

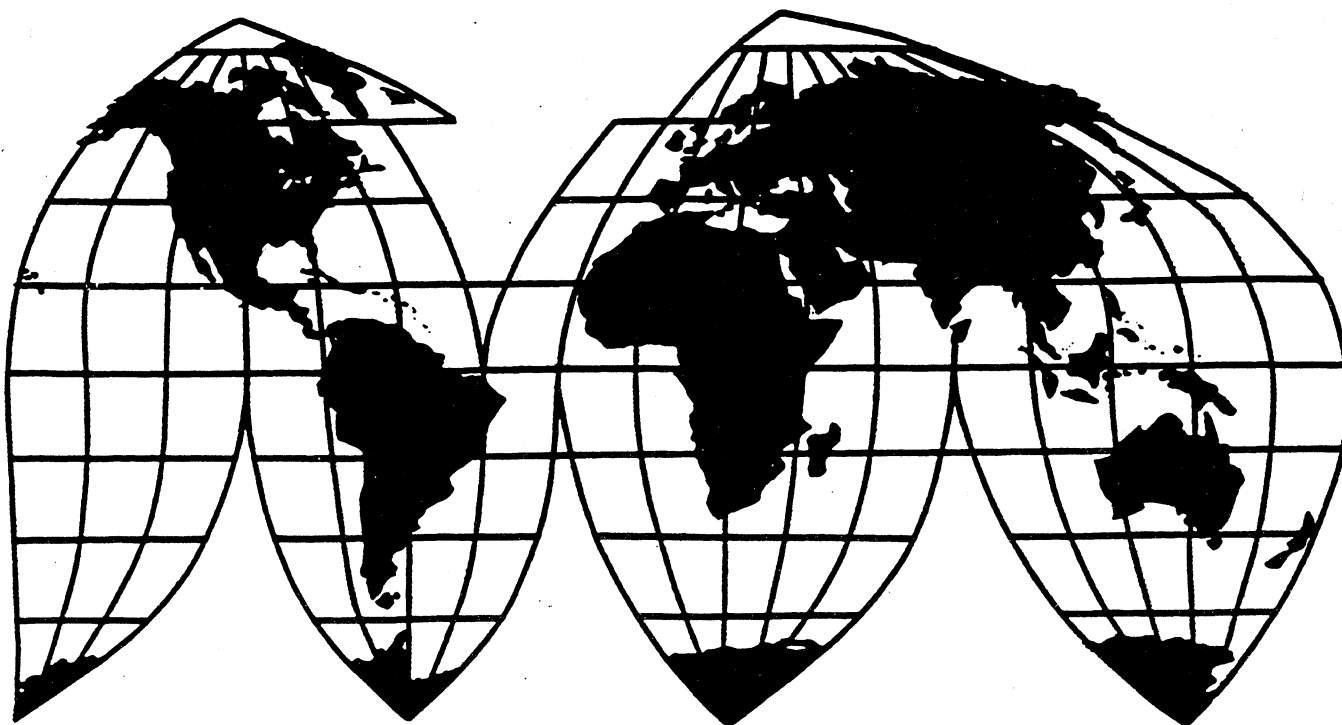
Beryllium Metal and High-Beryllium Alloys from Kazakhstan

Investigation No. 731-TA-746 (Final)

Publication 3019

February 1997

U.S. International Trade Commission



U.S. International Trade Commission

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Note.--Information that would reveal confidential operations of individual concerns may not be published and therefore has been deleted from this report. Such deletions are indicated by asterisks.

UNITED STATES INTERNATIONAL TRADE COMMISSION

Investigation No. 731-TA-746 (Final)

BERYLLIUM METAL AND HIGH-BERYLLIUM ALLOYS FROM KAZAKSTAN

DETERMINATION

On the basis of the record¹ developed in the subject investigation, the United States International Trade Commission determines,² pursuant to section 735(b) of the Tariff Act of 1930 (19 U.S.C. § 1673d(b)) (the Act), that an industry in the United States is not materially injured or threatened with material injury, and the establishment of an industry in the United States is not materially retarded, by reason of imports from Kazakhstan of beryllium metal and high-beryllium alloys,³ that have been found by the Department of Commerce to be sold in the United States at less than fair value (LTFV).

