any work unless AT&V could establish a track record in the construction of LIN/LOX tanks. (Cutts, Tr. 2354). Air Liquide told AT&V that they would need to construct one LIN/LOX tank in order to be considered by Air Liquide for a LIN/LOX project. (Cutts, Tr. 2466).

5.127 Air Liquide specifically looked at AT&V's first project with BOC and told AT&V that if they successfully constructed the LIN/LOX tanks for BOC, they would be considered by Air Liquide for future projects. AT&V believes their success on the BOC Midland project lead to them being awarded the Freeport project by Air Liquide. (Cutts, Tr. 2467-68; 2523).

(3) CB&I lost project to AT&V despite lowering its price to 0% margin

5.128 CB&I originally bid the Freeport, Texas project at a 2% profit margin. (Scorsone, Tr. 5032-33). Scorsone received an email from Steve Knott indicating that CB&I would need to lower its price in order to have a chance at being awarded the project. (Scorsone, Tr. 5033-34) (RX 627 at 2).

5.129 CB&I was told by Air Liquide that it was in a "competitive situation" on the Freeport project and was competing against three other bidders for the project. (RX 627 at 2). Air Liquide was "attempting to soften [CB&I] up in order to extract better pricing" by telling CB&I about the other tank vendors competing for the project as well as proving CB&I with "negative feedback" about some problems that Air Liquide had with CB&I's recent performance on another project for Air Liquide. (RX 627 at 2).

5.130 Scorsone was informed that "in order to get both jobs, it may be necessary to go to 0% margin" on the project. (RX 627 at 2). As a result of the email, Scorsone authorized Knott to drop the margin on the Freeport project to 0%. (Scorsone, Tr. 5033-35) (RX 627 at 2). Despite going to a 0% margin on the Freeport project, CB&I lost the job to AT&V. (Scorsone, Tr. 5034-35).

(4) Air Liquide and AT&V business dispute

5.131 CB&I learned that Air Liquide is dissatisfied with AT&V's performance on the Freeport project thus far. (Scorsone, Tr. 5036) (state of mind). Scorsone believes that AT&V is dealing with the contractual issues with Air Liquide and may in the end decide that this is a project they do not want to pursue. (Scorsone, Tr. 5038) (state of mind).

5.132 Business disputes on tank projects are common practice in this industry. (Scorsone, Tr. 4834). Often, business disputes associated with field-erected tanks stem from the interpretation of specifications, schedule delays, and the contractor's performance. (Scorsone, Tr. 4834-35). Misunderstandings over specifications can also be the source of a business dispute during projects. (Scorsone, Tr. 4835).

5.133 It is not an uncommon occurrence for a customer to demand that a company perform work in a manner that was different than what was assumed at the time of a bid.

(Scorsone, Tr. 4836). PDM had disagreements with customers relating to the type of pricing requested by customers. (Scorsone, Tr. 4835). PDM also had arguments with customers over the scope of specifications. This is a common occurrence. (Scorsone, Tr. 4835-36).

5.134 The price is the most important factor to a customer when evaluating a bid for a tank. (Scorsone, Tr. 4837). In fact, customers are still likely to award future work to a company after disputes over the performance of a project if they bid the low price. (Scorsone, Tr. 4837). Business disputes are typically resolved either by agreement or through dispute resolution. (Scorsone, Tr. 4836).

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(ii) Even CB&I had difficulty

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5.142 Air Liquide's dissatisfaction with AT&V's performance on the Freeport project does not effect CB&I's state of mind regarding AT&V's ability to compete against CB&I because even CB&I was confused by the Freeport project specifications so it was only natural that AT&V was having difficulties as well. (Scorsone, Tr. 5038) (state of mind).

5.143 The current business dispute between AT&V and Air Liquide will not inhibit Air Liquide from accepting bids from AT&V in the future because Air Liquide allowed Graver/ITEQ to continue to bid on LIN/LOX projects despite its deteriorating track record and performance. (Kamrath, Tr. 2004-05).

b. Cleve Fontenot has no knowledge of the post-acquisition lin/lox market

5.144 Fontenot left Air Liquide on July 1, 2001. (Fontenot, Tr. 2012). Fontenot has not kept up to date current or potential suppliers on LIN/LOX tanks in the United States. (Fontenot, Tr. 2032). Fontenot is not aware of current market conditions. (Fontenot, Tr. 2032). Fontenot has no knowledge of which companies Air Liquide has currently pre-qualified or permits to bid for the supply of field-erected LIN/LOX tanks. (Fontenot, Tr. 2033).

c. MG Industries

i. Low price is the overarching consideration

5.145 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]**

5.146 **[XXXXX XXXXX**

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5.147 MG purchasing theory holds that if a buyer "gets at least three bids for a LIN/LOX tank that supplier has a very good chance of getting the lowest or getting a competitive low price." (Patterson, Tr. 348). MG uses aggressive negotiating tactics to receive lower

5023). CB&I lowered its price on the MG Industries project in response to their perception of the competition on the project as well as the customers comments made during negotiation. (Scorsone, Tr. 5023-24).

5.152 CB&I believed MG Industries when it told CB&I that its price was high and subsequently lowered its price because CB&I knew that if it did not respond, MG Industries would have gone and negotiated with another supplier. (Scorsone, Tr. 5024).

5.153 **[XXXXX XXXXX]**

5.154 **[XXXXX XXXXX]**

5.155 **[XXXXX XXXXX**

iii. Westlake, Louisiana

5.161 **[XXXXX XXXXX]**

5.162 **[XXXXX XXXXX]**

5.163 **[XXXXX XXXXX]**

5.164 **[XXXXX XXXXX]**

iv. Praxair - Kirkland New, Mexico

5.165 CB&I was awarded a LIN/LOX project by Praxair in Kirkland, New Mexico pursuant to the partnering agreement. (Scorsone, Tr. 5019-20).

5.166 PDM entered into an alliance agreement with Praxair which obligated Praxiar to awarded non-the TTj 17.2DM, and Patoje4 pe

v. Air Products

(a) Air Products has not bid a LIN/LOX tank since 1998

5.167 Air Products has not competitively bid a LIN/LOX tank since 1998 in Baytown, Texas, and has no need in the foreseeable future for a LIN/LOX tank. (Hilgar, Tr. 1505-07; 1532-33).

5.168

Lincoln. (Kistenmacher, Tr. 869-70). This was the last time that Linde awarded a LIN/LOX project to a tank contractor. (Kistenmacher, Tr. 827-28; 868-69).

5.177 The total cost of all three tanks at the Lincoln, Nebraska air separation plant was approximately $1 to $1.5 million. (Kistenmacher, Tr. 836).

(b) Linde solicited budget pricing for a proposed project in New Mexico

5.178 In 2002, Linde requested budget pricing for a proposed project located somewhere in New Mexico. (Scorsone, Tr. 5020-21; RX 860 at CB&I 071847). CB&I, AT&V and Matrix each submitted pricing for Linde's proposed New Mexico. (Kistenmacher, Tr. 854). There has been pressure within Linde to use AT&V because "the low price make[s] it very interesting." (Fan, Tr. 1016-18).

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However, Kistenmacher was unaware of the fact that BOC has awarded AT&V two LIN/LOX tanks projects in Midland, NC and Hillsboro, OR. (Kistenmacher, Tr. 922).

7. There Is No Evidence Of Post-Acquisition Price Increases On LIN/LOX Tanks

a. [XXXXX XXXXX XXXXX XXXXX XXXXX]

5.182 **[XXXXX XXXXX]**

5.183 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]**

b. [XXXXX XXXXX XXXXX XXXXX]

5.184 **[XXXXX XXXXX]**

c. Linde - proposed New Mexico project

i. Chung Fan testified that he does not believe CB&I has increased prices

5.185 Chung Fan does not believe that CB&I has raised its prices and stated from what he has seen "their price has been consistent and has not changed . . . ." (Fan, Tr. 1006). Fan told the FTC that he had a "feeling" CB&I's price went up, but was "not sure" and "said that's personal opinion, it doesn't have much value, it's hearsay." (Fan, Tr. 1004). Fan stated

that his method was not accurate enough to determine if CB&I's prices went up because he did not have CB&I's metal pricing. (Fan, Tr. 1056).

ii. CB&I submitted a budget price which is not an accurate predictor of actual price

5.186 Fan agreed that CB&I provided him with a budget price. (Fan, Tr. 1063). Fan asked for pricing that was +/- 5% and assumed that CB&I's quotation met his requirements, but he was "not sure" and in fact doubts that CB&I's budget price was within 5 percent of what the actual price for the project would be. (Fan, Tr. 987-88; 1002-03; 1046-47).

5.187 Although Fan requested a plus or minus 5 percent price and received a budget price from CB&I, he did not call CB&I and tell them that they did not submit the price he requested. (Fan, Tr. 1064). Since Fan never spoke with CB&I, the budget price that Fan received from CB&I was not the result of any negotiation and does not take into account any reductions that CB&I may have made as a result of the negotiation process. (Fan, Tr. 1039-40).

5.188 Fan agreed that in submitting a price for a proposed future project CB&I is required to guess at possible material price fluctuations that may occur between the time it submits its price until the project is awarded. (Fan, Tr. 1052).

5.189 Fan stated that approximately 5 months time passes between the time that he requests pricing until a project is awarded. (Fan, Tr. 1051). Fan agreed that materials prices can fluctuate during the time period between when he first receives prices to when he would

iii. Chung Fan's analysis is irrelevant

(a) Fan is not qualified to analyze LIN/LOX prices

5.190 Fan does not posses the requisite knowledge, skill, experience, training or education to conduct an analysis of LIN/LOX tank prices. Fan has "never [been] in charge or had responsibility to purchase the LIN/LOX tanks." (Fan, Tr. 951).

5.191 Fan has a masters degree in food technology and chemical engineering. (Fan, Tr. 949; 1028). Fan does not have a degree in statistics or economics. (Fan, Tr. 1028). Although Fan does not have a degree in statistics, Fan determined the statistical significance of his analysis using a statistical method found in a statistics book published by the U.S. Government. (Fan, Tr. 1031).

(b) Fan's analysis was outdated and incomplete

5.192 Fan's analysis was not the product of reliable principles and methods. Prior to April 2002, the time of the New Mexico estimate, Fan had not updated his estimating spreadsheet for approximately two years. (Fan, Tr. 973). Fan stated that he uses the year 1998 as a baseline for his spreadsheet. Fan agreed that the further away from his baseline year of 1998 he gets, the less accurate his estimating attempts become. (Fan, Tr. 1069). Fan stated that his calculations do not account for price changes between the time the project is bid and the time it is awarded because that is not the purpose of his spreadsheet. (Fan, Tr. 1055-56).

5.193 Fan admitted that he is primarily comparing CB&I's New Mexico budget price to a firm fixed price submitted in 1999 by PDM on a tank in Bozarah, Connecticut. (Fan, Tr. 1069-70). Fan admitted that he is attempting to compare the CB&I price, which was not the result of any negotiation, to a PDM price which was the result of significant negotiation. (Fan, Tr. 1069-70).

(c) Fan did not provide CB&I with numerous important details when requesting pricing

5.194 Fan did not tell CB&I where in the state of New Mexico the project was going to be constructed. (Fan, Tr. 1061). Fan did not provide CB&I with the construction schedule. (Fan, Tr. 1073). Fan did not tell CB&I what city the project would be constructed in. (Fan, Tr. 1075). Fan did not tell CB&I the time of the year that the tank would be constructed. (Fan, Tr. 1076). Fan did provide CB&I with any details about the conditions of the project site. (Fan, Tr. 1077). Fan did not provide CB&I with the identity of the end-user. (Fan, Tr. 1078). Fan only provided CB&I with a preliminary nozzle list. (Fan, Tr. 1060). Fan also requested that the pricing for the New Mexico project be submitted within two weeks time. (Fan, Tr. 1062).

5.195 Fan admitted that he did not give CB&I as much information as he would provide during a firm final bid stage. (Fan, Tr. 1078). As a result, the CB&I budget price submission did not contain the following: CB&I's material prices, CB&I's labor prices, the number of estimated labor hours that would be required, their proposed construction schedule, the time of year the tank would be constructed, what city the tank was being built in. (Fan, Tr. 1064-65).

(d) Fan's analysis was not based on sufficient facts or data containing actual cost or quantity information

5.196 Fan admitted that other than the final lump-sum prices, there are no actual numbers in his spreadsheet. (Fan, Tr. 1071-72).

5.197 For all of the other projects listed in his spreadsheet, Fan stated that he has never received LIN/LOX tank drawings that detail the actual quantities of perilite or foamglass. (Fan, Tr. 1034). The drawing provided to Fan by PDM for the Bozrah, Connecticut, project did not include quantities of perilite, foamglass, or concrete. (Fan, Tr. 1036-37). CB&I

did not provide Fan with a drawing when it submitted its budget price for the New Mexico LIN/LOX project. (Fan, Tr. 1043-44).

5.198 In order to perform his analysis when a LIN/LOX tank supplier submits a drawing with its estimate, Fan must calculate for himself the volume or quantity of Perlite (Fan, Tr. 1033), quantity of foamglass (Fan, Tr. 1033-34), and the quantity of concrete (Fan, Tr. 1035-36).

5.199 Fan does not know the quantity of perlite used for any of the tanks in his spreadsheet. (Fan, Tr. 1045). Fan stated that it is very difficult to calculate the amount of Perilite required for a project because it shrinks when the tank is filled with cryogenic fluid. (Fan, Tr. 1045). Fan also stated that it is difficult to geometrically calculate the space between the inner and outer tank and therefore difficult to accurately estimate the amount of perlite insulation required. (Fan, Tr. 1045). In addition to calculating the actual amount, Fan also had to calculate the thickness of the perilite needed for the New Mexico tank. (Fan, Tr. 1047). Despite all of the difficulties in calculation the quantity of perlite, Fan attempts to calculate the quantity of perlite. (Fan, Tr. 1045).

5.200 In order to analyze CB&I's budget price for the New Mexico LIN/LOX project, Fan also had to calculate the thickness of the perlite required for the dome. (Fan, Tr. 1044). However, Fan did not know how to calculate the top radius of the outer tank. (Fan, Tr. 1046).

5.201 Although he attempted to estimate, Fan did not know the actual amount of perlite that CB&I estimated it would need to purchase for the project. (Fan, Tr. 1045).

