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FILE NUMBER
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March 20, 1997

Assistant Attorney General
Antitrust Division
Department of Justice
Washington, D.C. 20530

Re: Post-Tensioning Institute: Request for Business Review Letter Pursuant to 28 C.F.R. § 50.6.

Dear Sirs:

This request for a Business Review Letter is made on behalf of the Post-Tensioning Institute ("PTI"), a trade association incorporated under the Illinois Not For Profit Corporation Act and representing its members from its offices at 1717 W. Northern Avenue, Suite 114, Phoenix, Arizona 85021. PTI is a 501(c)(6) entity for the purpose of classification under the Internal Revenue Act. This Request pertains to the Institute's Certification Program for Plants Producing Unbonded Single Strand Tendons.

A. Introduction.

1. What PTI Does.

PTI is a trade association incorporated in 1976. Its membership is comprised of companies and individuals engaged in the construction of prestressed concrete (and other) structures employing a specific technique called "post-tensioning". It is the ultimate goal of PTI to encourage the use of "post-tensioning" as an alternative to other, competitive systems and materials in the construction industry. (See Section E, p. 25

below) See also Exhibit A, By-Laws of the Post-Tensioning Institute. Among its many functions and activities, PTI sponsors technical seminars and programs, and engages in research directed toward the integrity and safety of structures built using post-tensioning engineering methods described more fully below.

PTI also reviews and monitors industry issues regarding safety and integrity of structures using post-tensioning engineering methods and products. PTI further works with governmental and other "code" bodies involved with the construction industry in the regulation of the design and construction of post-tensioned structures.

Membership in PTI is open to all companies and persons both in the United States and overseas who manufacture post-tensioned systems, those associated or affiliated with the components for such systems and professional engineers, architects, contractors, and other individuals[1]. The issue presented by this request for a Business Review Letter deals only with those who manufacture and/or undertake contracts for the supply of unbonded post-tensioning systems.

2. The Unbonded Plant Certification Program.

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[1] PTI's membership is made up of a number of different categories of membership. This request only pertains to "Company Members" who conduct business within the North American continent and only those entities within this category that produce "unbonded single strand tendons". These Company Members are voting members of PTI's Board of Directors as are other Company Members which do not produce these products.

"Associate A" and "Associate B" and "Affiliate" members are in the business of supplying products, components and other materials important to the industry. Each of these membership classes select one of their group to sit on the Board and they would not be affected by the proposal embodied in this Request. Likewise, PTI's foreign members (outside the U.S., Canada and Mexico) and, PTI's largest constituency, professional members, are also not affected by this Request. See PTI By-Laws Article III, Section 3 Exhibit A.

In 1989, PTI created an additional service to the industry, a Unbonded Plant Certification Program (the "Program" or "Certification Program") which independently inspects and certifies the plant operations of a particular segment of the post-tensioning industry, namely Company Members having plants and facilities producing "unbonded single strand tendons," which are described below. This Program is based on PTI's "Specification For Unbonded Single Strand Tendons ("Specification", See Exhibit B)[2], and PTI's "Manual for Certification of Plants Producing Unbonded Single Strand Tendons" ("Manual", See Exhibit C) which are also described below.

The Program is, at present, voluntary and is open to both members of PTI and non-members. Certification is administered by PTI and executed by an agency independent of PTI or its members.

3. **What PTI Proposes**.

PTI is proposing to make the Program for certification of plants a pre-requisite for eligibility for initial and continuing membership within PTI for manufacturers of unbonded post-tensioning systems. PTI would continue to make the Program available to non-members without requiring PTI membership.

This proposal, again, would not apply to membership categories other than that of Company Member. It is in regard to this proposal that PTI seeks the Business Review Letter. Thus, it is important to stress that the proposal PTI wishes reviewed pertains only to present and potential members of PTI eligible for Program participation. It is also important to note that PTI has not and does not plan to take any action whatsoever directed at persuading anyone, including its other members, not to do business with, otherwise contract with, or take any action against those companies not desiring to enter the Certification Program or join PTI.

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[2] The specification, which sets performance criteria (as contrasted to product criteria), was originally adopted by PTI in 1985 after numerous meetings open to all industry participants.

PTI respectfully calls to the Department's attention the fact that at least two other associations representing competitive industries have developed similar prerequisite programs: the Metal Building Manufacturers Association which received a positive Business Review Letter dated September 29, 1995 respecting a similar program and the Prestressed/Precast Concrete Institute ("PCI") which has created a similar prerequisite. We submit that the motives of those other industry organizations in requiring facility or plant certification are the same as PTI's: creation of a credible membership commitment to providing products resulting in the best structural safety and integrity.

4. What is Post-Tensioning and How Does It Relate To This Request?

We believe that it is important for the Department to understand post-tensioning and PTI's dedication to making this excellent building technique a competitive alternative to other systems available to owners, contractors, architects and engineers.

Post-tensioning is a method of reinforcing (strengthening) concrete or other structural elements by utilizing high strength steel wires (called prestressing strands or tendons). It is an "active" reinforcing method as the strands are stressed (i.e. pulled) by hydraulic jacks usually at one end and then locked off at both ends by special anchorage devices. This process locks in the pre-determined stresses (force) of the strands as designed by the design professional to strengthen the concrete and support the structure.

A "tendon" is defined as a complete assembly consisting of the anchorages, the prestressing strand and any corrosion inhibiting coating and/or sheathing (plastic) surrounding it. This is the term most commonly used with respect to unbonded post-tensioning so the expression "unbonded single strand tendons".

The more traditional "passive" approach employed by conventional reinforcing depends on the concrete cracking first before the reinforcing steel bars, which are cast directly into the concrete and bonded to it, can be utilized to develop the strength and the support for the applied loads or forces.

Post-Tensioning actively imparts a given force into the concrete or structural member which is opposite in direction to the expected force generated by the loading on the structure.

Although "unbonded post-tensioning systems" require specialized knowledge and expertise to manufacture, fabricate, assemble and install, the concept upon which they work can be easily understood. Imagine a series of childrens' wooden blocks with holes drilled through them into which a rubber band is inserted. If one holds the ends of the rubber band loosely, the blocks will sag. Post-tensioning is demonstrated by placing on the ends of the rubber band two wing nuts and winding the rubber band tightly so all the blocks are held tightly together, as a result of pulling (stressing) them together, this is the same as putting them under compression. If one holds the ends of the screws after winding, the blocks will remain straight or may sag slightly. The tightened rubber band is comparable to a post-tension tendon being stretched or pulled by powerful hydraulic jacks (winding the wing nuts) and held in place by special wedge-type anchoring devices larger than the opening through which the prestressing strand passes (this is similar to the hole in the blocks been smaller than the larger wing nuts). The system is "unbonded" when the prestressing strand is surrounded by plastic sheathing and thus, the prestressing strand does not bond to the concrete and can move freely during the tensioning process even after the concrete has dried and set.