BACKGROUND

The Commission instituted this investigation effective March 14, 1996, following receipt of a petition filed with the Commission and the Department of Commerce by Brush Wellman, Cleveland, OH. The final phase of the investigation was scheduled by the Commission following notification of a preliminary determination by the Department of Commerce that imports of beryllium metal and high-beryllium alloys from Kazakhstan were being sold at LTFV within the meaning of section 733(b) of the Act (19 U.S.C. § 1673b(b)). Notice of the scheduling of the Commission's investigation and of a public hearing to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the *Federal Register* of September 19, 1996 (61 F.R. 49341). The hearing was held in Washington, DC, on January 22, 1997, and all persons who requested the opportunity were permitted to appear in person or by counsel.

¹ The record is defined in sec. 207.2(f) of the Commission's Rules of Practice and Procedure (19 CFR § 207.2(f)).

² Chairman Miller dissenting.

³ The imported products subject to this investigation, as defined by the U.S. Department of Commerce, are beryllium metal and high-beryllium alloys with a beryllium content equal to or greater than 30 percent by weight, whether in ingot, billet, powder, block, lump, chunk, blank, or other semifinished form. These are intermediate or semifinished products that require further machining, casting, and/or fabricating into sheet, extrusions, forgings, or other shapes in order to meet the specifications of the end user. Beryllium metal and high-beryllium alloys in which beryllium predominates over all other metals are provided for in subheadings 8112.11.30 and 8112.11.60 of the Harmonized Tariff Schedules of the United States (HTS). High-beryllium alloys in which beryllium does not predominate are provided for elsewhere in the HTS; e.g., high-beryllium alloys in which aluminum predominates are provided for in HTS subheading 7601.20.90. Although the HTS subheadings are provided for convenience and Customs purposes, the written description of the scope of this investigation is dispositive.

VIEWS OF THE COMMISSION

Based on the record in this investigation, we find that an industry in the United States is not materially injured or threatened with material injury by reason of imports of beryllium metal and high-beryllium alloys from Kazakhstan that have been found by the Department of Commerce (“Commerce”) to be sold in the United States at less than fair value (“LTFV”).^{1 2}

I. DOMESTIC LIKE PRODUCT AND INDUSTRY

A. In General

To determine whether an industry in the United States is materially injured or threatened with material injury by reason of the subject imports, the Commission first defines the “domestic like product” and the “industry.”³ Section 771(4)(A) of the Tariff Act of 1930 as amended (“the Act”) defines the relevant industry as the “producers as a [w]hole of a domestic like product, or those producers whose collective output of a domestic like product constitutes a major proportion of the total domestic production of the product.”⁴ In turn, the Act defines “domestic like product” as “a product which is like, or in the absence of like, most similar in characteristics and uses with, the article subject to an investigation.”⁵

Our decision regarding the appropriate domestic like product(s) in an investigation is a factual determination, and we apply the statutory standard of “like” or “most similar in characteristics and uses” on a case-by-case basis.⁶ No single factor is dispositive, and the Commission may consider other factors it deems relevant based on the facts of a particular investigation.⁷ The Commission looks for clear dividing lines

¹ Chairman Miller determines that the domestic industry is materially injured by reason of subject imports from Kazakhstan. She joins the majority views on domestic like product, domestic industry and condition of the industry. See Dissenting Views of Chairman Marcia E. Miller.

² Whether the establishment of an industry in the United States is materially retarded is not an issue in this investigation.

³ 19 U.S.C. § 1677(4)(A).

⁴ Id.

⁵ 19 U.S.C. § 1677(10).

⁶ See, e.g., Nippon Steel Corp. v. United States, Slip Op. 95-57 at 11 (Ct. Int’l Trade Apr. 3, 1995). The Commission generally considers a number of factors including: (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer and producer perceptions of the products; (5) common manufacturing facilities, production processes and production employees; and, where appropriate, (6) price. See id. at n.4, 18; Timken Co. v. United States, 913 F. Supp. 580, 584 (Ct. Int’l Trade 1996). When determining whether a product at an earlier stage of its production process is “like” a finished or further processed product, the Commission also sometimes applies a semifinished/finished like product analysis. Under that analysis the Commission considers: (1) whether the upstream article is dedicated to the production of the downstream article or has independent uses; (2) whether there are perceived to be separate markets for the upstream and downstream articles; (3) differences in physical characteristics and functions of the upstream and downstream articles; (4) differences in the costs or value of vertically differentiated articles; and (5) the significance and extent of the processes used to transform the upstream into the downstream articles. See, e.g., Cut-to-Length Carbon Steel Plate from China, Russia, South Africa, and Ukraine, Inv. Nos. 731-TA-753-756 (Preliminary), USITC Pub. 3009 at 6 n.25 (Dec. 1996); Large Newspaper Printing Presses and Components Thereof, Whether Assembled or Unassembled, from Germany and Japan, Inv. Nos. 731-TA-736 and 737 (Final), USITC Pub. 2988 at 6 (Aug. 1996).