5.202 Rather than investigating the actual cost of items required in the construction of a LIN/LOX tank, Fan made educated guesses at the prices. Fan did not call up perlite

suppliers to determine the current rate for perlite. (Fan, Tr. 1049). Fan did not call the foamglass supplier to determine the current rate for foamglass. (Fan, Tr. 1050). Fan did not call the concrete supplier to determine the current rate for concrete. (Fan, Tr. 1050).

iv. Linde/Praxair - Farmington, New Mexico

5.207 CB&I submitted a budget price to Linde for the construction of a LIN/LOX project at the same location as the Praxair project, although CB&I did not know where the Linde project was located when it submitted the budget price. (Scorsone, Tr. 5020). The price that CB&I submitted to Praxair for the LIN/LOX project in Kirkland New Mexico was a firm fixed price. (Scorsone, Tr. 5020).

(a) It is improper to compare the Praxair firm fixed price and the Linde budget price

5.208 It is impossible to compare the budget price that CB&I submitted to Linde for its proposed New Mexico project to the firm fixed price that CB&I submitted to Praxair for the Kirkland project because the budget price did not include significant details for the project including the actual location of the project. (Scorsone, Tr. 5020-21).

(b) The pricing provided to the two companies was for very different tanks with very different specifications

5.209 There are numerous differences between the proposed Linde New Mexico project and the actual Praxair New Mexico project which makes it unable to compare the two prices. (Scorsone, Tr. 5020-

5.211 Although there are some items, such as perlite insulation, that are not included in the Praxair pricing that are included in the New Mexico, there is approximately $60,000 worth of additional cost items included in the Praxair pricing that were not included in the Linde budget price. (Scorsone, Tr. 5022).

C. COMPETITION ON POST ACQUISITION PROJECTS HAS INFLUENCED CB&I'S STATE OF MIND REGARDING COMPETITION

1. Competition In The LIN/LOX Market Is Intense

5.212 Scorsone state of mind regarding the competition in the LIN/LOX market is that it is very intense and that there are a variety of well established contractors that compete against CB&I. (Scorsone, Tr. 5038-39) (state of mind). CB&I believes that it has "a very hard time competing on [LIN/LOX] tanks." (RX 208) (state of mind).

5.213 The information that Scorsone has received in various emails from his personnel has made Scorsone perceive that the competition in the LIN/LOX market is "intense." (Scorsone, Tr. 5029-30; RX 208; RX 273 at 2) (state of mind).

5.214 "Apparently, these competitors [AT&V and CB&T] have hired expertise that used to work for Brown Minneapolis Tank and Graver Tank. Graver used to be very competitive in these LIN LOX tanks and it sounds like their 'know-how' moved on to another company. Matrix is another recent player in the LIN LOX market, so there are three competitors now to CB&I." (RX 208; Scorsone, Tr. 5029-30) (state of mind).

5.215 Chattanooga Boiler and Tank also believes there are an adequate number of suppliers to ensure competitive prices for LIN/LOX tanks. (Stetzler, Tr. 6366).

2. CB&I Cannot Increase Its Prices On LIN/LOX Tanks

5.216 CB&I does not believe that its Acquisition of PDM has enabled it to increase prices in the LIN/LOX market because it continues to be a "robust competitive environment." (Scorsone, Tr. 4881-82; 5030) (state of mind).

5.217 CB&I believes that if it increases its prices on LIN/LOX tank, it will lose work to its competitors. (Scorsone, Tr. 5030-31) (state of mind). CB&I believes it needs to find ways to cut its prices on LIN/LOX tanks in order to win LIN/LOX projects. (Scorsone, Tr. 5031) (state of mind).

5.218 Chattanooga Boiler and Tank believes that the prices for field-erected LIN/LOX tanks will not be affected by the Acquisition of PDM by CB&I. (Stetzler, Tr. 6366).

D. THERE ARE NO BARRIERS TO ENTRY IN THE LIN/LOX MARKET

1. Subcontracting Is Not A Barrier

5.219 Construction of a LIN/LOX tank does not require a significant number of subcontractors. At most, 10 subcontractors would be required on a project. One area that always requires the use of a subcontractor involves the instillation of the perlite insulation required for a LIN/LOX tank. (Cutts, Tr. 2480-81). AT&V used only three subcontractors for the BOC LIN/LOX project. (Cutts, Tr. 2521-22).

5.220 The engineering, fabrication and field erection of a LIN/LOX tank can be easily subcontracted to an outside company and supervised by a field supervisor. (Hilgar, Tr. 1526-27). A contractor providing turnkey services does not itself build every phase of the project. Many portions can be subcontracted out to other companies for economical reasons and still be categorized as a turnkey project. A turnkey contractor can

5.225 Dan Knight is approximately 50 years old and works for CB&I in an entry level position as a first level salesperson. Knight does not manage or supervise anyone at CB&I and did not have any supervision or management authority at PDM. (Scorsone, Tr. 4809). Knight is a "big talker" and not a "very deep thinker." He is a salesmen focused on selling his products. (Scorsone, Tr. 4809-10).

2. Scorsone Did Not Request That Dan Knight Prepare His Thoughts And Opinions Regarding The Acquisition

5.226 Scorsone did not request that Dan Knight prepare his thoughts on the benefits of CB&I's Acquisition of PDM. (Scorsone, Tr. 4799-4800; CX 652).

5.227 After the Acquisition was publicly announced, Scorsone was walking around his offices at PDM to talk to his employees and hopefully relieve some of the anxiety that some employees may have been feeling. (Scorsone, Tr. 4799). Scorsone stopped into the office of Sean Doyle, a project manager employed at PDM. Mr. Doyle was on speakerphone with Dan Knight discussing some issue. (Scorsone, Tr. 4799).

5.228 Mr. Scorsone said hello to Dan Knight who inquired about the Acquisition and commented that he had a few ideas. Mr. Knight asked if Mr. Scorsone would like to see some of his ideas. (Scorsone, Tr. 4799-4800). Mr. Scorsone agreed to accept Mr. Knight's ideas merely in order to indulge Mr. Knight who was is a low level, first-line sales person. (Scorsone, Tr. 4800).

5.229 Mr. Scorsone did not believe that Dan Knight's opinions on the Acquisition would have any great insight on the Acquisition, but he agreed to look at them so as to not insult Dan Knight. (Scorsone, Tr. 4800). A few days after Mr. Scorsone spoke with Mr. Knight in Mr. Doyle's office, Mr. Knight sent his opinions to Mr. Scorsone via email. (Scorsone, Tr. 4800; CX 651-52).

3. Scorsone Does Not Agree With Any Of The Opinions Expressed By Dan Knight

5.230 Mr. Scorsone did not agree with any of the opinions that Mr. Knight expressed in his email. In fact, most of Mr. Knight's opinions were completely inaccurate. (Scorsone, Tr. 4801-10).

5.231 Knight was incorrect in his opinion that "both firms benefit from additional field crews and equipment" because as a result of the Acquisition the combined organization had too much equipment and had to auction off some of the equipment. (Scorsone, Tr. 4803; CX 652).

5.232 After reviewing Knight's opinions, Scorsone believes that Knight mistakenly was under the impression that PDM was acquiring CB&I when in fact it was the exact opposite. (Scorsone, Tr. 4801-10; CX 652).

4. Dan Knight Does Not Have The Foundation To Make The Statements He Made

5.233 Dan Knight had absolutely no role in CB&I's Acquisition of PDM. (Scorsone, Tr. 4800). Dan Knight has no responsibility for selling LNG tanks. (Scorsone, Tr. 4804-05). Knight does not have an overall knowledge of the LIN/LOX market. While at PDM he focused on a few regional customers around the New Jersey area. (Scorsone, Tr. 4805).

5.234 Mr. Knight is not a person that PDM or CB&I management consulted with in order to determine the benefits of the CB&I/PDM Acquisition. (Scorsone, Tr. 4808). Mr. Knight does not have basic knowledge required to provide accurate and meaningful opinions regarding CB&I's Acquisition of PDM. (Scorsone, Tr. 4808).

VI THERMAL VACUUM CHAMBER FINDINGS OF FACT

A. TVC BACKGROUND INFORMATION

6.1 A field-erected thermal vacuum chamber ("TVC") is a stainless steel pressure vessel used to test satellites and satellite components prior to launch. (Gill, Tr. 179-83; Neary, Tr. 1423-24).

6.2 A TVC simulates the atmospheric and thermal conditions found in space. (Gill, Tr. 183; Proulx, Tr. 1722-23; Thompson, Tr. 2039-40; Higgins, Tr. 1264).

6.3 In addition to commercial satellite testing, TVC's are often used for government projects. (Gill, Tr. 184; Neary, Tr. 1424).

6.4 A TVC is composed of a large vacuum envelope (or chamber) constructed of stainless steel shaped roughly like a horizontal cylinder with a front door that may swing on a hinge or slide laterally on a rail. (Scully, Tr. 1098-99).

6.5 A "thermal vacuum system" is the process equipment that goes inside a thermal vacuum chamber to simulate extreme heat and cold. (Higgins, Tr. 1263). The thermal vacuum system is comprised of one or more shrouds, vacuum insulated pipe, and cryo pumps or other pumping equipment, which are all controlled by a thermal control unit. (Higgins, Tr. 1263).

6.6 The stainless steel used on a TVC can have steel that ranges in thickness from one inch to one and one-fourth inch. (Gill, Tr. 188-89).

6.7 The TVC is outfitted with two or three different types of vacuum pumps that are used collectively to achieve the vacuum conditions found in space. (Scully, Tr. 1099).

6.8 The thermal shroud turns the vacuum chamber into a thermal vacuum chamber. (Scully, Tr. 1099). This thermal shroud is a black wall found inside the vacuum envelope that cools or heats the contents of the chamber through radiation. (Scully, Tr. 1099-1101).

6.9

Thompson, Tr. 2104). For example, the Spectrum Astro project has been canceled due to "government action." (Thompson, Tr. 2097; 2103).

6.16 TVC projects are speculative and long range in nature. Customers and vendors are generally not personally involved in the discussions at the Department of Defense concerning their satellites appropriation plans for five years into the future. (*See* Neary, Tr. 1473-74; Gill, Tr. 261-62).

2. Customers Have Overcapacity In Field-Erected TVC's

6.17 The satellite industry has excess capacity in its existing TVC's. (*See* Scully, Tr. 1203-04).

6.18 Most satellite manufacturers already have one or more of these chambers, which have long lifespans and can be reconditioned. (Gill, Tr. 263-64).

6.19 Boeing already owns five field-erected TVC's (as well at least 30 shop-fabricated TVC's at the El Segundo facility). (Proulx, Tr. 1725-26).

6.20 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]**

6.21 TRW currently owns and operates five field-erected TVC's and approximately 15 shop-erected TVC's. (Neary, Tr. 1422). Of the five existing field-erected TVC's at TRW, two were built in the 1960's and the other three were built in the 1980s. (Neary, Tr. 1423).

3. Satellites Are Getting Smaller As A Result Of Miniaturization Of Electronics

6.22 The predominant number of satellites built in the future will be small enough to be tested in existing TVC's. (Scully, Tr. 1203-04).

6.23 Satellite sizes are shrinking, rendering the large, field-erected TVC's obsolete, because smaller satellites can be tested in smaller shop-erected chambers. (*See* RX 204 (state of mind)).

6.24 These smaller satellites that are built as the result of miniaturization are just as expensive as their larger predecessors. (Scully, Tr. 1204). Existing large, field-erected TVC's and smaller shop-erected TVC's should be adequate to test these satellites in the future. (*See* Scully, Tr. 1203-04).

6.25 Neither CB&I nor ex-PDM made shop-erected TVC's. (Thompson, Tr. 2105).

C. CB&I IS A FRINGE FIRM IN THE TVC MARKET

1. CB&I Lacks Experience In Building TVC's

6.26 CB&I has not built a TVC since 1984. (Scorsone, Tr. 5055-56; Glenn, Tr. 4089, 4160; Scully, Tr. 1187-89, 1193; Higgins, Tr. 1276-77).

6.27 CB&I has never built a 0 42thTw (-) 1TD 0.0852Tc 0 Tw (CB&Iailboj 33.750TD -0.246 Tc 0 TTj 4

Scully, Tr. 1187 hasistmoust36fficof mestt a d 42tailboj 33.717-427. 0.4821679 1.

6.26

6.32 The Grumman TVC at Beth Page, Long Island was neither mailbox-shaped nor field-erected. The Beth Page chamber was horseshoe-shaped, which is distinct from a mailbox-shaped chamber. (Scorsone, Tr. 5056-57). CB&I actually subcontracted the fabrication of that shop-fabricated chamber to another company. (Scorsone, Tr. 5056-57).

6.33 CB&I's promotional document that trumpeted its "proven performance in space-related structures and systems" is carefully worded to include more than just field-erected TVC's, because CB&I builds other non-relevant structures, such as acoustical chambers. (Scully, Tr. 1208).

6.34 CB&I's welders have not welded a field-erected TVC since 1984. (Scully, TD (ca.25 0a,) Tj 40225

6.38

6.45

have a significant impact on the price of the thermal vacuum facility." (Thompson, Tr. 2088).

6.50 CB&I sold XL because it was losing money. (Scully, Tr. 1195, 1130-31; Glenn, Tr. 4162). This financial loss was the result of a total lack of TVC work in the marketplace. (Scully, Tr. 1195).

6.51 CB&I determined that it would be more profitable to subcontract out thermal systems work as needed in the future. (Scully, Tr. 1195-96).

6.52 Prior to the sale of XL back to the its original owners, discussions occurred between Mr. Scully, Mr. Stephen Crain, and Mr. Rich Goodrich regarding the re-sale. (Scully, Tr. 1131). During those conversations, the FTC's investigation was never discussed nor did they discuss any potential interest that CB&I had in fixing any competitive problems in the TVC market. (Scully, Tr. 1131-32).

6.53 After the sale of XL, CB&I did not retain any technical knowledge, licenses or rights to the technology owned by XL, and XL is not required to work with CB&I in the future, nor is CB&I required to use XL's technology in the future if CB&I bids for a TVC. (Scully, Tr. 1227). In short, selling XL returned CB&I to its pre

6.56 CB&I currently has no ability to design or make the higher-tech thermal system components that XL produces. (Scully, Tr. 1225).