The process of fabricating, assembling and installing is a matter of basic engineering but the pitfalls of low quality at any point can be catastrophic in nature. For instance if one takes a hand off the wing nut or otherwise lets go of the rubber band, the suspended blocks will fall. If the rubber band for any reason breaks, the same dramatic failure may occur. This is also the situation with unbonded post-tensioned systems. Poorly fabricated, assembled and installed systems can fail, causing potentially serious safety and integrity concerns. One major cause for these safety and structural concerns can be the poor manufacture, fabrication and assembly from plants which do not meet the best practices and latest specifications. By the time purchasers of poorer quality systems learn of a problem, it maybe too late.

5. Reasons for the Business Review Letter Request.

PTI's request for the Business Review Letter explained in detail below, has as its sole concern the safety and structural integrity factors that result from the proper manufacturing, fabricating and assembling of the unbonded post tensioning system. Care must be taken in using the correct strand (rubber band) which is very strong, yet will stretch. Since it is made of steel, it is subject to environmental exposure, corrosion, weakening and failure: Returning to the analogy, imagine the consequences of a broken rubber band. Therefore, the strand is coated with a special grease to assist not only in freely move through the plastic sheathing, but also to provide a moisture-resistant coating to protect against the infiltration of water and corrosion of the steel strand. Corrosion may lead to failure of the tendon and, in turn, compromised building structure.

In addition, the plastic sheathing must be of a certain quality and thickness to provide a dependable water tight covering for the strand and provide an opening through the concrete which is to be reinforced. Finally the storage, shipping and care in handling of tendons and allied components is essential. Such materials as wedges and anchors which hold the strand in tension within the hardened concrete must be suitably matched for use with the strand supplied. Due to the dynamic interrelationship of the component parts of a post-tensioned system during the transferring of force to wedge-type anchors, the anchor casting and the wedges must be considered as one unit. Different component parts should never be mixed without proper test data. The Certification Program requires manufacturers to maintain the highest standards in their checking and inspection processes to ensure not only high quality product, reliable traceability, but also, ultimately structural integrity and safety in the final structure.

Quality-driven certification programs generally result in better quality in production. In the case of this Program, safe and effective systems are a more likely result when compared to plants which may neglect proper manufacture, assembly, and shipping of post-tensioning systems. This Program is designed to assure quality in tendon production, environmental safeguards, proper grease, sheathing, anchorage storage and shipping. Participation by all relevant PTI Company Members in this Program

strengths the Program credibility in the eyes of all post-tensioning manufacturers and, more importantly in the perception of the purchasers of post-tensioning and competitive systems.

6. Industry Practices Which Necessitate PTI Plant Members Participation In The Program.

Because unbonded post-tensioning is a complex construction methodology, it is subject to widely varied competencies, and integrity in manufacture and application. PTI members understand the immediate need to assure and enhance the integrity and safety of buildings and structures using unbonded products. PTI members also understand that they must set a credible example for quality in the industry. Unfortunately, the quality of unbonded single strand tendons varies significantly, except among Program participants. The Program helps to maintain sound and safe construction. A first step in fostering that goal is, in PTI's view, requiring all current and prospective members of PTI which produce unbonded single strand tendons to participate in the Program.

Not all members of PTI producing unbonded single strand tendons operate certified plants at this time. (See Section I.3 herein.) On the other hand, in the past there have been some post-tensioning producers who were not members of PTI who operated certified plants. Other non-members, however, operate non-certified plants. It is PTI's intention to require those unbonded producers seeking initial and continued PTI membership to be certified as a means to assist in PTI's goal of safety and integrity of concrete structures.

It must be stressed that it is PTI's intention, also however, to continue to make certification available to all plants whether or not they are owned by members of PTI. To elaborate, those manufacturers seeking PTI Company membership would, under this proposal, be required to become first, a certified plant and second, maintain plant certification during membership, if they choose to remain members. PTI does not propose to compel any company to attain or maintain Company membership in PTI, rather, PTI believes that those unbonded manufacturers desiring Company membership should set an example of quality in their operations.

PTI believes, as shown below, that by requiring certification as a pre-requisite for current and prospective members who produce unbonded single strand tendons, the public and the construction industry will benefit without creating anticompetitive effects. PTI believes that in a highly competitive industry an effective organization of Member Companies must have credibility with its customers, owners, architects, engineers and contractors.

7. What PTI Requests Pursuant to 28 C.F.R. § 50.6.

PTI thus respectfully requests a Business Review Letter pursuant to 28 C.F.R. § 50.6 expressing the Department's view that restriction of PTI Company membership to Company Member producers of unbonded post-tensioning having certified unbonded plants is not anticompetitive.

B. What is the Post-Tensioning Institute ("PTI")

1. History Since Creation

PTI was originally a division of the Prestressed/Precast Concrete Institute (PCI), but in 1976, it formed its own non-profit organization to better serve its members and the industry as a whole. In its initial press release it stated, "The formation of the new Institute, which represents nearly all post-tensioning companies in the United States and Canada, reflects the rapid and sustained growth in the use of post-tensioned construction concepts in North America. PTI will provide expanded technical services to engineers and contractors and will continue to foster structural research and technical development activities which were formally conducted by the Post-Tensioning Division of the Prestressed Concrete Institute."

Since its inception in 1976, PTI has continued to expand its membership base and now has members worldwide in nearly 35 countries. It has directed its efforts toward development of specifications and design recommendations, publication of technical literature on applications of post-tensioning, and dissemination of information on post-tensioning design and construction technology. It now has 16 different publications, five slide lectures, various technical notes and state-of-the-art computer programs for design of post-tensioned

structures. Several of PTI's publications have become the recognized standards in the industry both in the United States and abroad.

PTI is represented on several key committees involved in the development of the national building codes. It works closely with other associations and organizations in promoting construction safety and long-term durability of building components. It has developed a certification program for unbonded plants and is working on developing a certification program for post-tensioned systems. In its short 20-year history, the Post-Tensioning Institute has become to be recognized as the premier authority on post-tensioning information, technology and design.