⁷ See, e.g., S. Rep. No. 249, 96th Cong., 1st Sess. 90-91 (1979).

among possible like products, and disregards minor variations.⁸ Although the Commission must accept the determination of Commerce as to the scope of the imported merchandise sold at LTFV, the Commission determines what domestic product is like the imported articles Commerce has identified.⁹

B. Domestic Like Product

In its notice of initiation, Commerce defined the articles subject to this investigation as follows:

beryllium metal and high beryllium alloys with a beryllium content equal to or greater than 30 percent by weight, whether in ingot, billet, powder, block, lump, chunk, blank, or other semifinished form. These are intermediate or semifinished products that require further machining, casting and/or fabricating into sheet, extrusions, forgings or other shapes in order to meet the specifications of the end user.¹⁰

For the following reasons, we find that the domestic like product consists of beryllium metal and high-beryllium alloys. Beryllium metal is a specialty metal that has the properties of light weight, a high strength-to-weight ratio, a high resistance to deformity (*i.e.*, stiffness), the highest heat-absorbing capacity of any metal, the best heat conduction of any structural metal, and the ability to maintain these properties at high operating temperatures.¹¹ High-beryllium alloys exhibit the same properties, although they can be slightly degraded by the alloying material.¹² Beryllium metal and high-beryllium alloys are purchased and sold in similar forms such as ingots, blocks, billets, blanks and powders.¹³

Beryllium metal and high-beryllium alloys are used primarily in defense and aerospace applications for structural, optical and electronic uses. They generally are sold to fabricators, processors and end users,¹⁴ and are produced in the same facility, using the same equipment and employees.¹⁵ The production process used to convert beryllium metal ingots and lump into beryllium metal billets, blocks and blanks is very similar to the process used to produce high-beryllium alloy billets, blocks and blanks from ingot and lump, although the alloy production requires the addition of other raw materials.¹⁶ While beryllium metal is more expensive than high-beryllium alloys, both are much more expensive than competing metals.¹⁷

We do not find that the facts warrant expanding the domestic like product to incorporate downstream investment castings. Although investment castings have a chemical composition similar to high-beryllium

⁸ Torrington Co. v. United States, 747 F. Supp. 744, 748-49 (Ct. Int'l Trade 1990), *aff'd*, 938 F.2d 1278 (Fed. Cir. 1991).

⁹ Hosiden Corp. v. Advanced Display Manufacturers, 85 F.3d 1561 (Fed. Cir. 1996) (Commission may find a single like product corresponding to several different classes or kinds defined by Commerce); Torrington, 747 F. Supp. at 748-752 (affirming Commission determination of six like products in investigations where Commerce found five classes or kinds).

¹⁰ Final Determination in the Antidumping Duty Determination of Beryllium from the Republic of Kazakhstan, 62 Fed. Reg. 2648, 2649 (Jan. 17, 1997).

¹¹ CR at I-7, PR at I-5.

¹² CR at I-8, PR at I-5.

¹³ CR at I-14-15, PR at I-8-10.

¹⁴ Until 1994, beryllium metal was also sold to the U.S. Government Defense Stockpile. CR at I-23, PR at I-14-15.

¹⁵ CR at I-17, PR at I-11.

¹⁶ CR at I-13-17, PR at I-8-11.