4. CB&I Would Likely Have Withdrawn From the TVC Market Had It Not Acquired PDM And Will Not Actively Pursue TVC Projects In The Future

6.57 CB&I planned to exit the field-erected TVC business entirely. (Thompson, Tr. 2075-76).

6.58 PDM bid the G-1 project in 1997 at below cost with the intention of keeping CB&I completely out of the market. (Scully, Tr. 1193-94, 1166). **[XXXXX XXXXX]**

6.59 Preparing TVC bids is expensive and these projects often do not end up being built. (Scorsone, Tr. 5054).

6.60 CB&I's employees with relevant TVC experience are dwindling as they age, and they will not be replaced as they retire. (Scorsone, Tr. 5054-55). Likewise, PDM did not replace aging employees with TVC experience. (Scorsone, Tr. 5055).

6.61 Currently, CB&I does not have an engineering staff that is dedicated solely to building thermal vacuum chambers. (Scorsone, Tr. 4887).

6.62

for Hughes prior to Boeing's acquisition of Hughes in the last few years. (Proulx, Tr. 1719).

6.70 Mr. Proulx's job title is product manufacturing factory planning manager and he is responsible for recommending procurements at Boeing. (Proulx, Tr. 1720).

6.71 In 2000, Boeing acquired its competitor in the satellite business, Hughes Space & Communication. (Proulx, Tr. 1718).

6.72 Boeing manufactures and sells satellites. (Proulx, Tr. 1718).

6.73 Boeing typically sells satellites that range in price from $60 to $250 million. (Proulx, Tr. 1719).

6.74 Boeing has five field-erected TVC's and 30 shop-fabricated TVC's. (Proulx, Tr. 1725-26).

6.75 Boeing's TVC's are very large structures, including one that is 50 feet by 50 feet by 45 feet. (Proulx, Tr. 1740-41).

6.76 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]**

6.77 **[XXXXX XXXXX]**

2. TRW Is A Sophisticated TVC Customer

6.78 Mr. Patrick Neary is the manager of the environmental test organization at TRW Space & Electronics. He is responsible for providing the space simulation of TRW's satellites. (Neary, Tr. 1419-20).

6.79 Approximately 95% of TRW's contracts are with the federal government, and the remaining 5% are commercial projects. (Neary, Tr. 1420).

6.80 TRW has five field-erected TVC's and approximately 15 shop-fabricated TVC's. (Neary, Tr. 1422).

6.81 Mr. Neary has been involved with three previous procurements for field-erected TVC's. (Neary, Tr. 1422-23).

6.82 TRW has been able to competitively bid their TVC projects in the past, even without PDM. (Neary, Tr. 1442-43).

6.90 Raytheon was able to generate competition in the procurement of its new TVC's. (Hart, Tr. 383-84, 401-02).

F. CB&I'S REMEDY PACKAGE IS MORE APPROPRIATE THAN COMPLAINT COUNSEL'S REQUEST FOR DIVESTITURE

1.

6.97 The market for TVC's is not large enough to support the existence of two suppliers in the U.S. (Scully, Tr. 1226-27).

6.98 In the end, customers benefit from having a merged CB&I-PDM because it combined the wisdom of CB&I and PDM employees. (*See* Scully, Tr. 1240).

2. CB&I's Re- -27). -C B & I

6.105 CB&I would agree to not act as an EPC contractor for any TVC project for a period of seven years, as well as committing to not purchase any company that has thermal shroud technology. (Glenn, Tr. 4166).

3. Customer Reactions To CB&I's Remedy Offer Have Been Positive

6.106 Divestiture of CB&I's Red Book engineering standards would benefit competition. (Scully, Tr. 1228-30; Higgins, Tr. 1275-76; Proulx, Tr. 1755; Cutts, Tr. 2391-92).

6.107 It would benefit competition if CB&I were to mentor an existing large tank construction company like Matrix, Nooter or Puget Sound Fabricators ("PSF") on CB&I's next field-erected TVC project by integrating that company's engineering, fabrication and field-erection crews into the entire process. (Scully, Tr. 1230-31; Higgins, Tr. 1275-76). In fact, the newly mentored company would possibly have more current experience in constructing a field-erected TVC than CB&I. (Scully, Tr. 1231).

6.108 There are companies in the marketplace that can build field-erected TVC's if they are given some training and instruction, such as Matrix, Nooter, and PSF. (Scully, Tr. 1229-30).

6.109 Boeing would consider using a TVC supplier that had gained its experience by working as a joint venture partner with CB&I on each phase of the construction process of a future field-erected TVC project. (Proulx, 1756-57).

6.110 If CB&I were to offer customers in this market a firm fixed bid price with a 4% profit margin on any project that arose for the next 7-10 years, these customers would be receiving a good price. (Scully, Tr. 1231-32; Gill, Tr. 261; Neary, Tr. 1482). Howard Fabrication, for example, normally attempts to bid out at a 7-10 profit margin, which is still a good value for the customer. (Gill, Tr. 260-61).

6.111 CB&I is acting responsibly in offering the 4% deal. (Neary, Tr. 1482).

6.112 CB&I's sale of XL benefits competition in the TVC market. (Proulx, Tr. 1757-58; Gill, Tr. 258).

6.113 CB&I was planning to exit the field-erected TVC market just prior to the Acquisition.

capability. (Higgins, Tr. 1274-75). This capability includes significant numbers of people who can weld and build field-erected structures. (Higgins, Tr. 1275).

6.119 It would benefit competition if CB&I were to mentor a company like Matrix, Nooter or PSF on CB&I's next field-erected TVC project by integrating that company's engineering, fabrication and field-erection crews into the entire process. (Scully, Tr. 1230-31). The newly mentored company would possibly have more current experience in constructing a field-erected TVC than CB&I, since CB&I has not actually built one since 1984. (Scu

6.123 CB&I will not be able to raise its prices after the Acquisition. (Scorsone, Tr. 5062). For example, since the Acquisition, CB&I has offered to the Court to sell the TVC to Spectrum Astro at a 4% margin. (Scorsone, Tr. 5064).

6.124 The Acquisition has not given CB&I any greater freedom to increase prices on TVC's. (Scorsone, Tr. 4881-82).

6.125 Pre-Acquisition, extremely low prices (e.g. below margin) that result from vigorous

6.130 At that point, Mr. Gill told Mr. Miles that he had submitted rough pricing for the work. (Gill, Tr. 274). Thus, Mr. Miles and Mr. Gill were not aware until mid-way through the meeting that both CB&I and Howard Fabrication were already in the process of submitting separate budget pricing on the TRW project. (Gill, Tr. 252-53; Scorsone, Tr. 5059-60).

6.131 Mr. Miles did not make this offer with the consent or knowledge of management at CB&I. (Scorsone, Tr. 5059-62).

6.132 Mr. Miles is an entry-level salesperson, and not a CB&I executive. (Scorsone, Tr. 5061-62). Mr. Miles does not have the authority to set contract prices, set bidding strategy, or determine who subcontractors are on a project of that size. (Scorsone, Tr. 5062).

6.133 CB&I was unaware that Howard Fabrication had submitted budget pricing on the TRW project prior to Mr. Miles' meeting. (Scorsone, Tr. 5060).

6.134 A subcontracting arrangement between Howard Fabrication and CB&I could provide TRW with lower costs, and ultimately with a lower price. (*See* Neary, Tr. 1480). There could be cost advantages with using Howard Fabrication as a subcontractor because Howard Fabrication has lower overhead than CB&I. (Neary, Tr. 1480).

6.135 At the end of the day, TRW could benefit by both having Howard Fabrication as a competitive bidder and then using Howard Fabrication as a low-cost subcontractor with CB&I. (Neary, Tr. 1480).

6.136 If Howard Fabrication acts as a subcontractor for field-erected TVC jobs with CB&I or PDM, it allows those companies to save the customer money with lower costs. (Gill, Tr. 254-55). PDM has used Howard Fabrication as a subcontractor on TVC projects in the past. (Scorsone, Tr. 5060-61).

6.137 CB&I is still considering using Howard Fabrication as a subcontractor, but would seek the prior approval of the customer before doing so. (Scorsone, Tr. 5060).

3. CB&I and PDM Did Not Coordinate Their Pricing On The Spectrum Astro Project Prior To The Acquisition

6.138 PDM-EC's President, Mr. Luke Scorsone, was asked to give a presentation to CB&I's management in early August, 2000 regarding the proposed Acquisition. (Scorsone, Tr. 4794). Several CB&I and PDM executives and a representative from PDM's investment bank, Tanner Associates, were in attendance at the presentation. (Scorsone, Tr. 4795).

6.139 Steps were taken to ensure that sensitive or confidential information was not exchanged at the meeting. (Scorsone, Tr. 4795).

6.140 During the course of the meeting, a joke was made by CB&I executive Mr. Bob Jordan that the Spectrum Astro job would probably be "DOA." (Scorsone, Tr. 4796). This joke referred to Spectrum Astro's financial condition. (Scorsone, Tr. 4796). The Spectrum Astro project was not on the agenda for the meeting -- the joke was a mere off-the-cuff comment. (Scorsone, Tr. 4798). The joke "lightened the tone of the meeting." (Scorsone, Tr. 4798).

6.141 No price discussion or bidding coordination occurred at the August meeting between CB&I and PDM representatives. (Scorsone, Tr. 4797). Pricing information, bidding strategy, and coordinated bidding were not discussed at any time. (Scorsone, Tr. 4796-97, 5045-46; Scully, Tr. 1221-22).

6.142 Indeed, PDM wanted to win the Spectrum Astro project bidding, and used it's best efforts to win it. (Scorsone, Tr. 4797).

6.143 PDM pursued this bid vigorously, but ultimately failed to win the letter of intent. (Scorsone, Tr. 5044, 5046).

6.144 In fact, PDM bid this work at a zero percent profit margin, because PDM's shops were operating under capacity at that time and they needed work. (Scorsone, Tr. 5044). The work was needed for PDM to cover its overhead costs. (Scorsone, Tr. 5046).

6.145 PDM's total price was higher than CB&I's because of the price offered by its thermal technology partner, Chart Industries. (Scorsone, Tr. 5045).

6.146 CB&I lowered its original price in order to win the job, and the price came in under Spectrum Astro's budget estimates. (Thompson, Tr. 2119-21).

6.147 One of the lower level employees involved in the Spectrum Astro re-pricing effort was Mr. Lacey. (Scully, Tr. 1216-18).

6.148 Mr. Lacy is not part of CB&I management, and in fact, he is a fairly lower-level marketing and salesperson at CB&I. (Scully, Tr. 1217).

6.149 Mr. Scorsone and Mr. Lacey never discussed pricing on this project prior to the Acquisition. (Scorsone, Tr. 5045).

6.150 Mr. Lacey was an entry-level marketing person at CB&I who worked primarily in the aerospace business during the time that XL was owned by CB&I. (Scully, Tr. 1125; Scorsone, Tr. 5045). Mr. Lacey was CB&I's contact person with Spectrum Astro. (Thompson, Tr. 2043). Meanwhile, Mr. Scorsone had final authority at PDM over the price offered to Spectrum Astro. (Scorsone, Tr. 5046).

6.151 Mr. Lacey generated a large volume of ideas for management to consider with regard to the TVC business, but only part of these ideas were ever acted upon. (Scully, Tr. 1218; CX-242).

6.152 Mr. Lacey typically presented both the extreme case as well as the moderate case in his proposals, and his extreme suggestions were ignored by his superiors. (Scully, Tr. 1219-21).

6.153 Mr. Lacey's ideas were ignored. Mr. Lacey's proposal that both CB&I and PDM should bid high on Spectrum Astro prior to the Acquisition was never implemented. (Scorsone, Tr. 5045-46; Scully, Tr. 1221).

4. Boeing (Hughes)[1] Seal Beach ROM Pricing Was Not A Post-Acquisition Price Increase

6.154 **[XXXXX XXXXX]**

6.155 **[XXXXX XXXXX]**

6.156 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]**

6.157 **[XXXXX XXXXX]**

6.158 **[XXXXX XXXXX]**

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[1] In 2000, Boeing acquired Hughes Space & Communication. (Proulx, Tr. 1718).

6.159 **[XXXXX XXXXX]**

6.160 **[XXXXX XXXXX]**

6.161 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]**

6.162 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]**

6.163 **[XXXXX XXXXX]** Such information would have been necessary for producing a firm fixed bid price. (*See* Scorsone, Tr. 5000-02).

6.164 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]**

6.165 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX**

XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]

6.166 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]**

6.167 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]**

6.168 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]**

5. The November, 2001 Spectrum Astro Re-Pricing Was Not A Post-Acquisition Price Increase

6.169 Spectrum Astro sought to build a field-erected TVC in 2000. In November, 2000, both CB&I and PDM submitted best and final offers to Spectrum Astro as part of their bids for the "Factory of the Future" TVC. (Scorsone, Tr. 5115-16).

6.170 CB&I won the source selection for Spectrum Astro's TVC project. (Thompson, Tr. 2061). The source selection that Spectrum Astro gave to CB&I in December, 2000 was not a contract, rather it was a letter of intent to negotiate a final contract with CB&I. (Thompson, Tr. 2064-5).

6.171 At this point, only some pre-contract engineering work had been completed on the job. (Scully, Tr. 1171). Spectrum Astro paid PDM and CB&I each $75,000 to perform pre-contract design studies in which the information received by Spectrum Astro allowed it to prepare an RFQ ("request for quote") for a TVC. (Scully, Tr. 1167-68; Thompson, Tr. 2066-67).

6.172 After the source selection was announced, Spectrum Astro did not proceed immediately to a contract because Spectrum Astro was having difficulty securing financing for the project. (Thompson, Tr. 2065-66).

6.173 On more than one occasion, Spectrum Astro told CB&I that it thought that they were close to securing financing, and he turned out to be wrong every time. (Thompson, Tr. 2105).

6.174 In fact, CB&I offered to provide Spectrum Astro with the financing for the Spectrum Astro project in November, 2000, but Mr. Thompson refused. (Thompson, Tr. 2106). In order for CB&I to offer financing, CB&I reviewed Spectrum Astro's financial condition. (Thompson, Tr. 2106).

6.175 CB&I was so concerned about Spectrum Astro's cash flow that it required Spectrum Astro to pay CB&I in advance for some post-award engineering work. (Thompson, Tr. 2107-09).

6.176 CB&I's price expired 90 days after the source selection, in February, 2001, and Spectrum Astro did not request updated pricing until 10 months later in November, 2001. (Scorsone, Tr. 5047; *see also* Thompson, Tr. 2069). For almost one year, the project remained dormant. (Scorsone, Tr. 5048).

6.177 Prices expire because the materials costs and labor rates change over time. (Thompson, Tr. 2069; Scully, Tr. 1183).