2. Membership History

The Post-Tensioning Institute started in 1976 with 16 Company members, 10 Associate A members, 7 Affiliate members and 150 Professional members. Despite various mergers, consolidations in the industry over the years, PTI's present membership base is now as follows:

17 Company Members
7 Associate A Members
11 Associate B Members
13 Affiliate Members
12 Foreign (Company, Associate A&B) Members
732 Professional Members

3. Membership History Contrasted With Market History

Likewise with the market history, the industry has gone through some ups and downs. The building market peaked in 1985 at 40,367 tons, representing 57% of the 70,795 ton total post-tensioning market at that time. The slab-on-ground (S.O.G.) market, in contrast, represented 13.7% (9,730 tons) in 1985. However, by 1994 it was at 30,164 tons (41.1%) of the 73,283 ton U.S. market, while the building market had fallen to 18,601 tons (25.5%). The Canadian market tonnage was added in 1990 and by 1994 represented 6,578 tons.

In 1976, the total post-tensioning market was 17,499 tons and in 1977 was 22,021 tons. By 1994 this had grown to 79,862 tons.

Below is some data on the three major markets for post-tensioning from 1976 to 1994: buildings, including parking structures, bridges and "slabs on ground" almost exclusive foundation slabs for residential homes.

Year	Total Market	Buildings	Bridges	S.O.G.
1977	22,021	9,188 (41.7%)	3,232 (14.7%)	6,063 (27.5%)
1983	54,150	26,284 (48.5%)	11,152 (20.6%)	11,257 (20.8%)
1985	70,795	40,367 (57.1%)	15,619 (22.1%)	9,730 (13.7%)
1990	65,021	39,350 (60.5%)	14,997 (23.1%)	6,975 (10.7%)
1994	79,862	19,814 (24.8%)	21,112 (26.4%)	30,164 (37.7%)

PTI Membership from the same time frame.

Year	Company Members	Associate Members	Affiliate Members	Foreign Members	Professional Members
1977	16	14	11	---	537
1983	11	4	5	---	680
1985	18	4	11	---	790
1990	14	5	10	---	926
1994	18	15	23	8	791

4. Membership Population/Demography

a. Post-tensioning Members

Currently PTI has 17 Company post-tensioning members (also referred to herein as "Member Companies"). They range in size from large national organizations to local regional members. There are four Member Companies in Canada representing all the post-tensioning companies in Canada from East to West coast. There are 14 members in the U.S. (one is an international company with offices both in Canada and the U.S.), and these are located in all areas of the U.S.

	Company	Location
1.	AMSYSCO, Inc.	Addison, IL
2.	Cable Concrete Structures, Inc.	Stone Mountain, GA
	" " " "	Las Vegas, NV
	" " " "	Knoxville, TN
	PTSI/Div. of CCS, Inc.	Miramar, FL
	" " " " "	Kingston, Jamaica
	" " " " "	Panama, Rep. of Panama
3.	Canadian BBR, Inc.	Agincourt, Ontario Canada
	" " "	St. Laurent, Quebec, Canada
4.	Con-Force Structures, Limited	Vancouver, BC, Canada
5.	Continental Concrete Structures, Inc.	Alpharetta, GA
6.	D.R. Parks & Associates, Inc.	Waterford, MI
7.	Dywidag Systems Int'l, USA, Inc.	Bolingbrook, IL
	" " " " "	Flushing, NY
	" " " " "	Bedford, NH
	" " " " "	Lincoln Park, NJ
	" " " " "	Baltimore, MD
	" " " " "	Tucker, GA
	" " " " "	Milford, OH

	" " " " "	Arlington, TX
	" " " " "	Florissant, MO
	" " " " "	Long Beach, CA
	" " " " "	Portland, OR
	" " " " "	Littleton, CO
	" " " " "	San Ramon, CA
	Dywidag Systems Int'l, Canada, Inc.	Concord, Ontario, Canada
	" " " " "	St. Bruno, Quebec, Canada
	" " " " "	Surrey, BC, Canada
	" " " " "	Calgary, Alberta, Canada
8.	Freyssinet International	Vélizy, France
9.	GSI Post-Tension	Ft. Worth, TX
	" " "	Dallas, TX
10.	Harris P/T	Stoney Creek, Ontario Canada
	" "	Delta, BC, Canada
11.	International Post-Tension, Inc.	Leander, TX
12.	Mexpresa	Mexico City, Mexico
13.	Post Tensioning Services of Texas, Inc.	Dallas, TX
	" " " "	Houston, TX
14.	P.T.E. Strand	Hialeah, FL
15.	Suncoast Post-Tension	Houston, TX
	" " "	Austin, TX
	" " "	San Antonio, TX
	" " "	Phoenix, AZ
16.	Tech-Con Systems	Slidell, LA
17.	Williams Form Engineering Corp.	Grand Rapids, MI
	" " " "	Austell, GA
	" " " "	Blue Bell, PA
	" " " "	Portland, OR
	" " " "	Tukwila, WA

"	"	"	"	Allen, TX
"	"	"	"	San Diego, CA

b. Associate A Members

Currently PTI has seven Associate A level members; one Canadian (West coast), one Mexican and five U.S. members who manufacture or sell prestressing steel strand. Again, they are located throughout the country.

	Company	Location
1.	Cablesa, Inc.	Houston, TX
	Alto Carbono S.A. de S.V.	Queretaro, Qro, Mexico
2.	The Crispin Company	Houston, TX
3.	Florida Wire & Cable, Inc.	Jacksonville, FL
	" " " "	Henderson, NV
	" " " "	Shreveport, LA
	" " " "	Blue Springs, MO
	" " " "	Fallsington, PA
	" " " "	University Park, IL
	" " " "	Webster, TX
	" " " "	Ontario, CA
	" " " "	Fife, WA
4.	Insteel Wire Products	Mt. Airy, NC
5.	Sumiden Wire Products Corp.	Stockton, CA
	" " " "	Dickson, TN
	" " " "	Dublin, CA
	" " " "	Capistrano Beach, CA
6.	Titan Steel & Wire Co., Ltd.	Surrey, BC, Canada
7.	TrefilARBED, Inc.	New York, NY

c. Associate B Members

There are 11 current members of this group and represent a variety of suppliers to company members. They manufacture or sell components and/or equipment used in post-tension systems such as anchors, wedges, jacks etc.