¹⁷ CR at I-7, PR at I-5.

alloys, they have different and more intricate shapes and are in a nearly-finished form, compared to the more rudimentary shapes such as ingots, blocks and blanks of the unfinished beryllium metal and high-beryllium alloys.¹⁸ Investment castings are not interchangeable with beryllium metal and high-beryllium alloys, which must be further processed before they acquire a shape comparable to a cast part.¹⁹ Investment castings are sold through some of the same channels of distribution as beryllium metal and high-beryllium alloys only insofar as the latter are machined by a fabricator before being sold to the ultimate end user. However, unlike beryllium metal, investment castings were not sold to processors or the National Defense Stockpile over the period of investigation.²⁰ Investment castings are produced in separate facilities, using different employees, equipment and production processes than beryllium metal and high-beryllium alloys.²¹ Further, both producers and purchasers appear to perceive investment castings as a unique and different product from beryllium metal or high-beryllium alloys.²²

Under the semifinished/finished analysis, the weight of the evidence is also against inclusion of investment castings in the domestic like product. Beryllium metal and high-beryllium alloys are not dedicated to production of the investment castings;²³ investment castings are more intricate, precision-shaped finished parts;²⁴ the value added to the beryllium to produce the investment castings is substantial;²⁵ and significant further processing is required to transform beryllium metal into investment castings.²⁶ Moreover, the Commission generally has stated that it does not include downstream articles in the domestic like product or use a semifinished/finished analysis when the downstream imported product (*i.e.*, investment castings) corresponding to the downstream domestic product is not within the scope of investigation.²⁷

We also do not find that the facts warrant expanding the domestic like product to incorporate the molten form of high-beryllium alloys produced in the production process of investment castings.²⁸ Nor do we find that the facts warrant expanding the domestic like product upstream to incorporate beryllium hydroxide

¹⁸ CR at I-15-16, PR at I-10-11.

¹⁹ CR at I-18, PR at I-12.

²⁰ CR at I-23-24, PR at I-14-15.

²¹ CR at I-12-17 and III-3, PR at I-8-11 and III-1-2; Petitioner's Prehearing Brief at 12.

²² Petitioner's Prehearing Brief at 11, *citing* *** Purchaser's Questionnaire at 3 and ***; Nuclear Metals' Producer's Questionnaire Response at 22.

²³ Table G-1, CR at G-3, PR at G-3.

²⁴ CR at I-14-16, PR at I-8-11.

²⁵ Based on Nuclear Metals' data, the value-added to produce investment castings from beryllium metal is approximately *** percent. Producer's Questionnaire of Nuclear Metals; telephone conversation between John Ascienzo, USITC, and *** of Brush Wellman, Feb. 3, 1997.

²⁶ Indeed, Nuclear Metals has patented the alloy used in the production process and considers the process a trade secret. CR at I-24 n.67, PR at I-15 n.67. To date, it appears that Brush Wellman has been unable to develop a suitable technology for producing investment castings in an acceptable form for end users. Hearing Tr. at 156-157.

²⁷ *See, e.g., Manganese Metal from the People's Republic of China*, Inv. No. 731-TA-724 (Preliminary), USITC Pub. 2844 at 9 (Dec. 1994); *Fresh Garlic from the People's Republic of China*, Inv. No. 731-TA-683 (Final), USITC Pub. 2825 at I-14 & n.65 (Nov. 1994).

²⁸ The difference in the physical forms of the molten and solid high-beryllium alloys results in a complete lack of interchangeability between the different forms. To date, the molten alloys have essentially one end use -- to produce investment castings -- and solid forms are not used in that production process. The molten and solid forms are also produced in completely different facilities using different processes and employees, and they are not sold through the same channels of distribution. Petitioner's Prehearing Brief at 12, 18-19; CR at I-15, I-17 and III-3, PR at I-10-11 and III-1-2.

or breaking out beryllium metal ingots from beryllium metal billets, blanks/blocks, and high-beryllium alloys as respondents proposed late in this investigation.²⁹

C. Domestic Industry

The Commission is directed to consider the effect of the subject imports on the industry, defined as “the producers as a [w]hole of a domestic like product.”³⁰ In defining the domestic industry, the Commission’s general practice has been to include in the industry all producers of the domestic like product, including toll producers, whether the product is captively consumed, or sold in the domestic merchant market.³¹

Based on our finding that the domestic like product consists of beryllium metal and high-beryllium alloys, we correspondingly find that the domestic industry consists of producers of those products. Petitioner Brush Wellman accounted for *** all production of the domestic like product during the period of investigation. ***.³² However, ***, and therefore is a “related party” pursuant to 19 U.S.C. § 1677(4)(B).³³

²⁹ Respondents raised these domestic like product arguments for the first time in an exhibit to their posthearing submission in the final phase of this investigation. Respondents had ample opportunity to consider and raise these issues earlier in the investigation if they wished the Commission to gather the appropriate data. Based on the information we do have, we are not persuaded that the domestic like product should be delineated in the manner proposed by respondents.