6.178 The project was re-priced subsequently at CB&I's expense. (Scorsone, Tr. 5048). At the time of the re-pricing, Spectrum Astro and CB&I were negotiating. (Thompson, Tr. 2071).

6.179 CB&I's first re-pricing in November, 2001 came nearly one year after the original price was submitted and was in the amount of $12,019,000. (Scorsone, Tr. 5116; Thompson, Tr. 2074).

6.180 Extra profit was included in the November, 2001 re-

6.185 The November, 2001 price increase also reflected changes in material costs and labor rates. (Scully, Tr. 1222). These costs had to be completely re-evaluated each time the

add money to, and as a result, that person chose to add the money to the margin. (Scorsone, Tr. 5235-37).

6.192 CB&I attempted to recover pre-contract costs from Spectrum Astro that amounted to approximately $500,000. (Scully, Tr. 1215-16, 1223). This amount accounts for the 4% increase in margin that was included in the re-pricing. (Scully, Tr. 1216).

6.193 Spectrum Astro did not like CB&I's November, 2001 price for the TVC project, but this situation was a pretty common business dispute. (Thompson, Tr. 2117). It is not unusual for a contractor to stuff more profit into a proposal when they have an opportunity as part of a negotiation. (Thompson, Tr. 2121).

6.194 Business disputes with customers are common occurrences. (Scorsone, Tr. 4834-36). It's also not uncommon for a situation to arise in which a customer demands that the contractor perform the work in a manner different from what was assumed when the bid was initially submitted. (Scorsone, Tr. 4836). Such changes can impact the costs of a project, and this typically result in dispute resolution elements of the contract being activated. (Scorsone, Tr. 4836-37). Such disputes have no impact on the contractor and the customer working together in the future on other projects. (Scorsone, Tr. 4837). The price changes has nothing to do with competition; rather, the change is related to change orders requested by the customer. (Scorsone, Tr. 5049; Scully, Tr. 1172-73, 1222, 1224).

6.195 The November, 2001 price expired again after 90 days without Spectrum Astro acting on the new price. (Scorsone, Tr. 5051). After the second price had expired, Spectrum Astro waited six or seven months before requesting an updated price from CB&I. (Scorsone, Tr. 5051). The companies did not have a contract or financing at that point. (Scorsone, Tr. 5051-53).

6.196 In May, 2002, Spectrum Astro responded to the November, 2001 price asking CB&I to try again. (Scorsone, Tr. 5051). On June 25, 2002, CB&I provided Mr. Thompson with an updated price in the amount of $11,553,790, a decrease of roughly $500,000 from the previous price update. (Thompson, Tr. 2091-92).

6.197 CB&I lowered its price in June, 2002, because Mr. Scorsone was aware that the customer was having difficulty obtaining financing, and he wanted to assist them by making the project more viable with a lower price. (Scorsone, Tr. 5051-53).

6.198 When CB&I offered its re-pricing in June, 2002, Scorsone was completely unaware that Spectrum Astro's CEO was having his deposition taken in connection with this proceeding. (Scorsone, Tr. 5053). The price was not lowered as a result of anything that was happening in the deposition. (Scorsone, Tr. 5053). Rather, the updated pricing was provided in response to Spectrum Astro's May, 2002 request for pricing. (Thompson, Tr. 2124-25). In other words, CB&I was working on the re-pricing weeks before Mr. Thompson's deposition took place. (Thompson, Tr. 2124-25).

6.199 Spectrum Astro does not plan to proceed with the field-erected TVC project for Spectrum Astro. (Thompson, Tr. 2097, 2103-04). The decision is the result of "government action." (Thompson, Tr. 2097). The lack of financing also influenced the decision. (Thompson, Tr. 2105). It will be a long time before the Spectrum Astro job is actually built, if at all. (Scully, Tr. 1225-26).

6.200 Instead, Spectrum Astro intends to build a smaller shop-fabricated chamber, a product which CB&I does not build. (Thompson, Tr. 2104-2105).

6.201 The current proposed price (the June, 2002 re-pricing) has expired, and Spectrum Astro does not have a currently valid price for the TVC job. (Thompson, Tr. 2103; Scully, Tr. 1186).

6.202 Two years have elapsed since the project was awarded to CB&I/XL, and the Spectrum Astro TVC job was never built, nor was CB&I ever released to begin work on that project. (Scully, Tr. 1182). **[XXXXX XXXXX XXXXX XXXXX XXXXX]**

VII COMPLAINT COUNSEL'S FAILED EFFORT TO CARRY ITS BURDEN OF PROOF

A. COMPLAINT COUNSEL'S EFFORT TO USE BUDGET PRICING TO SHOW ALLEGED ANTICOMPETITIVE EFFECTS HAS FAILED

1. Budget Pricing Is Different From Firm Fixed Bid Pricing

7.1 A budgetary estimate, also known as rough order of magnitude pricing ("ROM"), is different from a firm fixed bid price. (Glenn, Tr. 4126; Neary, Tr. 1432, 1438; Hall, Tr. 1867; Carling, Tr. 4472). Budget prices are more imprecise than firm fixed bid prices. (Carling, Tr. 4472; Scorsone, Tr. 4999).

7.2 Customers use budget prices for a variety of purposes. A budget price is often developed for planning purposes for a project which may or may not be built. (Hall, Tr. 1863, 1868-69; Neary, Tr. 1439; Stetzler, Tr. 6351; Carling, Tr. 4472). **[XXXXX XXXXX XXXXX XXXXX XXXXX XXX]** Sometimes, budget prices are numbers that are being used by a client to set up an investment budget. (Kistenmacher, Tr. 925). Budget pricing are also used by customers for forecasting. (Patterson, Tr. 373-74; Price, Tr. 601; Scorsone, Tr. 5250; Stetzler, Tr. 6351). A supplier will sometimes provide a preliminary price estimate to a customer for the purposes of verifying that the customer's budget is within the realm of what the customer can afford. (Glenn, Tr. 4125-26; Carling, Tr. 4472).

7.3 Budget prices are prepared with less detailed information provided by the customer. (Hall, Tr. 1866; Carling, Tr. 4472; Fan, Tr. 1078). By contrast, a fixed firm bid price is based on very detailed designs. (Carling, Tr. 4472; Scorsone, Tr. 5003). The company providing the firm price is expected to "stand up to their price and do the work for that price." (Carling, Tr. 4472).

7.4 Budget pricing for LNG tanks is "more conservative" than firm fixed bid prices. (Price, Tr. 604). In other words, customers are not expecting the lowest number that they can

7.11 Line item listing of prices for a budgetary estimate is purely for internal use. (Scorsone, Tr. 5252-53). These documents are never prepared with the expectation that someone outside of the company will ever see them. (Scorsone, Tr. 5253).

7.12 A budget price is not an offer to sell. (Glenn, Tr. 4126; Simpson, Tr. 5380). LNG tanks are not awarded or purchased at a budget price estimate. (Glenn, Tr. 4126-27; Carling, Tr. 4472-73). A budget price will not be the price a customer pays for a tank. (Patterson, Tr. 374).

7.13 Budgetary estimates are not serious bid proposals. (Stetzler, Tr. 6352; Carling, Tr. 4472). In contrast, firm fixed bid prices are serious bid proposals. (See5 TD -27.7 Tw (6352d priFj -373.5 -27

7.17 Subcontractors are not consulted when developing a budget price. (Scorsone, Tr. 5000; Fan, Tr. 1065). Specifically, their current prices are not used when developing a budget price. (Scorsone, Tr. 5000).

7.18 CB&I does not attempt to accurately estimate the amount of engineering labor required to design a tank when developing a budget price. (Fan, Tr. 1064; Scorsone, Tr. 5000). Those hours are not calibrated as part of the budget price. (Scorsone, Tr. 5000; see also Fan, Tr. 1064).

7.19 When developing a budget price, a supplier does not check to see whether subcontracting fabrication of an LNG tank might be more economical than self-performing the fabrication. (Scorsone, Tr. 5000; Fan, Tr. 1065).

7.20 A project's construction schedule is unknown when developing a budget price. (Fan, Tr. 1065, 1073; Scorsone, Tr. 5000). Knowing the construction schedule in advance is important, because it can influence the amount of indirect costs, tool and equipment costs, and mobilization and demobilization costs. (Scorsone, Tr. 5000-01; Glenn, Tr. 4126).

7.21 Costs can increase depending on when the work is done. (Scorsone, Tr. 5001). The time of the year of the construction is generally unknown when developing a budget price. (Fan, Tr. 1065; Scorsone, Tr. 5001). Price can be affected if productivity is impaired by weather that is either too cold or too hot. (Fan, Tr. 1076; Scorsone, Tr. 5001).

7.22 The exact location of the project site is unknown when developing a budget price. (Fan, Tr. 1065, 1075; Scorsone, Tr. 5001). Price can be affected by the site location based upon costs associated with movement of materials, accommodations for the field craft

labor, storage, access roads, limitations on bridges, and limitations on tunnels. (Fan, Tr. 1075-76; Scorsone, Tr. 5001-02).

7.23 A determination as to whether traveling labor or local labor is used on a project is not included when developing a budget price. (Scorsone, Tr. 5002; Fan, Tr. 1065, 1075). The accuracy of the budget price is affected without such information. (*See* Fan, Tr. 1075).

7.24 Budget pricing does not require a customer to provide the supplier with information about the site conditions, as well as allowing someone from the bidding company to tour the job site to examine the access to the site and soil conditions. (*See* Stetzler, Tr. 6353; *see also* Glenn, Tr. 4126; see also Fan, Tr. 1065).

7.25 Relatively little time or effort is spent by a tank supplier in order to provide a budget price. (Patterson, Tr. 374; Stetzler, Tr. 6352-53; Fan, Tr. 969).

7.26 Budget prices include assessments of risk and contingency. (Price, Tr. 608-09; Scorsone, Tr. 5252; Simpson, Tr. 5366). Projects that involve an excessive amount of risk or unknown contingencies will receive higher budget prices. (Scorsone, Tr. 5003).

7.27 Years sometimes elapse between the time when a budget price is submitted and the time when a firm fixed bid price is actually requested. (Scorsone, Tr. 5004). In the interim, material and labor costs change. (Scorsone, Tr. 5004). A budget price does not attempt to account for the changes in costs over time, and as a result, budget prices often assume a high profit margin level. (Scorsone, Tr. 5004).

3. Firm Fixed Prices Are Prepared Differently And Are More Accurate

7.28 In contrast to budget prices, firm fixed bid pric

7.35 Costs can increase depending on when the work is done. (Scorsone, Tr. 5001). The time of the year of the construction is generally known when developing a firm fixed price. (*See* Carling, Tr. 4472; *see also* Scorsone, Tr. 4999-5002).

7.36 The exact location of the project site is known when developing a firm fixed price. (*See* Carling, Tr. 4472; *see also* Scorsone, Tr. 4999-5002). Price can be affected by the site location based upon costs associated with movement of materials, accommodations for the field craft labor, storage, access roads, limitations on bridges, and limitations on tunnels. (Fan, Tr. 1075-76; Scorsone, Tr. 5001-02).

7.37 A determination as to whether traveling labor or local labor is used on a project is included when developing a firm fixed price. (*See* Carling, Tr. 4472; *see also* Scorsone, Tr. 4999-5002).

7.38

7.41 Neither CB&I nor PDM intended to have sensitive information exchanged during the due diligence process, and in fact intended to avoid such exchanges. (Glenn, Tr. 4405-07; Scorsone, Tr. 5246-47).

C. ECONOMIC FINDINGS OF FACT

1. Foundation For Economic Opinions

7.42 Barry Harris is employed by Economists, Inc. in Washington D.C., and has been working there since 1985, except during 1992-1993 when he was the Deputy Assistant Attorney General at the Department of Justice. (Harris, Tr. 7152-53).

7.43 While in this position Dr. Harris was in charge of 80 or 90 professional economists, including financial analysts, had broad policy responsibilities, reported to the head of the Antitrust Division of the Department of Justice, and participated in decision making regarding Acquisitions and enforcements. (Harris, Tr. 7153).

7.44 Dr. Harris has authored eight to ten articles relating to Acquisitions. (Harris, Tr. 7156-57).

7.45 Dr. Harris has analyzed roughly 200 Acquisitions, both in private practice and for the government, and has testified in between 15 and 20 Acquisition cases, seven of which specifically involved a governmental challenge to a Acquisition, including Baker Hughes. (Harris, Tr. 7160-61, 7163).

2. Methodology

7.46 Dr. Harris believes that the Baker Hughes case is very similar factually, insofar as the products at issue were customized but made from a known technology, the market was very thin, shares were affected by individual jobs, other firms did the same work worldwide, and the government contended this did not mean these worldwide competitors could compete in the United States. (Harris, Tr. 7166-67).

7.47 Dr. Harris analyzed the competitive effects of the Acquisition of CB&I and PDM using the Merger Guidelines and using empirical data, by reading deposition and trial testimony, by looking at publicly available information such as websites, and by talking to CB&I

true; additionally Dr. Harris used past natural market experiments to make and test future

7.62 The second step is to ask whether a price increase would be profitable based on how much the entity could lose before a particular price increase would become unprofitable. (Harris, Tr. 7259).

7.63 It is then necessary to identify which costs are variable and figure out the variable contribution margin; the larger the contribution margin, the lower the critical loss, i.e. the level at which a price increase becomes unprofitable. (Harris, Tr. 7259).

7.64

7.70 Gerald Glenn, CEO of CB&I, stated that CB&I would not reduce the size of its engineering department, its project manager force, or its fabrication facilities if it lost 25 percent of its business in the relevant product markets. (Glenn, Tr. 4159

7.77 By contrast, Dr. Simpson's calculation indicates that a 5 percent price increase becomes unprofitable if CB&I loses one in four jobs. (Harris, Tr. 7342).

7.78 Ultimately, however, economic testimony indicates that regardless of whose calculation is correct, CB&I has already lost 18% of the post-Acquisition dollars that were available, thus at this point any price increase and subsequent loss of sales would be unprofitable. (Harris, Tr. 7342-43).

7.79 CB&I's state of mind is important to critical loss, and is important across all four product markets, because the important question is whether CB&I will behave in a certain manner. (Harris, Tr. 7260-61).

7.80 It is economically significant that CB&I has already lost projects since the Acquisition, which means that CB&I has already lost more business than it can afford to lose under critical loss analysis. (Harris, Tr. 7261-63).