	Company	Location
1.	Aztec Concrete Accessories, Inc.	Bloomington, CA
2.	Enerpac	Butler, WI
3.	General Technologies	Stafford, TX
4.	Hayes Industries	Sugarland, TX
5.	InCast Anchorage Systems, Inc.	Gulf Breeze, FL
6.	Intermet Foundries, Inc.	Troy, MI
7.	Jacks and Accessories	Pomona, CA
8.	Post Tension Product Mfg., Inc.	Seagoville, TX
9.	Power Team-Div of SPX Corp.	Owatonna, MN
10.	Precision Screw Products Co., Inc.	Grand Prairie, TX
11.	Shell Oil Products Company	Houston, TX

d. Affiliate Members

We have 13 current members in the membership class and they represent various companies in a variety of markets associated with post-tensioning.

	Company	Location
1.	Carlton Construction, Inc.	Lake Charles, LA
2.	CECO Concrete Construction Corp.	Kansas City, MO
3.	Conco Cement Company	Concord, CA
4.	Cumberland Engineers & Contractors	Martinez, CA
5.	Richard Goettle, Inc.	Cincinnati, OH
6.	L.H. Sowles Company " " " " " "	Minneapolis, MN Spokane, WA Billings, MT
7.	M D Steel	City of Industry, CA
8.	No Fault Industries	Baton Rouge, LA
9.	Schnabel Foundation Co.	Sterling, VA
10.	Specialty Steel	Garden Grove, CA
11.	Steele Founcations, Inc.	Washington, DC
12.	Stress Express, Inc.	Laguna Hills, CA
13.	Stress Tech Corporation	Rigeland, MS

e. <u>Professional Members</u>

In December 1996, PTI had 732 Professional members of the Institute. Again, they represent professionals associated with various post-tensioning market segments and are located throughout the U.S., Canada, Mexico and overseas.

The breakout was as follows:

Professional Members	U.S.	621
	Canada	42

Mexico	1
Foreign	54
Student	14

f. Foreign Members

As of December 31, 1996, PTI had 12 Foreign members, 10 of these were foreign post-tensioning Company Members, one was a Foreign Associate A and one was a Foreign Associate B member.

The following is a list of the PTI foreign members and the country of origin.

	Company	Location
1.	Amalgamated Prestressing (Pty) Ltd.	South Africa
2.	BBR Construction Systems (M) Sdn. Bhd.	Malaysia
3.	Florida Post Tensioning Systems Corp.	Philippines
4.	F.M. Betton Tensioning (Israel) Ltd.	Israel
5.	Freyssinet S.A. (Pty) Ltd.	South Africa
6.	L & M Prestressing Pet Ltd.	Singapore
7.	PBL Group Limited	Thailand
8.	Posten Engineering Co., Ltd.	Thailand
9.	Tensacreto, S.A.	Colombia
10.	Unistress Concrete Systems, Inc.	Philippines
11.	Belgo Mineira	Brazil

12. Hormipret S.R.L. Bolivia

5. Non-Member Population/Demography

There are approximately 19 companies in the United States and Canada who would qualify as post-tensioning Company Members but who were not members of the Institute at the end of December 1996. In 1994, they accounted for approximately 36% (28,900 tons) of the total tonnage supplied by the post-tensioning industry. However, the largest three companies combined had a total volume of 22,100 tons, i.e. (27.6%) of the total post-tensioning market in 1994. The other sixteen companies represent small regional suppliers.

The list of companies not members of PTI are as follows:

	Company	Location
1.	Alumillo Steel	Benecia, CA
2.	American Strand	Dallas, TX
3.	AVAR	Campbell, CA
4.	Contech Systems Ltd.	Delta, BC, Canada
5.	Houston Post-Tensioning, Inc.	Houston, TX
6.	J.L. Davidson Company, Inc.	Santee, CA
7.	KLG	Denver, CO
8.	Lang Tendons	Toughkenamon, PA
9.	Northwest Post-Tensions	Ravendale, WA
10.	PPT, Inc.	Shreveport, LA
11.	PTC, Inc.	Everett, WA

12.	Post-Tension of Nevada	Las Vegas, NV
13.	Ready-Cable	Dallas, TX
14.	RPS Cable Corp.	Fontana, CA
15.	Stresstek Post-Tensioning Systems	San Jose, CA
16.	Superior Post-Tensioning	Dallas, TX
17.	Travis Foundation	Houston, TX
18.	Tristeel, Inc.	Dallas, TX
19.	V.S.L. Corporation	Raleigh, NC
	" "	Atlanta, GA
	" "	Dallas, TX
	" "	Miami, FL
	" "	Philadelphia, PA
	" "	San Jose, CA
	" "	Washington, DC

6. Approximate Non-Member Market Share

Membership in PTI is not a necessity or prerequisite to competition in the markets described. Indeed, many unbonded post-tensioning producers are actively competing in the market. The unbonded market share for non-members vs. PTI Member Companies is approximately 26% to 74%. Objectively speaking, the quality of their products, however, varies considerably. Some non-members produce excellent products. However, the reputation of unbonded applications and post-tensioning generally has suffered from those who create substandard products. Non-PTI and non-certified unbonded post-tension procedures continue to result in product of varying quality.

Requiring PTI Member Companies to achieve and maintain certified status is just one step in PTI's goal of making unbonded post-tensioning an acknowledged safe, structurally sound and competitive alternative to other forms of construction. Education and marketing are also essential elements of this goal. These efforts continue, but credibility of PTI members remains an issue.

C. Industry Background.

1. Introduction

Concrete and the structures made of it are ubiquitous and essential to the construction industry and society. This PTI request deals with one specific, and not well-known, but highly effective, engineering aspect of concrete construction, post-tensioning. PTI endeavors to promote the use and application of post-tensioning as an alternative to other more-widely used and more well known methods in order that better, safer, more durable and versatile structures can be built.

Before going into the specific business practice of which PTI seeks the Department's review, some engineering background may be helpful to a full understanding of post-tensioning.

2. Concrete Construction.

Concrete is a widely-used engineering material consisting of a hydraulic cementing substance (usually portland cement), aggregate, water, and often controlled amounts of entrained air or other additives.

Concrete is initially a plastic, workable mixture which can be molded into a wide variety of shapes. Strength is developed in the hydration reaction between the cement and water. The products, mainly calcium silicates, calcium aluminate, and calcium hydroxide, are relatively insoluble and bind the aggregate in a hardened matrix.