With respect to including the upstream beryllium hydroxide in the same domestic like product as beryllium metal ingots, we note that unlike beryllium metal ingots, beryllium hydroxide is a chemical, not a metal product, and has a different chemical composition from beryllium metal ingots. Beryllium hydroxide contains only approximately 21 percent beryllium, whereas beryllium metal ingots contain over 99 percent beryllium. Beryllium hydroxide is a damp, white powder, whereas beryllium metal ingots are cylindrically shaped, two to three feet in diameter and several feet long. CR at I-8 and I-10, PR at I-6-7; submission of petitioner, Feb. 4, 1997. Except in unusual circumstances, beryllium hydroxide is generally not interchangeable with beryllium metal ingots. Beryllium hydroxide and beryllium metal ingots are produced in separate facilities (indeed, in different states), using different employees, processes and equipment. CR at III-1, PR at III-1; submission of petitioner, Feb. 4, 1997. The sole domestic producer of beryllium hydroxide does not perceive beryllium hydroxide as the same product as beryllium metal ingots, and argues that its customers similarly do not perceive these products to be the same. Finally, beryllium hydroxide is priced considerably lower than beryllium metal ingots at approximately \$*** per pound, whereas beryllium metal ingots were priced in the range of \$*** to \$*** per pound during the period of investigation. Table V-1, CR at V-5, PR at V-3; submission of petitioner, Feb. 4, 1997.

We reach the same conclusion based on the semifinished/finished analysis. Beryllium hydroxide is not dedicated to the production of beryllium metal ingots; rather, the majority of the product is used to produce low-beryllium alloys. See Petitioner’s Posthearing Brief at 11; Hearing Tr. at 108. The markets are therefore different. There are also significant differences in the direct variable costs of beryllium hydroxide (\$*** per pound) versus beryllium metal ingots (\$*** per pound; the value-added to produce beryllium metal ingots from beryllium hydroxide is likewise considerable (approximately *** percent). See Petition, Ex. 10, sheet 1, page 2; petitioner’s producer’s questionnaire. Finally, the processes to produce the downstream beryllium metal product from beryllium hydroxide are numerous, and the handling of beryllium hydroxide is subject to strict environmental and other controls. CR at I-12-14, PR at I-8-9; submission of petitioner, Feb. 4, 1997.

³⁰ 19 U.S.C. §1677(4)(A).

³¹ See United States Steel Group v. United States, 873 F. Supp. 673, 682-83 (Ct. Int’l Trade 1994), *aff’d*, 96 F.3d 1352 (Fed. Cir. 1996); Large Newspaper Printing Presses and Components Thereof, Whether Assembled or Unassembled, from Germany and Japan, Inv. Nos. 731-TA-736 and 737 (Final), USITC Pub. 2988 at 7-8 (Aug. 1996).

³² CR at I-2 n.3, I-5 & n.12 and III-3, PR at I-2 n.3, I-3-4 & n.12 and III-2.

³³ CR at I-5, PR at I-4.

We find that appropriate circumstances exist to exclude *** from the industry ***.³⁴ Therefore, we find that the domestic industry consists of only Brush Wellman, the petitioner.

II. CONDITION OF THE DOMESTIC INDUSTRY

In assessing whether a domestic industry is materially injured or threatened with material injury by reason of LTFV imports, we consider all relevant economic factors that bear on the state of the industry in the United States.³⁵ These factors include output, sales, inventories, capacity utilization, market share, employment, wages, productivity, profits, cash flow, return on investment, ability to raise capital, and research and development. No single factor is dispositive and all relevant factors are considered “within the context of the business cycle and conditions of competition that are distinctive to the affected industry.”³⁶

Several conditions of competition are pertinent to our analysis of the domestic beryllium metal and high-beryllium alloy industry. First, we find that Brush Wellman internally transferred a significant amount of production of the domestic like product and sold a significant amount of that production in the merchant market.³⁷ Thus, we have considered whether to apply the captive production provision and focus our analysis on the merchant market in assessing market share and the factors affecting the financial performance of the domestic industry.^{38 39 40}

³⁴ See, e.g., Torrington Co. v. United States, 790 F. Supp. 1161 (Ct. Int’l Trade 1992), *aff’d without opinion*, 991 F.2d 809 (Fed. Cir. 1993). See also Open-End Spun Rayon Singles Yarn from Austria, Inv. No. 731-TA-751 (Preliminary), USITC Pub. 2999 at 7 n.39 (Oct. 1996).