7.81 This suggests that CB&I was not trying a price increase, but was rather getting out competed. (Harris, Tr. 7263).

b. CB&I's imperfect knowledge of its competitors' costs

7.82 Economic testimony reveals that under the FTC's theory that CB&I knows its competitors costs and is the low cost supplier, CB&I should be winning every job, but CB&I has not won every job and has instead already lost its "critical loss" as calculated by Dr. Simpson. (Harris, Tr. 7264, 7273, 7358-59).

7.83 Dr. Simpson admits that CB&I has imperfect knowledge of its competitors because products are sold through a sealed bid process; bidders must guess who the other bidders are, estimate their costs, and then predict what their bidd dTj 29.25 0 TDcertaior in a ce.06544E

7.84 Dr. Simpson agrees that CB&I can draw the inference from the fact that foreign tank companies are winning projects that that foreign tank companies have competitive prices. (Simpson, Tr. 3784).

7.85 Dr. Simpson admits that the knowledge that AT&V beat CB&I twice would have an effect on CB&I's pricing in the LIN/LOX tank market. (Simpson, Tr. 3829).

7.86 Dr. Simpson believes that the level of information available to CB&I will determine whether it is likely CB&I would impose a price increase. (Simpson, Tr. 3844-47).

7.87 Record evidence indicates that competitors may know the rankings of competitors who submitted bids on a project, but in the industry the actual prices submitted are almost never disclosed. (Jolly, Tr. 4761-62; Patterson, Tr. 350-60).

7.88 A rare instance of actual bids being made available to the competitors is where the customer is a public utility required to eventually make the bids public. (*See* Scorsone, Tr. 5010).

4. Economic Opinions In LNG Market

a. General conclusions

7.89 Economic testimony supports the view that there has not been any harm to competition in the U.S. LNG market as a result of CB&I's Acquisition of PDM. (Harris, Tr. 7194).

7.90 Further, economic testimony supports the view that the level of competition in the U.S. LNG market is robust; there are numerous bidders and prices have not risen. (Harris, Tr. 7195).

7.91 In addition, economic testimony supports the conclusion that entry in the LNG domestic tank market is easy. (Harris, Tr. 7248).

7.92 Further, economic testimony supports the conclusion that under the Merger Guidelines, entry is competitively significant in the LNG market in the U.S.. (Harris, Tr. 7254-56).

7.93 Finally, economic testimony supports the conclusion that there are entrants who are serious, qualified international producers and that they either already compete in the United States or have the ability to compete in the United States. (Harris, Tr. 7213).

5. Support For Conclusions

7.94 These economic conclusions are supported by the fact that customers in the U.S. LNG tank market are large, sophisticated energy companies, and are often assisted by construction or consulting firms. (Harris, Tr. 7206-07).

7.95 Additionally, these economic conclusions are supported by customer testimony indicating a belief that there is sufficient competition and that the competition in the U.S. LNG tank market is not harmed by the Acquisition. (Harris, Tr. 7297-7308).

7.96 That there are presently numerous suppliers, i.e. TKK with AT&V, Technigaz with Zachry, Daewoo with S&B, and Tractebel/Entrepose, available supports these economic conclusions. (Harris, Tr. 7209-13).

7.97 An economic evaluation of Skanska Whessoe indicates that because it now has both "brains and brawn", has been accepted as a bidder and the EPC for Dynegy, and is viewed by customers as a good supplier, it is a good competitor. (Harris, Tr. 7239-7240).

7.98 An economic evaluation of the TKK/AT&V alliance indicates that because customers have said good things about TKK, because of TKK's reputation, and because TKK won the Trinidad job, TKK is a viable entrant. (Harris, Tr. 7241-42).

7.99 An economic evaluation of the Technigaz/Zachry alliance indicates that because of its worldwide experience, its clear intent to enter the market, its experience in concrete, customer testimony, and Zachry's strength as a construction firm, it is a viable potential entrant (Harris, Tr. 7242-43).

7.100 An economic evaluation of competition in LNG market indicates that there are also potential entrants, which include Daewoo/S&B, Tractebel/Entrepose, MHI and IHI. (Harris, Tr. 7245.

7.106 **[XXXX XXXX]**

7.107 Economic testimony indicates that Fairbanks does not represent a price increase because it was a budget estimate for a tiny job. (Harris, Tr. 7278-79).

7.108 That the LNG tank market has changed in the last decade insofar as demand has changed, that there is a shift to double and full containment tanks, and that the competitors have changed supports the economic conclusions reached in this case. (Harris, Tr. 7219-21).

7.109 The economic conclusions reached in this case are supported by the fact that CB&I has won only 17-18% of the dollar amounts available, which means that CB&I is not able to profitably increase prices if that is what it is doing, and likely does not have better costs than its competitors. (Harris, Tr. 7223, 7264, 7358).

7.110 Dr. Harris' expert economic conclusions are supported by the Merger Guidelines, which state that a structural analysis is only valid if it is predictive (§§ 1.41 & 1.32). (Harris, Tr. 7227-32).

7.111 Economic analysis of the record indicates that entry is easy; which is supported by the fact that entrants already have sufficient engineering staffs and skills, it is not necessary to own a fabrication plant since often steel is prefabbed and imported anyhow, field labor can be hired easily, and subcontracting is not a competitive disadvantage. (Harris, Tr. 7249-54).

7.112 Further, that entry is easy is supported by the fact that the entrants are worldwide tank producers who can and have competed in the U.S.. (*See* Harris, Tr. 7249, 7251-52).

7.113 Expert testimony indicates that the omission of market changes affects Dr. Simpson's HHI analysis. (Harris, Tr. 7221-22).

7.114 Dr. Simpson, however, does not account for these changes in his structural analysis. (Harris, Tr. 7221).

7.115 For this reason, as well as due to Dr. Simpson's failure to consider changes in the market, Dr. Simpson's structural analysis is not useful. (Harris, Tr. 7227

76115

7.121 That entry is easy is supported by the Morse tank story, which represents a natural market experiment. (Harris, Tr. 7295-97).

7.122 The economic conclusion that competition has not been harmed in the LPG market is supported by customer views that prices have not risen since the Acquisition. (Harris, Tr. 7299-7300).

7. Economic Opinions In LIN/LOX Market

7.123 Economic testimony indicates that it is inappropriate to include spheres in the LIN/LOX market. (Harris, Tr. 7301-02).

7.124 Economic testimony supports the view that the Acquisition will not harm competition in the LIN/LOX market. (Harris, Tr. 7302).

7.125 That the skills needed to make an LNG tank are the same to make a LIN/LOX tank supports this view. (Harris, Tr. 7303).

7.126 An economic analysis of the Freeport job combined with the MG Industries job indicates that if CB&I can both be the lowest and the highest bidder on a project, it must not have good information about its competitors' costs and is trying to be competitive. (Harris, Tr. 7389-91).

7.127 That AT&V has won three of the five post Acquisition LIN/LOX projects supports the view that competition has not been harmed by the Acquisition in the LIN/LOX market. (Harris, Tr. 7308).

7.128 An economic analysis of Matrix indicates that its sale of Brown Steel will not affect its ability to compete in the LIN/LOX market. (Harris, Tr. 7308-10).

7.129 **XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXXX XXXXX**

are common and others have testified favorably about AT&V such as BOC. (Harris, Tr. 7387-88).

7.130 An economic analysis of the LIN/LOX market indicates that Dr. Simpson's structural analysis in LIN/LOX is not useful because it does not reflect the current competitive situation and fails to consider entry and changes in the market since 1990 since such as Praxiar spinning off CB&I and Graver. (Harris, Tr. 7311-13).

7.131 Economic testimony indicates that the analysis regarding entry barriers is the same as in LNG and LPG. (Harris, Tr. 7313-14).

7.132 An economic analysis of market behavior in the LIN/LOX market indicates that competition has not been harmed. (Harris, Tr. 7314-15).

7.133 Economic testimony supports the view that recent entrants constrain CB&I's pricing, as illustrated by the Freeport job. (Harris, Tr. 7315-17).

7.134 Economic testimony indicates that Dr. Simpson's belief that prices have risen in the LIN/LOX market, which is based on the testimony of Chung Fan, does not hold water because Fan's model contains too many erroneous assumptions, and the evidence (emails and testimony) contradicts Dr. Simpson. (Harris, Tr. 7318, 7383-92).

7.135 **[XXXX XXXX]**

8. Economic Opinions In TVC Market

7.136 Economic testimony supports the view that the Acquisition will not harm competition in this market because there is no business to speak of in this market, and the offer made by CB&I could remedy any problems created by the Acquisition. (Harris, Tr. 7325-28).

9. Economic Testimony Regarding Vertical Effects

7.137 Economic testimony indicates that CB&I's Acquisition of PDM did not result in vertical anticompetitive effects because CB&I does not have market power in the tank markets, and the EPC market is very competitive, as evidenced by Skanska/Whessoe at Dynegy and Black & Veatch and KBR. (Harris, Tr. 7329-30).

7.138 That CB&I sometimes tries to supply the entire facility is irrelevant to an economic analysis of the Acquisition since it is a business decision predating the Acquisition. (Harris, Tr. 7330-31).

10. Economic Testimony Relating To Exiting Assets

7.139 Economic testimony indicates that it is important for an economist to consider whether the acquired firm would have remained in the market but for the Acquisition. (Harris, Tr. 7331

7.142 This is supported by the fact that the FTC failed to consider whether two new companies would meet the same level of viability Dr. Simpson requires of entrants. (Harris, Tr. 7367-68).

7.143 There is support for the view that a break up is unsupported and unnecessary in the customer testimony regarding a break-up of CB&I and testimony of Gerald Glenn which indicates that remedy is not desired by customers and would be disruptive. (Harris, Tr. 7368-72).

7.144 Economic testimony indicates that in LNG bonding is an issue to be considered since it may be impossible for a break-up to restore any loss of competition. (Harris, Tr. 7372-73).

7.145 Economic testimony indicates that Dr. Simpson failed to do a thorough analysis with regards to remedy. (Harris, Tr. 7373-75).

12. Dr. Simpson Lacks Foundation

a. Generally

7.146 Dr. Simpson has never, in his professional career as an economist, had a job outside of an antitrust enforcement agency. (Simpson, Tr. 3616).

7.147 Dr. Simpson has never testified on behalf of a private business as an economist. (Simpson, Tr. 3616).

7.148 Dr. Simpson had not read approximately 20 percent of the trial testimony at the time he gave his expert opinions, and did not know whether that trial testimony would have influenced his opinion. (Simpson, Tr. 3626).

b. LNG

7.149 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Simpson, Tr. 5640-41).

7.150 Dr. Simpson believes that the costs of foreign LNG competitors put them at a competitive disadvantage, however Dr. Simpson has never seen the costs of the foreign competitors.

7.157 Dr. Simpson admits that foreign companies can build or engineer to API standards. (Simpson, Tr. 3954; 3955).

7.158 Dr. Simpson would not concede that hourly workers are free to work for companies other than CB&I because he "does not know the behavior of CB&I's hourly work force in intimate detail." (Simpson, Tr. 3964).

7.159 Dr. Simpson does not know whether Brian Price ever saw any bids for Dynegy. (Simpson, Tr. 5484).

7.160 Even if Dr. Simpson knew that Brian Price had never seen pricing for Dynegy, that would not change his view of Mr. Price's qualifications to testify about CB&I's pricing for Dynegy. (Simpson, Tr. 5485).

7.161 Dr. Simpson admitted that it was his "belief" that Mr. Carling cannot give an opinion about the effects of the Acquisition without having seen the Dynegy bids, but that Mr. Price and Dr. Simpson could give opinions regarding the effects of the Acquisition without having seen the Dynegy bids. (Simpson, Tr. 5498-99).

c. LIN/LOX

7.162 Dr. Simpson is not aware that AT&V was awarded the Hilsboro, Oregon LIN/LOX tank job. (Simpson, Tr. 3691-92).

7.163 Dr. Simpson admittedly did not study Chung Fan's analysis in great detail. (Simpson, Tr. 5592).

7.164 Dr. Simpson would not vouch for Chung Fan's analysis. (Simpson, Tr. 5593).

d. LPG

7.165 Dr. Simpson did not know whether Morse paid subsistence to its workers and did not know whether Morse was a union shop. (Simpson, Tr. 5555-56).

7.166 Dr. Simpson did not know that Morse used union labor on the Ferndale project even though it was a merit job. (Simpson, Tr. 5555-56).

7.167 Dr. Simpson could not recall whether Amy Warren, whose testimony he relied upon, was actually the person at Fluor who determined who the bidders would be for the SEA3 project. (Simpson, Tr. 5573).

e. TVCs

7.168 Dr. Simpson does not know that CB&I has not built a thermal vacuum chamber since 1980. (Simpson, Tr. 5609).

7.169 Dr. Simpson was not aware that the second to last thermal vacuum chamber CB&I built in Windsor, New Jersey, failed and can never be used. (Simpson, Tr. 5609).

7.170 Dr. Simpson does not know whether CB&I ever built a field-erected mailbox-shaped thermal vacuum chamber. (Simpson, Tr. 5610).

f. Dr. Simpson's reliance on documents about which he knows nothing

7.171 **[XXXXX XXXXX]** (Simpson, Tr. 4036-38).

7.172 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Simpson, Tr. 4037).

7.173 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Simpson, Tr. 4042).

7.174 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX]** (Simpson, Tr. 4043).

7.175 **[XXXXX XXXXX]** (Simpson, Tr. 4044).

7.176 Despite testifying regarding a chart based on CX-460, a chart which Dr. Simpson admittedly did not prepare or ask to be prepared, Dr. Simpson does not know whether the information contained in the underlying document was accurate, and despite having access to the actual underlying information (i.e. AT&V's financial statements), Dr. Simpson chose to rely on Dan Knight's assessment of AT&V rather than AT&V's own data. (Simpson, Tr. 3944-49).

7.177 On this chart, Dr. Simpson does not know whether the engineering capability is global or domestic. (Simpson, Tr. 3949).

7.178 On another chart based on the same underlying Dan Knight document (CX-460), Dr. Simpson does not know

7.183 Dr. Simpson relied on the PPI for “plates and structurals” but did not know what “plates and structurals” referred to. (Simpson, Tr. 5400-01).

7.184 Even though Dr. Simpson thought it would be more accurate to use CB&I’s actual Acquisition costs than the PPI, and even though Dr. Simpson could have asked for this information, Dr. Simpson relied on the PPI. (Simpson, Tr. 5407).

7.185 With regards to CX-1160, a document from Jeff Steimer to Luke Scorsone regarding the Williams estimate, Dr. Simpson does not know what Mr. Steimer’s foundation was for his comments. (Simpson, Tr. 5427).