Concrete has a wide variety of applications. In buildings it is used in footings, foundations, columns, beams, girders, walls, slabs, floor slabs, roof units--in short, all important building elements. Concrete not only meets structural demands but also lends itself readily to architectural treatment. Other important applications of concrete are in road pavements, airport runways, retaining walls, dams, bridges, etc.

3. Plain and reinforced concrete - Concrete is considerably stronger in compression (i.e., compressed or squeezed) than in tension (i.e., pulled apart or bent). For structures required to carry only compressive loads, such as

massive gravity dams and heavy foundations, no reinforcement is required, and the concrete is consequently called "plain concrete". When the structure will involve tensile stresses (forces which tend to pull the concrete apart), such as the loads generated by automobiles on the floor decks in parking structures, steel bars ("rebars") or wires/strand ("tendons") are embedded in the concrete as reinforcement. As vertical loads are applied to the reinforced concrete beam or slab, it deflects or sags. The concrete at the top of the beam resists the compression that occurs as the top surface shortens, while the concrete at the bottom elongates and cracks under tension. As this occurs, the reinforcing steel picks up its share of the load by stretching, which generates a tensile stress in the steel. When the load is removed, both materials release; the stresses they carry decrease; and the beam recovers all or most of the deflection. This type of concrete is called "reinforced concrete".

4. **Prestressed concrete**

An extension of this reinforcement principle is prestressing. In reinforced concrete, steel bars are located wherever tensile stresses (the forces which tend to pull concrete apart) are expected. Likewise, in prestressed concrete, tendons are also placed at the location of expected tension; but in this case, they are first stretched or tensioned. The force in the stretched tendons is used to further precompress push together the concrete. The precompression counteracts the tensile stresses from the applied loads. This induced precompression in the concrete greatly increases its resistance to any expected tensile stresses, such as cars passing over a supported parking deck.

There are two basic types of prestressed concrete pretensioned and post-tensioned. Pre and post refer to whether the steel is tensioned before (pre) or after (post) the concrete is cast.

5. **Pretensioned prestressed concrete** Pretensioning usually is done in a factory where precast, prestressed concrete products are produced.

In the factory, product forms are placed on a casting bed as long as 400 to 600 feet. Abutments strong enough to hold

the prestressing force are located at each end of the casting bed. The prestressing steel, a standard high-strength, steel 7-wire strand is held at one abutment and stressed with a hydraulic jack and anchored at the other like a taut rubber band.

After the steel strand is stressed, the concrete is cast. When the concrete has reached the required strength, usually between 3500 psi ("pounds per square inch") and 4500 psi, the force in the prestressing steel is transferred from the ends of the abutments into the concrete. By cutting the prestressing steel at the abutment, the strand like the rubber band, wants to return to its former length, but is prevented from doing so by the bond created between the steel strand and the surrounding concrete. The bond between the steel and the concrete precompresses the concrete and puts all or most of the cross section into compression.

6. Post tensioned Prestressed Concrete

Now we come to the focus of this request:

(a) Post-tensioned prestressed concrete - Post-tensioned prestressed concrete is cast in place at the job site, not in a factory. The unbonded tendons to which this Request pertains are produced at a plant and delivered to the construction site. The Unstressed prestressing steel strand with the coating of corrosion inhibiting grease covered by plastic sheathing are carefully placed and profiled in the forms. The concrete is poured into the forms and allowed to reach the required strength (dry hardened concrete). The tendon (prestressing steel strand) is anchored at one end inside the hardened concrete. At the other end of the concrete slab a hydraulic jack is attached to the tendon. At this end called the live or stressing end the tendon is stressed to the required force by stretching (or pulling) on the steel strand. Wedges are installed inside the anchor casting which hold the prestressing steel strand in place once the hydraulic jack is removed. The jacking force is thus transferred permanently into the concrete through the anchors.

Remembering our analogy involving childrens' blocks, there are a number of critical elements in unbonded construction. In addition to the function of the plastic sheathing to act as a bond breaker between the concrete and the

prestressed strands and to provide protection against damage by mechanical handling, it also serves to form a barrier against intrusion of moisture and chemicals to the prestressing steel strand. Similarly, the strand coating material, commonly referred to as "grease", reduces friction between the strand and the plastic sheathing, but again, it also serves a dual function in providing added protection against corrosion.

Anchorages are another critical element especially in systems utilizing the wedge/anchor principle and are crucial to the integrity of the system. The anchorage consists of an iron casting in which the strand is gripped by a two-piece wedge. After the concrete has dried, hardened and obtained the necessary strength, the strand is then stressed and the conical wedge grippers are inserted around the strand into a conical hole in the iron casting to provide the gripping action to the strand. After the hydraulic jack releases the force and is removed, the released force now in the tendon, pulls the wedges into the anchor, creating a tight lock on the strand. The anchorage system, consisting of wedges and anchors thus maintain the applied force in the tendon which in turn is transferred to the surrounding concrete. The beneficial force placed on the tendon is solely maintained by the anchorage.

(b) Development of Post-Tensioning Markets

The early development of the prestressed concrete industry in the United States and Canada, which for practical purposes started in the early 1950's, was originally oriented toward factory production of precast-prestressed elements for highway bridges. However, during the 1960's, the use of unbonded tendons, described below, for job site building floor systems became more widespread; and other new applications started to emerge in the use of post-tensioned foundations for single and multi-family residences on expansive and compressible soils, and in the use of prestressed rock and soil anchors for a variety of tie-back and tie-down structural functions. The use of unbonded post-tensioning in the nuclear industry for containment vessels also began in the 1960's.

As a result of these new markets, and a more widespread awareness of the advantages of post-tensioning among engineers, architects and owners, the use of post-tensioning increased more than 400 percent in the period 1965-1985. The

economic and structural advantages provided by post-tensioning which have generated this remarkable increase in usage include: reduce structural depth for concrete building elements; water tight construction, virtually crack-free slabs; control of deflection; the esthetic potential of cast-in-place concrete; and, longer spans at very economical cost. In addition to these advantages, the increase in the use of post-tensioning is related to the development of the capability of post-tensioning materials fabricators to provide services and materials to meet a wide variety of job requirements. Nonetheless, post-tensioning remains a extremely small factor in the construction industry. Conventional concrete techniques, structural steel, precast and other systems hold a vast market share advantage over post-tensioning. (See Section E, p. 25).