³⁵ 19 U.S.C. § 1677(7)(C)(iii).

³⁶ *Id.* Much of the information regarding the factors considered in this section is business proprietary. Accordingly, the public version of this opinion contains only nonnumerical characterizations of that information. See 19 C.F.R. § 201.6(a).

³⁷ During the period of investigation, Brush Wellman internally transferred an average of *** percent of its total shipments of beryllium metal and high-beryllium alloys to produce downstream products not within the domestic like product. CR at III-9, PR at III-3. Conversely, Brush Wellman sold *** percent of its total shipments of domestic production of beryllium metal and high-beryllium alloys to the merchant market during the period of investigation. *Id.*

³⁸ The captive production provision provides:

(iv) CAPTIVE PRODUCTION -- If domestic producers internally transfer significant production of the domestic like product for the production of a downstream article and sell significant production of the domestic like product in the merchant market, and the Commission finds that --

(I) the domestic like product produced that is internally transferred for processing into that downstream article does not enter the merchant market for the domestic like product,

(II) the domestic like product is the predominant material input in the production of that downstream article, and

(III) the production of the domestic like product sold in the merchant market is not generally used in the production of that downstream article,

then the Commission, in determining market share and the factors affecting financial performance set forth in clause (iii), shall focus primarily on the merchant market for the domestic like product.

³⁹ Chairman Miller concludes, on the facts of this case, that the statutory captive production provision has not been met because the domestic like product is not the predominant material input in the production of a substantial portion of the downstream articles. Chairman Miller notes that the Commission retains the discretion to focus on the merchant

(continued...)

Determining the applicability of the captive production provision proves complicated in this investigation due to the many types of downstream products Brush Wellman produces using either beryllium metal or high-beryllium alloys as a feed.^{41 42} An analysis of whether each of the three criteria of the captive production provision, set forth in sections 771(7)(C)(iv)(I), (II) and (III) of the Act, is satisfied for each category of downstream products reveals that the provision appears to be generally satisfied with respect to most types of internal transfers, but not all.

The first statutory criterion is whether the domestic like product produced that is internally transferred for processing into the downstream articles enters the merchant market for the domestic like product. This factor appears to be met with respect to all or most categories of transfers, depending on how that criterion is interpreted.⁴³ The second criterion is whether the domestic like product is the predominant material input in the production of that downstream article. Application of this factor shows mixed results

³⁹ (...continued)

market even where the statutory test has not been met, but elects not to do so in this case. As noted below, an analysis focused on the merchant market would simply reaffirm the conclusion she has reached based on an analysis of the total domestic market. She does not join the following discussion as it pertains to the captive production provision.

⁴⁰ Commissioner Newquist takes no position as to whether the captive production provision applies and thus does not join in the following discussion. He notes, however, that it is within his discretion to focus analysis primarily on the merchant market and he does so here. See Polyvinyl Alcohol from China, Japan, and Taiwan, Inv. Nos. 731-TA-726, 727, and 729 (Final), USITC Pub. 2960 at 11 n. 70 (May 1996).

⁴¹ Of the *** percent of beryllium metal and high-beryllium alloys that were internally transferred, those transfers went to the following downstream products *** during the period of investigation: *** (high-beryllium alloys only); *** (primarily beryllium metal); *** (beryllium metal only); and *** (high-beryllium alloys only). CR at III-6-9 & nn. 13-15 and Table G-1 at G-3, PR at III-3 & nn. 13-15 and G-3.

⁴² Commissioner Crawford believes that the complicated factual pattern of this investigation and the unusual nature of the competition in this market should not serve as a precedent in applying the captive production provision. However, she has given petitioner the benefit of the doubt and joins her colleagues in focusing her analysis on the merchant market.

⁴³ We note that the precise meaning of this provision is less than clear and different Commissioners have interpreted it differently. In past investigations, the Commission majority has applied it by asking whether the downstream product competes with the domestic like product. See Polyvinyl Alcohol from China, Japan and Taiwan, Inv. Nos. 731-TA-726, 727 and 729, USITC Pub. 2960 at 12 (May 1996) (downstream product did not compete for sales in polyvinyl alcohol merchant market); Certain Pasta from Italy and Turkey, Inv. Nos. 701-TA-365-366 and 731-TA-734-735 (Final), USITC Pub. 2977 at 15 (July 1996) (first statutory factor satisfied when downstream product made from internally transferred article did not compete with dry pasta sold in the merchant market).