7.186 Dr. Simpson did not know that CX-1160 was in the context of a bid review meeting. (Simpson, Tr. 5429).

7.187 Dr. Simpson did not know why CX-

7.192 Dr. Simpson does not know what the budget estimate given to Memphis Light and Gas was in 1994. (Simpson, Tr. 5452).

7.193 [Dr. Simpson does not know that a rough order of magnitude price is even less accurate than a budget estimate.] (Simpson, Tr. 5654-55).

7.194 Dr. Simpson does not know that a margin put on a budget estimate is for internal

document upon which he relies were ever fired. (Simpson, Tr. 3905-09). Dr. Simpson admitted that this would be relevant information to know. (Simpson, Tr. 3909).

7.200 Dr. Simpson does not know what foreign entrants are going in terms or training or in terms of money spent on entry. (Simpson, Tr. 3909-10).

7.201 Dr. Simpson does not know how long a period critical loss is measured over. (Simpson, Tr. 3868-69).

7.202 Dr. Simpson relies on Dr. Harris' notes from an interview with Luke Scorsone to determine fixed versus variable costs, however Dr. Simpson does not know whether the "significant decline" referred to in the notes was for more than 25% of U.S. LNG work or less than 25% of U.S. LNG work. (Simpson, Tr. 3887).

7.203

Yowell's deposition where he explicitly stated that he no longer believed the statement in his affidavit regarding reduced competition was true. (Simpson, Tr. 3633-38).

7.208 Dr. Simpson nonetheless testified that he was objective when he identified Mr. Yowell as supporting the conclusion that buyers believed that the Acquisition reduced competition. (Simpson, Tr. 3639).

7.209 Dr. Simpson cited to Mr. Carling's deposition testimony regarding Whessoe to suggest that Whessoe has a poor current reputation for building LNG tanks, even though Mr.

14. Dr. Simpson's Admissions

a. General

7.214 Dr. Simpson believes that he knows better than the management of the foreign competitors how successful they will be in their entry. (Simpson, Tr. 4016).

b. LNG

7.215 Dr. Simpson admittedly only knows a "little bit" about the regulations in the United States that govern LNG tanks. (Simpson, Tr. 3854).

7.216 Dr. Simpson admits that he believes that "the majority of customers believe that Whessoe can build an LNG tank in the U.S." (Simpson, Tr. 3993).

7.217 Dr. Simpson admits that even if the attempt by CB&I to get the Dynegy job in its entirety was an attempt to exercise market power, it failed. (Simpson, Tr. 5466-67).

7.218 Dr. Simpson admits that CB&I had a labor advantage in Trinidad. (Simpson, Tr. 3851).

7.219 Dr. Simpson admitted that full containment tanks require additional skill sets to single containment tanks. (Simpson, Tr. 3726).

7.220 Dr. Simpson believed that the Dynegy facility would use full containment tanks (Simpson, Tr.

7.224 Dr. Simpson believes that the concrete represents 30-40% of the cost in these tanks, which is a sizeable percentage of the job. (Simpson, Tr. 3737; 3738).

7.225 Nonetheless, Dr. Simpson believed CB&I had an advantage in building these tanks based on a single sales document, CX-364. (Simpson, Tr. 3741-42).

7.226 Dr. Simpson stated that we would take the fact that there would be more full containment tanks in the future into account in computing market shares. (Simpson, Tr. 3743).

c. LIN/LOX

7.227 Dr. Simpson concedes that Matrix has been able to enter and successfully engineer LIN/LOX tanks in the United States. (Simpson, Tr. 3952-53, 5605).

7.228 **[XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX XXXXX**

e. TVCs

7.231 Dr. Simpson admitted that "there is probably some level at which the amount of commerce affected would be de minimus, and if you're asking me would it make sense to get a remedy to preserve some de minimus level of competition, I can see instances where it would not be." (Simpson, Tr. 5585-86).

7.232 Dr. Simpson could not "emphatically say" that CB&I and PDM coordinated their bids on the Spectrum Astro job. (Simpson, Tr. 5617).

7.233 Dr. Simpson agrees that the fact that somebody says something "stupid" like what Dave Lacey said does not mean that management has acted on the stupid idea. (Simpson, Tr.

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g. Natural market experiments

7.238 Dr. Simpson believes that "natural experiments are among the most useful analysis in assessing potential competitive effects of a Acquisition." (Simpson, Tr. 3761).

7.239 Dr. Simpson admits that for a natural experiment to be used it does not have to be exactly a twin to the hypothesis being tested. (Simpson, Tr. 3855).

h. CB&I's state of mind

7.240 Dr. Simpson believes that firms try to choose their best bidding strategy with less than complete information. (Simpson, Tr. 3771).

7.241 Dr. Simpson admits that "CB&I's beliefs about its competitors will guide its behavior." (Simpson, Tr. 3771).

7.242 In the case of CB&I and PDM, Dr. Simpson believes that CB&I perceived PDM EC as an equally capable competitors and therefore had to price accordingly. (Simpson, Tr. 3773).

7.243 Dr. Simpson agrees that CB&I can draw the inference that that foreign tank companies have competitive prices. (Simpson, Tr. 3784).

7.244 Dr. Simpson believes that the level of information available to CB&I will determine whether it is likely CB&I would impose a price increase, but does not believe the knowledge that Dynegy was satisfied with the bids it received from foreign competitors would matter to whether CB&I is likely to impose a price increase. (Simpson, Tr. 3844-47).

i. Critical loss

7.245 Dr. Simpson admits that state of mind is important in determining critical loss. (Simpson, Tr. 3865).

k. Exiting assets

7.254 Dr. Simpson agreed that as an economist, whether a business would be liquidated is something to be taken into account. (Simpson, Tr. 5680).

7.255 Dr. Simpson admitted that the proper comparison for evaluating the Acquisition is the comparison between the post-Acquisition world and the world as it would have been had the Acquisition not occurred. (Simpson, Tr. 5701).

VIII EXITING ASSETS FINDINGS OF FACT

A. PITT DES MOINES, INC. BACKGROUND AND HISTORY

1. PDM Background

8.1 PDM was founded in 1892 by the Jackson Family. PDM went public in 1965 on the American Stock Exchange. In 1999-2000, the Jackson Family was the primary stockholder of PDM, owning approximately 30 percent of the stock. (Byers, Tr. 6731-32; Scorsone, Tr. 4791). PDM's Board consisted of a majority of the Jackson Family and its friends and acquaintances. (Byers, Tr. 6734).

8.2 PDM operated four lines of business with five divisions -- PDM Strocal, Water, EC, Bridge, and Steel Distribution. PDM was very decentralized with operations in the fabrication business, steel buildings, steel bridges, water tanks, and miscellaneous tanks like LOX/LIN, LNG, and petrochemical tanks. (Byers, Tr. 6731; Scorsone, Tr. 4778-79; G. Glenn, Tr. 4075-76).

8.3 PDM stock was thinly traded, meaning that there was very little activity on any given day -- some days no stock was traded, other days 100-200 shares moved. Being thinly traded, shareholders had difficulty selling large blocks of shares because the demand was not visible on the public market. (Byers, Tr. 6732-33; Scorsone, Tr. 4791-92).

2. PDM Organizational Structure

B. DELIBERATIONS OVER THE FUTURE OF PDM

1. PDM Considerations Regarding The Future Of The Business

8.11 Reducing or eliminating the Jackson Family stock was a goal of PDM. The Jackson family owned 2.8 million shares throughout their family, roughly 29-30 percent of the company. A fear in the marketplace was that W.R. Jackson, the patriarch of the family and founder of the company was 92 years old at the time -- the fear being that when he died, the family might liquidate its stock and 2.8 million shares would hit the market at the same time. That would have a pretty significant negative impact on PDM's stock price. (Scheman, Tr. 6909-10, 2916-17; Scorsone, Tr. 4791; RX 158 at 18).

8.12 PDM's Board asked PDM management to consider potential options for the strategic direction of the company's future in Summer 1999. Mr. Scorsone prepared a presentation to the PDM Board in August 1999 about strategies for going forward with the PDM EC Division. (Scorsone, Tr. 4781-82).

8.13 A strategic planning meeting was held at Nemoclin in Pittsburgh, PA to devise a list of options to provide to the Board. This laundry list included making a major acquisition, buying something unrelated, taking the company private, and selling the company. The motivation behind this decision was to increase shareholder value and focus the Jackson Family. Mr. Jackson was elderly and PDM management was concerned over the future of the business. (Byers, Tr. 6738-40; Scorsone, Tr. 4791).

8.14 This laundry list of options was presented to the PDM Board in Summer 1999, but no hard decisions were made at that time. (Byers, Tr. 6740). The various options presented to the PDM Board were to maintain the status quo, pursue acquisitions, declare a special dividend, conduct a stock repurchase, split into two separate companies, and the sale of the company. (Scheman, Tr. 2917-19).

2. PDM Decision To Sell The Company

a. PDM board evaluates alternatives

8.15 In November or December 1999, the PDM Board indicated to management that it wanted to pursue taking the company private. Here, the Jackson Family would make a tender offer and buy back all shares of PDM except for management's ownership. This plan was never implemented. (Byers, Tr. 6740-41).

8.16 At the February 2000 Board meeting, the Jackson Family indicated that it wished to take the company private. It was decided that the Family should hire its own investment banker. Polly Townsend, Bill Jackson, Sr.'s daughter, contacted a partner at Tanner &Co. ("Tanner") for an interview. As a result, Tanner was hired by the Jackson Family. (Byers, Tr. 6741-42; Scheman, Tr. 2911, 6907).

b. Tanner & Co. background

8.17 Tanner is an investment banking boutique, started in 1987, focusing on middle-market mergers and acquisition anywhere from $25 million to $400 million. (Scheman, Tr. 2910, 6906).

c. PDM board decides to sell the company

8.20 The decision to take PDM private was ultimately changed. In May 2000, Mr. Jackson, Sr. announced that the company were sellers, not buyers. This meant that PDM was for sale. (Byers, Tr. 6742).

8.21 Mr. Scorsone first learned that PDM's Board was intending to sell his EC Division in early May 2000. At that time, Mr. Scorsone learned that the Board had decided to sell the entire corporation. (Scorsone, Tr. 4790-91). Mr. Scorsone was told about the Board's decision to sell by Bill McKee. Mr. Scorsone was also told that he would have nothing to do with selling PDM EC or negotiating the sale. (Scorsone, Tr. 4792-93).

8.22 Investment bankers were interviewed in a "beauty-contest." The participants were Goldman Sachs and Tanner. Both firms made presentations to the Board. (Byers, Tr. 6742-43; Scheman, Tr. 2912, 6908).

3. PDM Board Directives And Constraints

8.23 The PDM Board and the Jackson Family wanted to create liquidity in PDM stock. That decision placed additional constraints on the ability to sell PDM because it eliminated an alternative form of consideration: stock. (Scheman, Tr. 6948-49).

8.24 The PDM Board gave PDM Management a directive that the consideration for such a deal had to be cash. Cash was important to increase shareholder value and be as liquid as possible. With the help of an investment banker, PDM felt that value would be returned to shareholders through a tender offer at the time the last division was sold, so as to avoid any assets being left in the company. (Byers, Tr. 6759-61).

8.25 PDM's Board also imposed a directive on PDM Management to complete a sale as quickly as possible to prevent the public viewing PDM as being in play and shopping the various divisions as part of a desperate "fire sale." (Byers, Tr. 6762-63).

C.

D. TANNER AND ITS EFFORTS TO MARKET PDM

1. Tanner Retained By PDM Board

a. Tanner's representation

8.30 Tanner' presentation occurred at the same Board meeting as Goldman on June 1, 2000. Shortly after this meeting, Tanner was retained by PDM. (Scheman, Tr. 2914-15, 7911-12, 6907-08; RX 25 at 2).

8.31 Day to day responsibilities at Tanner were handled by Mr. Scheman, Robert Fullerton, an associate, Michael Stanfield, and Harold Tanner, a named partner. Mr. Scheman coordinated and led the representation. Harold Tanner went to Board meetings. Mr. Fullerton assisted Mr. Scheman. (Scheman, Tr. 2912-13, 6908-09).

8.32 Tanner's contacts at PDM were Mr. McKee, Mr. Byers, Travis Stricker, Phil Elbert, Mike Braden (Water) and Mr. Scorsone (EC). (Scheman, Tr. 2914).

b. Tanner recommendations

8.33 Tanner, based on its combined years of experience, recommended that PDM sell off

8.36 Tanner concluded that there were "few other strategic buyers with adequate resources to acquire both Divisions." (RX 159 at 15). This conclusion was based on information concerning the industry, the companies identified by PDM, EC and Water managements, Tanner's growing knowledge of the industry, and phone calls from people expressing interest. (Scheman, Tr. 6913-14).

8.37 Due to historical connections between the EC and Water Divisions, the cost of separating these divisions may be as high as $5-10 million. (Scheman, Tr. 6922-23, 2959-60; RX 163 at 27).

8.38 The Board also adopted Tanner's recommendation to sell PDM in pieces. (Byers, Tr. 6755, 6757-58; Scheman, Tr. 2919). PDM management was instructed by the Board to work with Tanner in implementing the Board's directive at the June 1, 2000 meeting. (Byers, Tr. 6758).

8.39 Tanner informed the Board of its 6 month time frame to complete the sale. Mr. Byers did not believe such a time frame was possible, but had to proceed with due speed. (Byers, Tr. 6761-62).

c. Tanner responsibilities

8.40 Tanner assumed the responsibility of contacting potential purchasers and securing their level of interest, not the PDM Board or management. Any and all inquiries were directed to Tanner. (Byers, Tr. 6758-59).

8.41 Today, Tanner is no longer retained by PDM. Tanner's assignment concluded in the middle of March 2002 when PDM was acquired by Iron Bridge Holdings. (Scheman, Tr. 6909).

2. Tanner's Incentive To Maximize Shareholder Value

8.42 Tanner's compensation was structured such that it had an incentive to do the best work for the shareholders. (Byers, Tr. 6881-82).

8.43

ide. (Scheman, Tr. 6946-47).

8.44 In addition, T 0thaehad a fiduciary obligation to PDM and its shareholders. (Scheman, -82).

3. Tanner's Efforts To Sell PDM

a. Tanner's representation

8.45 fit and shareholder value. In so doing, T 0thae

Tanner's statements and investment banking experience in determining that there were or By -81).