Along side the growth in the new post-tensioned building technology, the normal learning curve required for quality construction produced situations resulting in some substandard quality and unsafe construction. Today, most companies which supply and install post-tensioning materials have a background of many years of successful experience from which they can provide assistance to architects, engineers, and contractors assuring the construction of safe, reliable structures.

(c) Why is quality of unbonded post-tensioning product crucial?

It is very important to understand that apart from the immediate economy of meeting construction budgets, a major concern of owners is the safety, long-term maintenance and the durability of the system selected. This is especially true for unbonded post-tensioning construction where due to the rapid growth mentioned above, shortcomings inherent in some of the early unbonded post-tensioning systems, coupled with lack of adequate specifications and poor workmanship, some buildings and parking decks constructed with unbonded tendons have suffered from premature deterioration and failure. From a statistical point of view, the bulk of the unbonded post-tensioned buildings in North America have performed well, and are providing their design-intended service. The poorer performing projects with the lower quality unbonded systems, which used marginal quality materials, have caught disproportionate professional, media and public attention. Thus, the quality of all unbonded systems are

now under increased, and significant scrutiny. Thus, the safety and durability of unbonded tendon systems has become a major issue in the owner's/designer's building materials selection process.

PTI has as one of its critical objective to encourage the use of safe and durable unbonded tendon systems. And thus, the Program was designed and implemented in 1988 to fulfill this critical goal. Requiring PTI members who produce unbonded systems to become and maintain certification is a crucial component in achieving this objective.

Today's unbonded tendons, if manufactured to the PTI's current Specification can provide the safety and durability performance that is in line with other components used in the building construction and the expectations of the owner/designer. For instance, where the environment is aggressive, tendons specifically designed for aggressive environments must be used.

D. <u>What is the market for Unbonded Post-Tensioning?</u>

As an aid in the Department's understanding of the lack of an anti-competitive effect of the Program as proposed, it will be helpful to understand the markets for unbonded post-tensioning. Some of the applications of post-tensioning include:

1. High and low rise residential and office buildings.
2. Concrete parking structures.
3. Foundations for single and multi-family homes on expansive soils.
4. Commercial and industrial floors.
5. Reservoirs.
6. Retaining walls and tie-back walls.
7. Grandstands and stadiums.
8. Special structures such as: nuclear containment vessels, oil drilling platforms, and floating barges etc.

E. With What Techniques Does Unbonded Post-tensioning Compete?

Unbonded post-tensioning competes with the following, but note that unbonded post-tensioning has a extremely small (1%) percent of the estimated market:

1. plain/conventional concrete structures (45%)
2. structural steel (45%)
3. precast structures (3%)
4. hybrid systems (6%)

These systems are similar in cost; some are higher or lower depending on the individual construction site, format and design. It is PTI's goal to become more competitive in this market. PTI believes that a credible commitment to quality is one essential element to that end.

F. What Are The Economic Barriers To Entry To The PT Market?

The approximate cost of establishing an unbonded post-tensioning plant is only between $100,000 - $300,000. Thus, entry to the market is relatively inexpensive when compared to a precast plant or a structural steel facility, which could range into a ten-fold higher expense.

The difference in cost between establishing a PTI certified unbonded plant and an unbonded plant which is not certified is (a) the yearly Certification "Inspection" fee, of $2,800 and (b) the cost of maintaining a quality control program which ensures continuing certification, this is anywhere in the range typically of $ 0 to $1,000 per year. PTI proposes, as has been our practice, to keep the Program open to non-members of PTI.

G. What are the Non-economic Barriers to Entry to the PT Market?

The primary barrier to entry to the unbonded Post-tensioning market is technical, and market expertise and knowledge. Thus the non-economic barriers, not unlike the minor economic barriers to market entry, are very small. If one has the knowledge and engineering expertise, one can produce unbonded tendons. PTI has

been active in lowering the barriers to entry to the unbonded market through its educational programs, seminars, and publications. PTI's publications, specifications, manual and other information are available at low cost. PTI has engaged in educational and problem-solving efforts since its inception to foster the acceptance and continued use of unbonded technology and know-how.

It is PTI's intention not to create any barriers for successful entry and competition in the market. PTI's sole concern is the establishment and manufacture of the highest quality unbonded tendons first from its members and second the market generally.

Further, PTI has not and does not intend to persuade anyone from doing business with uncertified plants or non-PTI members.

H. Plant Certification - Business Review Focus

1. What then is the purpose of unbonded plant certification? The PTI Program for Certification for Plants Producing Unbonded Single Strand Tendons ("Program") has been developed to provide independent certification of a plant's fabrication capability to produce unbonded single strand tendons. The Program also includes evaluation of calibration practices for jacks and gauges used for stressing single strand tendons.

2. The Program is designed to certify only the capability of an unbonded plant to produce quality product, not the product itself.

3. Unbonded plant certification has not in the past been proposed to be a prerequisite to membership in PTI. In retrospect, this may have been a mistake in 1988, however, PTI has been mindful that it has had to attract member support and address industry issues of all sorts while simultaneously making every effort to enhance the reputation of unbonded post-tensioning.

4. Unbonded Post-Tensioning Tendon Specifications (attached as Exhibit B) were developed to provide specific performance criteria for the various materials used for unbonded tendons, and includes detailed recommendations for fabrication and installation of unbonded tendons. The Specifications present

guidelines for tendons in normal environments and for tendons in aggressive environments.

The more restrictive material, fabrication and construction requirements for tendons used in aggressive environments are considered essential to the long-term durability of tendons used in such circumstances. In addition, the durability of prestressed structures in aggressive environments requires the use of consistently high quality concrete, and good general construction practices for such applications.

The Specifications recommend that each user make the changes, or additions necessary to adapt the Specifications to specific job conditions and local building codes.

5. Plant certification procedures, inspection, and grading are set forth in Exhibit C. At the head of the Program Certification procedures are the inspection and grading focus. This is accomplished presently by an independent engineering consulting firm, Loris Gerber and Associates ("Certifying Agency"). Inspection is based on industry criteria developed to enhance the performance of unbonded product. Unbonded specifications are objectively applied by the Certifying Agency. Grades are made known only to the Program participant and PTI's Executive Director. As can be seen in Exhibit C, reinspection and appeals are available to participants disagreeing with the Certifying Agency. PTI monitors the Certifying Agency continually to ensure objectivity, and make revisions based on the Agency's and participants' practical experience.

In general, the Program has had the very beneficial effect of raising the standards of unbonded manufacture and the reputation of the industry.

6. Fees for certification are nominal:

a. Annual Inspection Fee

(i) Covers two unannounced inspections, or

(ii) Covers one announced in-depth inspection and one unannounced inspection.

PTI Member Companies	
First Plant	$ 2,800.00
Each Additional Plant	$ 2,450.00
Non-Member Companies	
First Plant	$ 5,600.00
Each Additional Plant	$ 4,900.00

b. Fee for an Extra inspection Day

For delays beyond the control of the inspection agency.

PTI Member Companies	$ 650.00
Non-Member Companies	$ 1,300.00

c. Reinspection Fees

Inspections at request of plants not meeting certification criteria on first inspection.

PTI Member Companies	$ 1,250.00
Non-Member Companies	$2,500.00

7. Fees are used simply to run the Program on a break even basis. Fee receipts are used to pay the Certifying Agency, research on unbonded systems, educational programs, and advertising.

8. The effect in the market of construction specifications requiring PTI plant certification would be marginal since most project specifications currently include a qualifier such as: "or other approved program". This mechanism allows non-PTI Certified plants the opportunity to convince the engineer, architect or owner that they have a program which is equal and maybe even superior to PTI's. Requesting the supply of unbonded tendons from PTI Certified Plant sets only a minimum threshold level of quality that must be met. In several projects over the past several years, this has occurred where product from a non-PTI Certified plant has been accepted on a project in which the project specification called for the product to be supplied by a PTI Certified Plant. The engineer/owner decided that the product

quality from the non-PTI Certified plant was acceptable usually because of prior experience of working with the company.

9. Real and perceived benefits of plant certification: a mechanism to promote quality and safety in the marketing and application of unbonded post-tensioning systems; improved quality which will benefit all persons engaged in unbonded post-tensioning, whether members of PTI or not, whether certified or not. Again, to reiterate the above, PTI's goal is to set a minimum threshold level of expected quality, safety and performance for the engineer, architect or owner when it comes to the use and application of unbonded post-tensioning tendons. Building on this quality platform, PTI can hopefully develop the opportunities for future market growth and expansion.

10. The only real and perceived detriments of plant certification are that: enforcement of a quality control procedure will require more stringent paper work and require full traceability of all components may force upgrading of old equipment and procedures to ensure quality and standards are met. PTI has no information on the actual costs of upgrading and paperwork procedures but PTI believes these are modest. However, no non-certified current PTI member who would be affected by the proposed prerequisite appears to be producing inferior or substandard unbonded single strand tendons. Thus, one can conclude that meeting the requirements certification would impose, would not create undue burdens on those not presently certified. Thus, the costs of inspection arguably could be the only detriment. Inferior or substandard unbonded single strand tendons are found on job sites. PTI believes such products are largely those of non-certified, non-members.

The costs of the program, as set forth above are modest. Admittedly, this cost could conceivably create a minor detriment to some members. Paperwork changes do not require additional personnel, but rather, only discipline in filing and keeping documents in an orderly manner. Machinery upgrades are costs which will probably not affect most uncertified procedures of unbonded tendons. Indeed, were any non-certified members or non-members to decide to enter the business from scratch, the costs of machinery would be the same for a certified plant versus a non-certified plant. There is no doubt that many manufacturing facilities exist where substandard, unsafe and unreliable tendons are made. PTI, by the certification proposal, wants first to set

an example for the entire industry that for minimal costs, its own members will all be certified and second, that certification is a desirable and easily ascertainable goal, with or without the additional step of PTI membership.

I. Plant Certification Participation

1. Participant Members Population as of December 31, 1996

	Company	Location
1.	AMSYSCO, Inc.	Addison, IL
2.	Cable Concrete Structures, Inc.	Columbus, GA
3.	Con-Force Structures Limited	Vancouver, BC, Canada
4.	Continental Concrete Structures, Inc.	Alpharetta, GA
5.	D.R. Parks & Associates	Rochester, NY
6.	Dywidag Systems Int's Canada, Ltd.	Surrey, BC, Canada
7.	Dywidag Systems Int'l, USA Inc.	Arlington, TX
	" " " " "	Bolingbrook, IL
	" " " " "	Long Beach, CA
	" " " " "	Tucker, GA
8.	Harris P/T	Delta, BC, Canada
9.	International Post Tension, Inc.	Leander, TX
10.	P.T.E. Strand Co., Inc.	Hialeah, FL
11.	Post-Tensioning Services of Texas	Houston, TX
12.	Suncost Post-Tension	Houston, TX

2. Participant Non-Members Population

There were no non-member plants who were certified under PTI's Plant Certification Program as of December 31, 1996.

3. Non-Participant Member Population

The following members either do not participate or do not have all of their plants certified under the PTI Plant Certification Program as of December 31, 1996.

	Company	Location
1.	Canadian BBR	Toronto, ON, Canada
2.	GSI Post-Tension " "	Dallas, TX Ft. Worth, TX
*3.	Post-Tensioning Services of TX	Dallas, TX
*4.	Suncoast Post-Tension " " "	Austin, TX San Antonio, TX
5.	Tech-Con Systems, Inc.	Slidell, LA

*These plants are currently undergoing the process to obtain PTI certified plant status.

4. Non-Participant Non-Members Population (Listed to Best of PTI's Knowledge)

	Company	Location
1.	Alumillo Steel	Benecia, CA
2.	American Strand	Dallas, TX
3.	Houston Post-Tensioning, Inc.	Houston, TX
4.	Superior Post-Tensioning	Dallas, TX
5.	KLG	Denver, CO
6.	Lang Tendons	Toughkenamon, PA
7.	Northwest Post-Tension	Ravendale, WA

8.	PPT, Inc.	Shreveport, LA
9.	PTC, Inc.	Everett, WA
10.	Post-Tension of Nevada	Las Vegas, NV
11.	RPS Cable Corp.	Fontana, CA
12.	J.L. Davidson	Santee, CA
13.	Tri-Steel	Dallas, TX
14.	Travis Foundation	Houston, TX
15.	Ready-Cable	Dallas, TX
16.	V.S.L. Corporation	Dallas, TX
	" "	Miami, FL
	" "	Washington, DC

5. <u>Historical Summary, 1988 - 1997</u>

1988 PTI Plant Certification Program established.

- 17 Company Members in 1988
- 9 Plants certified, representing 4 Company Members

1989 (As of March, 1989)