8.46

Scheman, Tr. 6943 -44).

b. Tanner's marketing efforts

8.47 I

Scheman, Tr. 6944 -45).

8.48 Tanner's decisions to market PDM EC and Water were based on the years of experience of Mr. Scheman and all of his partners. (Scheman, Tr. 6945).

i. Press release

8.49 Mr. Scheman made efforts to sell PDM. These efforts included issuing a press release in July 2000 announcing that PDM had hired Tanner to explore a sale of the whole company and various companies. (RX 160 at 1). Such a press release is a curse and blessing for a public company because the process is now in the open, but disclosure requirements are triggered more quickly. However, it is a blessing because it is an advertisement in whatever publications run the news release to the world that you are selling your assets, so anyone who reads that and might be interested knows who to call. (Scheman, Tr. 6910-11, 2921-22).

8.50 Mr. Byers was also involved in issuing the press release. PDM and Tanner wanted to let the public know of PDM's intent to sell. Such releases help companies find interested purchasers. (Byers, Tr. 6884-85).

8.51 PDM was forced to use a press release issued under expedited circumstances imposed by the PDM Board. However, PDM benefited tremendously from early disclosure and interest. (Scheman, Tr. 6944-45).

8.52 Tanner ensured that the press release got into the hands of all relevant trade journals that deal with PDM's EC and Water Divisions. It was not that hard to get the word out -- in PDM's market, it was big news. (Scheman, Tr. 6945). In fact, the Jackson Family's decision to sell PDM and liquidate its assets was published in the Wall Street Journal. (Scheman, Tr. 6945-46).

ii. Inquiries and materials

8.53 Mr. Scheman and Tanner also answered inquiries as a result of this press release. Further, they called people to see if anyone was interested. Tanner developed materials to describe to potential buyers the various major asset groups, the divisions. Tanner

developed lists of potential buyers and worked over the summer to learn about the various divisions. Tanner did what investment bankers do -- over the summer of 2000 they prepared to market PDM and prepared lists of people who might or should be interested. (Scheman, Tr. 6911, 2922; RX 164; RX 165; RX 166).

8.54 Investment bankers would agree that it is a bad business decision to send marketing materials when you know that you will not be able to speak with potential suitors because of entering negotiations and a quiet period with another purchaser. It would damage your ability to sell something if one day you tell a potential buyer you can talk, and the next day you cannot. (Scheman, Tr. 6912-13).

8.55 PDM management represented to the Board that as of December 19, 2000, there was a thin market and no other serious potential purchasers identified. Tanner expressed its opinions and explained that the lending standards had tightened considerably. (Byers, Tr. 6776-77; RX 28 at 2). PDM was only looking for serious purchasers given the time and expense associated with the selling process. PDM did not have the time to wait and look around. (Byers, Tr. 6777-78).

4. Potential Purchasers Of PDM's EC And Water Divisions

8.56 In the EC industry, substantial companies existed but that does not mean that they were appropriate buyers. (Scheman, Tr. 6916).

8.57 It is typical for investment bankers not to waste their time chasing down potential purchasers who are unlikely to be able to consummate a transaction. (Scheman, Tr. 6948).

8.58 Adequate resources are an important consideration to prevent going down a road with one company and be left with nothing, saving an embarrassment and damaged property. (Scheman, Tr. 6916).

8.59 In attempting to maximize shareholder value, Tanner is not concerned with keeping assets within the same industry as currently utilized. In fact, if a potential purchaser wished to make entirely different types of tanks than PDM and offered the largest amount of money, Tanner would have been satisfied. (Scheman, Tr. 6951-52).

8.60 There are two types of potential purchasers: strategic buyers and financial buyers. A strategic buyer is someone who operates a business that would be somehow related to the business for sale. A financial buyer is someone who offers money and is in the business of buying businesses, not operating within the industry of the business for sale. (Scheman, Tr. 6914).

a. Nassau Point investors ultimately were not an interest purchaser

8.61 Nassau Point Investors ("NPI") are a private equity firm, a financial buyer. They had previously bought a company in the tank maintenance and repair business, and had seen the Tanner press release. NPI called to express a potential interest at the same time as Tanner was preparing marketing materials. NPI later followed up, but Tanner judged them to be very unlikely to have the means to effect an acquisition. After discussion with NPI, both parties walked away from a potential deal. It is almost unheard of that a financial buyer is going to buy into a business that is losing money, especially in the environment that existed in the lending community two years ago, and even today. (Scheman, Tr. 6929-31).

b. Enron was not an interested purchaser

8.62 PDM approached Enron about purchasing the EC Division but Enron was exiting the fabrication business to move in a new direction. (Byers, Tr. 6764).

c. Matrix was not a viable purchaser

i. Matrix lacked interest

8.63

plan to liquidate because Matrix stock was smaller than that of PDM. (Scheman, Tr. 6931-33; RX 163 at 37).

8.68 Matrix would not be able to offer stock because PDM stock was illiquid. The Jackson overhang would have had a disastrous effect on the price of stock, as much as a $5 decrease in price in a given day. The PDM Board and shareholder goal was to increase the liquidity of stock. One way to do so would be to sell the whole company. Another method would be to sell in pieces. Therefore, Tanner believed that a stock deal would not fit into the overall plan. Plus, PDM shareholders would have been better positioned with PDM stock than with Matrix stock given Matrix's stock's poor performance. (Scheman, Tr. 6934-38).

8.69 Matrix wanted to purchase PDM's fabrication facilities in Clive, IA and Warren, PA, but not PDM's Provo, UT facility. (Vetal, Tr. 441-42). The Clive, IA and Warren, PA facilities were under the direction and control of PDM Water. (Byers, Tr. 6782). The Provo, UT shop was under the direction and control of PDM EC. (Byers, Tr. 6781).

8.70 PDM EC and Water Divisions were being sold together because they shared many services, human resources, physical plants, and it was considered impossible at the time to split them apart. Mr. Byers personally believed based on his experience that it was not practical to split the two divisions apart. Further, there was a consequence in switching the assets of the two divisions around. For example, the Water Division could not have performed all of its work at the EC fabrication plant in Provo, Utah. Therefore, PDM would not have consummated a transaction that included only the EC Division and certain assets of the Water Division. (Byers, Tr. 6780-82).

iii. Matrix lacked financing

8.71 Based on the financials, Mr. Scheman believes that the largest transaction Matrix could have financed was $20 million, maybe less depending on the downturn felt by Matrix similar to PDM EC. (RX 163 at 37). This figure is based on Matrix's financials and the assumption that it would have to borrow money -- Matrix's borrowing capacity might have been zero at the time given a combined (Matrix and PDM EC) EBITDA of $1 million. (Scheman, Tr. 6933-34, 6938-39).

8.72 In 2001, the net worth stated that Matrix assets were $83.7 million and liabilities were $63.1 million. (Vetal, Tr. 424-25). Matrix would have financed the PDM purchase through bankers, as opposed to private equity or multiples of cash flow. (Vetal, Tr. 438-39).

8.73 Matrix knew that PDM had many businesses unrelated to Matrix. Mr. Vetal had not put together a formal financing package. (Vetal, Tr. 421). Mr. Vetal had no idea of the amount of financing Matrix could have obtained, especially in light of the poor performance of the EC Division. (Vetal, Tr. 439, 444).

8.74 Mr. Vetal never asked its bankers when discussing possible financing for a PDM acquisition whether the bankers would finance the purchase of a division that had lost $30 million the previous year. (Vetal, Tr. 441).

iv. Matrix lacked knowledge of PDM's EC and water divisions

8.75 Mr. Vetal did not know anything about PDM's shared assets or the PDM asking price. (Vetal, Tr. 423, 440).

8.76 Mr. Vetal did not know whether the Clive and Warren facilities were apart of the PDM EC or Water Divisions, and if PDM would have sold those facilities without the entire divisions. (Vetal, Tr. 435-36, 444).

8.77 Mr. Vetal did not know if the liquidation value of the company was higher than its value as a going concern. (Vetal, Tr. 441).

8.78 Mr. Vetal based his opinion on only publicly available information, such as the consolidated balance sheet. (Vetal, Tr. 420).

d. Pasadena Tank was not a viable purchaser

8.79 Corporate Finance Associates contacted Tanner relating to their client Pasadena Tank and expressed an interest in looking at the EC Division alone. Tanner expressed PDM's intent to sell EC and Water together. (Scheman, Tr. 6939-40; RX 166 at 2).

8.80 Pasadena Tank had two fatal strikes against them. Pasadena was a smaller company than Matrix and privately held. While Matrix at least had stock to trade, Pasadena did not. Its only option was debt financing, and Tanner felt that Pasadena was very unlikely to obtain enough financing to offer an attractive price. Second, PDM wanted to sell both divisions together. (Scheman, Tr. 6940-41).

8.81 It is damaging to selling prospects and to the business itself if offering memorandum and books are sent to everybody. As a result, only viable candidates should receive such materials. Therefore, Pasadena Tank was not sent these materials. (Scheman, Tr. 6940-41).

e. No foreign tank contractors were interested or viable purchasers

8.82 **[XXXXX XXXXX] XXXXX XXXXX XXXXX XXXXX]**

E. PDM EC DIVISION'S POOR PERFORMANCE

1. PDM EC Division Experiences Substantial Losses And Is "Troubled"

8.83 After

whose earnings are projected to decline by 80 percent would be described as having trouble. (Scheman, Tr. 6916-18, 2922-23, 2950-51).

8.89 PDM Water, on the other hand, had a history of making a 10 percent profit yearly. (Byers, Tr. 6786).

2. Reasons Behind PDM EC's Substantial Losses

8.90 The year 2000 was a weak sales year for PDM EC, and EC had 2 jobs not performing well -- the Sea-

8.93 The Puerto Rico LNG import terminal suffered from late engineering, which again pushed back procurement and certain deliverables of drawings to construct the facility. PDM had large owner-directed changes at the final months of the project. The PDM final plans did not schedule any extra time, so the customer directed PDM had to hire additional field labor. For reassurance reasons, the client insisted air lifting fabricated pieces of the tank to the site. All of these reasons were costs to PDM. (Scorsone, Tr. 4828-29). There was a business dispute over these issues, which PDM ultimately settled through management meetings. The client withheld monies on the project. (Scorsone, Tr. 4830-31; Izzo, Tr. 6482).

8.94 AT&V was very suspicious of PDM, believing that PDM was very poor at estimating, coordination, and marketing. (Cutts, Tr. 2534).

8.95 These problems occurred in 2000 right up to the eve and even post-Acquisition by CB&I. (Scorsone, Tr. 4831).

3. Projections Regarding PDM EC Division

8.96 The EC Division offering memorandum stating that the Division was expected to return to profitability was created before the EC Division turned downward. (Byers, Tr. 6875). Likewise, in a marketing document, Tanner predicted that the EC Division would return to profitability in 2001. However, the market changed unexpectedly and turned a lot worse than expected. (Scheman, Tr. 6918-19, 2952-54; RX 160 at 9-10).

8.97 Mr. Scorsone made projections for the PDM EC Division's performance for 2002: $212 million. Of that figure, only $1at ,6 -0.r. 4831).

accurate. Nor does Mr. Scorsone regard his projection for PDM EC's sales from 2000 to 2002 to be accurate either. (Scorsone, Tr. 5242-45).

8.98 As President of the EC Division, Mr. Scorsone's compensation and responsibilities were tied to the financial performance of that division. EC's most profitable year was in 1999. The profit margin that year was 4 percent, and total revenues were about $188 million. The year 2000 was very difficult, and not a good year for the EC Division. In 2000, the EC Division did not make any money. (Scorsone, Tr. 4823-24). For the year, EC lost $8 million despite that number at one time approaching $30 million. (Scorsone, Tr. 4824-25).

8.99 Mr. Byers, in his regular course of business, reviewed performance projections of each division in order to create a consolidated projection for the Board. Mr. Scorsone predicted PDM EC would earn a profit in 2001. Mr. Byers felt Mr. Scorsone's projection was optimistic, typical of Mr. Scorsone's tendency to overstate profitability of his division. Mr. Byers altered Mr. Scorsone's projection to a break even year for 2001. (Byers, Tr. 6752-54, 6876).

8.100 Even with the EC Division's dire losses and poor performance in 2000, Tanner's best estimate for 2001 was that the company would make $4.8 million. (RX 163 at 6). Given these facts, Mr. Scheman, relying on his years of experience in the industry as an investment banker, believed it would have been very difficult to convince a buyer that EC would make $5 million after losing $9 million the year before under those market

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F. CB&I ACQUISITION

1. CB&I State Of Mind Regarding The Acquisition Of PDM

8.101 Prior to 2000, CB&I never considered purchasing the assets of PDM. (G. Glenn, Tr. 4076). Investment bankers approached CB&I with various combinations that might make business sense. (G. Glenn, Tr. 4076-77). CB&I never considered PDM because it was a public company and not for sale. Also, the overall company was larger than the resources CB&I had to purchase it. Finally, there were businesses PDM operated that did not appeal to CB&I and were not complimentary. (G. Glenn, Tr. 4077).

8.102 Mr. Glenn received a call in 2000 stating that the Jackson Family had made a decision to sell the company for cash and go out of business. Specifically, at that time, the EC and Water Divisions were offered to CB&I. (G. Glenn, Tr. 4077-78). Then, PDM's reputation in the two lines of business was very good -- they did good work and were recognized in the marketplace by being on everyone's bid lists. (G. Glenn, Tr. 4078). CB&I competed against PDM in the United States, but not internationally. (G. Glenn, Tr. 4078).

8.103 After receiving this call, CB&I hired an investment banker for a fairness opinion. CB&I ultimately purchased PDM's EC and Water Divisions on February 7, 2001. (G. Glenn, Tr. 4079). CB&I's advice from its investment bankers was to buy with consideration in a form sufficient to afford the transaction and keep the Jackson Family happy -- thus stock versus cash. (G. Glenn, Tr. 4254-55).

8.104 CB&I purchased the PDM Divisions as a major opportunity to utilize the resources to supplement CB&I's resources to compete in the global LNG business. Second, it would make CB&I larger for purposes of credit lending, financing, and insurance premiums. (G. Glenn, Tr. 4080-81). CB&I also sought efficiencies in terms of duplication -- thus

the elimination of fabrication capacity, equipment, personnel, best practices, and cost reduction. (G. Glenn, Tr. 4081).