- 10 Company Members
- 9 Plants certified representing 4 Company Members

1990 (As of March, 1990)

- 13 Company Members
- 13 Plants certified representing 7 Company Members

1991 (As of March, 1991)

- 15 Company Members
- 14 Plants certified representing 8 Company Members

1992 (As of March, 1992)

- 15 Company Members
- 15 Plants certified representing 10 Company Members

1993 (As of May, 1993)

- 16 Company Members
- 11 Plants certified representing 8 Company Members

1994 (As of April, 1994)

- 18 Company Members
- 11 Plants certified representing 8 Company Members

1995 (As of April, 1995)

- 17 Company Members
- 10 Plants certified representing 7 Company Members

1996 (As of April, 1996)

- 16 Company Members
- 11 Plants certified representing 8 Company Members

1997 (As of January, 1997)

- 17 Company Members
- 15 Plants certified representing 11 Company Members

J. Business Review Proposed to DOJ Antitrust Division; PTI proposes:

1. To require as a prerequisite of membership in PTI the certification of unbonded plants prior to PTI membership admission.

2. To require current PTI members having unbonded plants to certify them within a reasonable time period as a pre-requisite to continued PTI membership.

3. To maintain the availability of unbonded plant certification to non-members.

K. Competitive and market benefits of the proposed prerequsite would be significant

There is evidence to suggest that Plant Certification is perceived to be a benefit both by participants and non-participants alike. For instance PTI has been forced recently to upgrade its vigilance in ensuring proper use of the Program Certification mark used by those not otherwise certified.

1. Profound enhancement of quality in the unbonded PT Industry and, indirectly, in its products and applications.

2. Increased awareness by design professionals and owners with respect to the critical issues of long term durability and comprehensive quality control procedures for unbonded post-tensioning systems and even perhaps extending this concept to other competition construction systems.

3. Enhanced and positive perception of unbonded post-tensioning and PT in general as a beneficial, state-of-the art alternative to:

(a) other concrete construction systems and

(b) other, non-concrete construction systems [currently certification does not have the reputation which it deserves, because members can enjoy benefits of PTI without certifying their plants; PTI lacks credibility].

L. Perceived detriments of the proposed prerequisite will be incidental and minor:

1. A few members may possibly elect to leave PTI because of the certification fee or the cost of upgrading facilities practices or insufficiencies which may not be certifiable. PTI believes this impact will be small and temporary. One other association which recently initiated a similar requirement reports that it experienced minor membership loss of a temporary nature.

2. Companies having membership in PTI under the proposal enjoy benefits, but these benefits may be obtained by others in other ways, involving minimal additional cost: such as with PTI publications, and licensed software; also, most PTI Board and

many committee meetings are public in nature. Thus, membership in PTI is not required to be an effective competitor in the market.

M. The proposed prerequisite should not have an effect on price of post-tension products or applications.

The costs of Program participation are, as seen above, small. The Program fee reflects the costs of administration of the Program. For example, a typical, but hypothetical, PTI member Company annually ships 1,000 tons of PT product per year at an average estimated sales price of $1,500 per ton. Thus, one can see that the Program fees are a minor investment in the gross tonnage shipped. In addition, competitive products and systems continue to constrain pricing of post-tension products.

1. This Program is only designed to improve quality of manufactured products in construction. The Program should assist both member companies and non-member companies gain in reputation and concomitant market benefits.

2. The required certification will simply have the effect of enhancing product use generally in the industry and enhancing the representation of PT in the concrete and non-concrete markets.

N. The proposed prerequisite will:

1. not create artificial or anticompetitive barriers to entry to the PT market because the cost to members of the Certification Program is modest, non-members are not prohibited from joining the Program; and only those current members having uncertified plants would be required to join the Program in order to keep Company Membership status. To PTI's knowledge, only current members would be affected by the proposed pre-requisite and most have gone on record supporting the proposed pre-requisite. Some have expressed a concern about compliance, but have not definitely rejected the pre-requisite.

2. not have the effect of a boycott against:

(a) non-members (they can still choose to certify plants or nor certify their plants) or

(b) Member Companies, forcing them to drop out of PTI (as shown above, however, membership in PTI, based on non-member population and demography does not have any significant competitive effect in post-tensioning markets).

3. not induce PTI or its members to persuade other PTI members or third parties not to do business with or take any action against uncertified plants or non-PTI members.

O. The benefits of requiring certification as a prerequisite to PTI membership has precedent in similar and other industries; e.g.:

1. The Precast Concrete Institute, a sister trade association, has a plant certification requirement for its members.

2. The Metal Building Manufacturers Association, the subject of a recent Business Review Letter, has similar requirements.

P. The requirement has procompetitive effects which will enhance post-tensioning as a method of prestressing and concrete as a structural alternative:

1. Production of quality unbonded Post-tensioning systems will result in higher job-site safety.

2. Fewer unbonded post tensioning failures resulting from manufacturing shortcuts, oversights, and errors which are addressed in certification inspections.

3. Fewer long-term structural failures resulting especially from substandard or damaged plastic and grease.

4. Traceability of materials to insure if problems occur in one structure other structures can be located prior to use and targeted for repair before safety and integrity of the building becomes an issue.

5. Significantly enhanced reputation of unbonded Post-tensioning among engineers, architects, and specifiers by improvement in quality of product shipped; e.g., better tendon quality respecting corrosion control.

6. Lower cost for unbonded Post-tensioning suppliers - fewer returned products produced under poor QC.; productive efficiencies.

Q. Closing.

To summarize, PTI is a trade association that participates in technical programs, among which are those relating to unbonded post-tensioning. The PTI Certification Program for Plants Producing Unbonded Single Strand Tendons evaluates and certifies the capability of Program applicants' plants to meet requirements based on PTI's specifications and the Program's independent inspection and grading. Program Certification is open to all manufacturers of unbonded single strand tendons. Membership in PTI has never been and will not be a prerequisite for Program Certification. PTI has established uniform procedures for appeals, regarding recertification for applicants that do not meet criteria established in the Program.

The Post-Tensioning Institute and its members respectfully ask the Department of Justice to issue a business review letter approving as not anti-competitive the proposed requirement that unbonded plant certification be a prerequisite for initial and maintained membership in PTI for companies producing unbonded single strand tendons.

If there are any questions regarding this request, please do not hesitate to give the undersigned a call.

Respectfully Submitted,

Douglass F. Rohrman, P.C.

DFR:amm

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