2. CB&I And PDM Relations And Negotiations

a. Letter of intent

8.105 CB&I signed a letter of intent ("LOI") with PDM in August 2000. After signing the LOI, CB&I performed its due diligence. A projected November 2000 closing date was set. The actual closing date was extended several times before finally closing February 7, 2001. (Byers, Tr. 6764-66).

b. CB&I substitution of stock for cash

8.106 The initial form of consideration specified in the LOI was $94 million, all cash and no stock. CB&I later approached PDM and stated that it was not able to provide all cash consideration. CB&I wanted to substitute half of the initial purchase price for stock. CB&I's offer was not well accepted by PDM because stock inhibited the ultimate tender offer transaction. (Byers, Tr. 6766-67).

8.107 At the time of the PDM acquisition, CB&I was in the process of purchasing Howe Baker, a process contractor namely operating in gas refining and processing. (G. Glenn, Tr. 4086). This transaction was consummated in December 2000, approximately two months before the PDM deal. (G. Glenn, Tr. 4087).

8.108 CB&I and PDM developed a contentious relationship as a result of the substitution of stock for cash. In fact, PDM management was prepared to walk away from the deal if CB&I did not meet management's terms in December 2000 and January 2001. (Byers, Tr. 6767). Mr. Byers expressed to CB&I and Rich Goodrich that PDM was "about ready to throw in the towel on a deal with CB&I, and just start over . . . Time is running short." (Byers, Tr. 6768-69; CX 1474).

8.109 As part of a deal, CB&I offered to repurchase with a "collar" the stock used as consideration for the deal with PDM prior to the final tender offer. This measure gave PDM the protection against stock price fluctuation that had been feared. (Byers, Tr. 6775-77).

8.110 Mr. McKee was authorized to agree to payment from CB&I for EC and Water of $93.5 million: $44 million cash, $25 million stock, and $24.5 million letter of credit. (Byers, Tr. 6788; RX 28 at 4). However, CB&I was not willing to close the transaction on these terms because of the financial deterioration of the EC Division. (Byers, Tr. 6789). The deal was eventually struck at $84 million on December 22, 2000. (Byers, Tr. 6789-91; CX 388 at 2).

c. PDM pressure to close the transaction

8.111 Six weeks passed between the authority to close by the Board and the closing. PDM again applied pressure to close by February 8, 2001. On that date, PDM was to hold a Board meeting. (Byers, Tr. 6792-93).

3. Post-Closing Circumstances

8.112 Once CB&I got into the PDM financials, PDM had projects not performing well and accommodations had to be made. (G. Glenn, Tr. 4255-56). After the closing, CB&I sought and obtained a price adjustment of $6.5-7 million after the discovery of substantial losses from PDM's foreign subsidiary in Venezuela during a year-end audit. (Byers, Tr. 6793-94). Tw (6795246 Tc (-)lj). T0.0126 j -83.25 -27.75 -TD 38.111

8.114 CB&I never attempted to negotiate downward the purchase price of the Water Division. CB&I's $93.5 million was at the high end of Tanner's projections, but the purchase price eventually fell by $22 million. (Byers, Tr. 6873-75).

G. LIQUIDATION

1. Tanner Recommended Liquidation

8.115 Tanner believed that had the CB&I deal fallen apart, there was a "high probability" that PDM would have liquidated the EC Division. (Scheman, Tr. 6952; RX 163 at 29).

8.116 Had the deal with CB&I not closed on February 7, 2001, and given the state of the industry, PDM EC would have been liquidated -- most likely at the low end of the liquidation range due to deteriorated financing conditions. (RX 163 at 7, 28). The potential buyers who would have been contacted had the deal not gone through would not have paid more than the liquidation value. (Scheman, Tr. 6924-26).

8.117 The uncertainty associated with liquidation does not necessarily provide a seller like PDM an incentive to conduct a thorough search before liquidating the EC Division if you could get more money elsewhere. The time spent in failing to sell may be very harmful to the already lower liquidation value. (Scheman, Tr. 6923-24).

2. PDM Management Recommended Liquidation

8.118 PDM management began looking for alternatives on how to sell PDM EC and Water. Management considered selling PDM Water to Mike Braden, president of PDM Water, in an LBO and liquidating PDM EC. (Byers, Tr. 6769-70). This alternative was studied with the help of Tanner, and discussed with Bill McKee. Mr. Byers and Mr. McKee decided to present this recommendation to the PDM Board. (Byers, Tr. 6770, 6773).

8.119 PDM did not have time to pursue another potential purchaser and still comply with the Board's directives. Moreover, finding another potential purchaser would have been

difficult given the financial performance and continued deterioration of the EC Division. (Byers, Tr. 6773-74).

8.120 PDM threatened to liquidate the company if CB&I did not close the deal. (G. Glenn, Tr. 4079-80).

8.121 In fact, Mr. McKee told Mr. Scorsone in December 2000 that if the deal fell through with CB&I, EC would be liquidated. (Scorsone, Tr. 4839) (state of mind).

8.122

a decision as to the best approach to proceed if the CB&I

8.132 Mr. Vetal was aware that Graver's equipment was auctioned off in a liquidation sale. In fact, Matrix purchased heavy press and fabrication equipment from Graver in that sale. (Vetal, Tr. 442-43).

8.133 AT&V attempts to hire former Graver employees every year. (Cutts, Tr. 2570). In fact, AT&V employs former Graver foremen with cryogenic experience, and any others that AT&V would be interested in have retired. (Cutts, Tr. 2570-71).

IX. REMEDY FINDINGS OF FACT

A. COMPLAINT COUNSEL'S PROPOSED REMEDY SEEKS TO BREAKUP CB&I INTO TWO COMPETING ENTITIES

9.1 Complaint Counsel's proposed remedy seeks a breakup of CB&I. Complaint Counsel's Notice of Contemplated Relief included within its Complaint seeks the "[r]establishment by CB&I of two distinct and separate, viable and competing businesses . . . ." (RX 79 at 8).

9.2 During opening statements, Complaint Counsel stated that "[r]elief in this matter must re-establish two independent viable and competitive entities." (Krulla, Tr. 101).

B. COMPLAINT COUNSEL FAILED TO PRESENT ANY RECORD EVIDENCE SUPPORTING ITS PROPOSED REMEDY

9.3 The only "testimony" supporting Complaint Counsel's requested remedy was provided by its expert economist Dr. John Simpson. Dr. Simpson is not a fact witness, he has no background in breaking-up companies, and did not have any fact evidence available to him to offer any opinions rey0o,d4 Tw (up c1-.- Tc 1.61nhi offeeestimony]eiP p companj 17.25U98 60's

C. NO REMEDY IS NECESSARY

1. CB&I's Acquisition Of PDM Did Not Cause Any Competitive Harm

9.6 There is no need to institute a remedy because of the competition that exists and the entry that has occurred in each of the relevant product markets. (Harris, Tr. 7375-76).

9.7 The relevant product markets are "robust" competitive environments where CB&I has a difficult time competing. While CB&I wins some projects in the relevant products markets, it faces strong competition that continually takes projects away from CB&I due to their competitive strength. (Scorsone, Tr. 4881-82) (state of mind).

2. Customers Do Not Favor A Breakup Of CB&I

9.8 Complaint Counsel's expert witness was unable to identify one customer who supports the remedy proposed by the FTC. (Simpson, Tr. 5718).

9.9 CB&I's acquisition of PDM has given LNG customers additional "comfort" in the bidding process because CB&I is now a larger company with more financial assets. (Bryngelson, Tr. 6154). LNG customers have "some real concerns" about Complaint Counsel's proposed remedy and believe it would be a disadvantage to breakup CB&I. (Sawchuck, Tr. 6077; J. Kelly, Tr. 6265; Bryngelson, Tr. 6155).

9.10 LIN/LOX customers also believe that there is benefit to CB&I's acquisition of PDM. LIN/LOX customers believe a breakup would harm the industrial gas industry. (Hilgar, Tr. 1540).

D. A BREAKUP WOULD CAUSE MORE HARM THAN GOOD TO THE RELEVANT PRODUCT MARKETS

1. A Breakup Is Not Feasible

9.11 CB&I's customers and competitors alike have each recognized that "it would be pretty difficult" to breakup CB&I into two separate and competing entities. (Outtrim, Tr. 808-09).

9.12 Complaint Counsel's expert witness does not "know exactly how [the proposed remedy] would be implemented." (Simpson, Tr. 5715).

9.13 There is insufficient evidence in the record to support the governments suggested remedy of a breakup. (Harris, Tr. 7375-76).

2. A Breakup Would Have A Significant Impact On CB&I's Other Non-Relevant Product Markets

9.14 The relevant products are not the only products that are made by CB&I's Industrial Tank Division. (Scorsone, Tr. 4843). In fact, the relevant products constitute a very small percentage of sales from CB&I's Industrial Tank Division. (Scorsone, Tr. 4844). CB&I performs a majority of its work in markets and product areas other than the relevant product markets. (Glenn 4168).

9.15 CB&I's Industrial Tank Division also constructs standard flat bottom storage tanks, pressure spheres, pressure vessels, specialty plate structures, bins, hoppers, aqueducts, wind tunnels, and essentially any other ty gm3i46 Tc.6 that ifandaCB&I

entity. In order to provide a new company with sufficient work, these clauses would have to be waived by the customer, re-negotiated, or breached by CB&I. (Glenn, Tr. 4168-69).

9.17 Many of CB&I's contracts also contain key personnel clauses which require CB&I to maintain the same personnel for the duration of a project. Removing or replacing those employees would create numerous contractual issues. (Glenn, Tr. 4168-69).

4. A Breakup Would Not Create A Low Cost Producer

9.18 Any remedy imposed must create two low cost companies, the remedy proposed here may actually harm competition if it fails to produce two lost cost competitors but rather creates two high cost competitors. (Harris, Tr. 7367-68; 7375-76).

9.19 Instituting a breakup as a result of a finding of competitive harm in one market will likely cause significant harm in each of the other markets because it will remove a competitor and replace it with a high cost competitor. (Harris, Tr. 7375-76).

9.20 The potential of any separated company to compete in the relevant product markets must be evaluated with the same standards that are used to evaluate any other competitor seeking entry into the market. Since the FTC has not performed such an analysis, it is unclear if a breakup of CB&I will help competition more that it would harm it. (Harris, Tr. 7375-76).

5. Both Companies Created From A Breakup Of CB&I Would Be Unable To Satisfy Customer's Financial Guarantees

9.21 CB&I in its current state is often to small to qualify for the financial guarantees on some projects. If CB&I were forced to breakup, the two newly formed companies would certainly be even smaller and therefore even less likely to qualify for projects. Both companies created from a breakup would be unable to provide the financial guarantees

required for projects in the relevant product markets. (Glenn, Tr. 4168). **[XXXXX XXXXX]** Prior to the acquisition CB&I was struggling in terms of letters of credit, financing and insurance premiums. (Glenn, Tr. 4080).

9.22 LNG customers believe that both companies that emerge from a breakup of CB&I would suffer a significant disadvantage with respect to required financial guarantees as compared to the other large LNG tank suppliers in the market. (Izzo, Tr. 6511-12; Bryngelson, Tr. 6155-56; Sawchuck, Tr. 6077-78). For example, shortly before the

[their] bid list." (Izzo, Tr. 6511-12). LNG customers "seriously doubt" that a broken-up company would be large enough to qualify for LNG projects. (Izzo, Tr. 6511-12). For many customers, financial viability of a prospective bidder is important to a pre-qualification process. (Rapp, Tr. 1313).

9.25 Association with a larger company can assist a particular division because the larger financial size will enable the division to qualify for larger projects. For example, PDM's Bridge Division benefited from its association with the Water and EC Divisions by being able to bond larger projects. After the sale of the Water and EC Division, much of PDM Bridge's bonding capacity was lost. (Byers, Tr. 6738).

9.26 CB&I's acquisition of PDM has benefited LNG customers because CB&I is now a larger company with more financial assets to go against in the event of a problem. CB&I's acquisition of PDM, and as a result its larger financial size, is a benefit to LNG customers. (Bryngelson, Tr. 6154).

6. A Breakup Would Significantly Disrupt Ongoing Projects

9.27 CB&I has over 300 ongoing projects at any given point in time over a number of product markets. A breakup would certainly cause disruption to most if not all of the ongoing projects, regardless of the product market, due to shared personnel and resources.

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in two and therefore removing those people would disrupt a large number of projects. (Glenn, Tr. 4168).

9.30 Within PDM the EC Division and Water Division shared resources, personnel, equipment, and facilities. Due to the intermingling of resources, PDM decided to sell the two divisions together because it was impossible to sell one without the other. (Beyers, Tr. 6780-6781).

9.31 LNG customers are concerned with the prospect of splitting up CB&I personnel. LNG customers " have some real concerns about" the possibility of CB&I's engineering department being divided between two companies. (Sawchuck, Tr. 6077-78). Due to the small number of people within CB&I who work on engineering the projects in the relevant product markets, it would be " real difficult to split one person in half" when the entire group consists of a total of only one or two people. (Sawchuck, Tr. 6077-78).

E. NO EVIDENCE HAS BEEN PRESENTED TO DETERMINE IF A BREAKUP IS APPROPRIATE IF A VIOLATION IS FOUND IN SOME BUT NOT ALL OF THE RELEVANT PRODUCT MARKETS

9.32 Complaint Counsel's expert witness did not consider what the appropriate remedy would be if a violation is found in only some but not all of the relevant product markets. If a violation is found in only one market, Complaint Counsel's expert stated that it would "require quite a bit of thought" in order to determine what a proper remedy would be. (Simpson, Tr. 5586).

9.33 Complaint Counsel has failed to conduct an analysis to determine the effect of a breakup would have on all of the markets if it is determined that a remedy is required for only one market. Attempting to institute a remedy for the benefit of one market could harm competition in the remaining markets. (Harris, Tr. 7375-76).

F. OTHER REMEDIES ARE AVAILABLE

1.

new entrants are familiar with the companies that purchase the relevant products in the U.S., but do not necessarily know how to locate the correct contact person at each customer. (Cutts, Tr. 2559-60).

9.39 Another option could include CB&I selling some of its assets to its competitors. At one time, ATV was interested in purchasing some of PDM's assets including the Provo plant and certain automated welding equipment from CB&I after the acquisition. (Cutts, Tr. 2411-12). ATV was interested in acquiring some of PDM's assets in order to increase some market share. (Cutts, Tr. 2533).

Dated: March 27, 2003

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, Greg J. Miarecki, hereby certify that on this 27th day of March, 2003, I served a true and correct copy of Respondents' Corrected Proposed Findings of Fact and Conclusions of Law, by hand delivery upon:

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