It does not appear that any of the downstream articles compete in the merchant market with beryllium metal and high-beryllium alloys since most of the downstream articles are finished or nearly-finished products that have been further processed into specific shapes and parts (e.g., ***). Beryllium metal and high-beryllium alloys require further processing before they could compete with those downstream products. Nor does it appear that beryllium metal and high-beryllium alloys compete with low-beryllium alloys since low-beryllium alloys contain only nominal amounts of beryllium, which would not impart the physical properties suitable for the applications of the high-beryllium products. Further, because of the extremely large price differential between low-beryllium products and high-beryllium products, use of beryllium metal or high-beryllium alloys as an input in the production of low-beryllium alloys is not cost-efficient. CR at I-12 n.35, PR at I-8 n.35.

There is also evidence to support a conclusion that this factor is satisfied under an alternative analysis posited by Vice Chairman Bragg. See Polyvinyl Alcohol from China, Japan, and Taiwan, Inv. Nos. 731-TA-726, 727 and 729 (Final), USITC Pub. 2960 at 12 n.76 (May 1996). Under this analysis, which the petitioner appears to support, this factor would be satisfied if the same types of beryllium metal and high-beryllium alloys that are used internally are not also sold in the merchant market. In this regard, the petitioner asserted that the types of beryllium that are internally transferred are not generally sold in the merchant market. See Petitioner's Prehearing Brief at 25.

depending on which category of downstream products is examined. For all downstream products except ***, beryllium metal and high-beryllium alloys were the predominant material inputs. For ***, however, beryllium metal and high-beryllium alloys represented *** percent of the material cost.⁴⁴ The third criterion is met if beryllium metal and high-beryllium alloys sold in the merchant market are not generally used in the production of the same downstream articles for which they are internally consumed. It does not appear that the merchant sales of beryllium metal and high-beryllium alloys are generally used to produce the same downstream articles for which they are captively consumed.⁴⁵

In summary, the majority of the internal transfers appears to meet the criteria of the captive production provision, with the exception of transfers to produce ***. Although it is not completely clear whether the statutory criteria should be deemed satisfied, we have determined to focus on the merchant market in this investigation for purposes of assessing market share and the financial performance of the domestic industry. We note that even if the statutory provision is not deemed satisfied, nothing in the statute or legislative history of the URAA precludes the Commission from considering as a condition of competition that a significant portion of domestic production is captively consumed, and that this may affect our assessment of whether the industry is materially injured by subject imports.

Another important condition of competition in this market is the differentiation of the imported and domestic products. Shipments of the domestic like product include both beryllium metal and high-beryllium alloys. While Commerce's scope includes both beryllium metal and high-beryllium alloys, there were virtually no imports of the high-beryllium alloys.⁴⁶ Thus, there is virtually no competition between domestic high-beryllium alloys and subject imports of high-beryllium alloys.⁴⁷ Since most subject imports consist of beryllium metal, any actual head-to-head competition between subject imports and the domestic like product in the merchant market is limited to the imported and domestic beryllium metal.

⁴⁴ During the period of investigation, the largest share of internal transfers were the ***. The second largest category of internal transfers were for the production of ***, beryllium metal and high-beryllium alloys account for *** percent of the raw material cost to produce those products. For the remaining downstream products, beryllium metal and high-beryllium alloys accounted for between *** percent of the raw material costs. CR at III-9 n.15, PR at III-3 n.15.

⁴⁵ With respect to ***, most of these transfers ***, and there is apparently no longer any demand for these downstream products. There are also no other known producers of *** using high-beryllium alloys, consequently, high-beryllium alloys sold on the merchant market are not used to produce this same downstream product. Beryllium metal and high-beryllium alloys are also generally not sold commercially to produce low-beryllium alloys. Rather, producers of low-beryllium alloys generally use beryllium hydroxide or scrap as the input material. *See, e.g.*, CR at I-24, PR at I-15 (firms that make low-beryllium alloys typically do not purchase subject products as raw materials). Petitioner has explained that the internal transfers of beryllium metal for the production of low-beryllium alloys in 1995 was an unusual occurrence caused by ***, and available beryllium metal ingots in inventory. Petitioner's Prehearing Brief at 27-28; Hearing Tr. 77-80. Finally, petitioner contends that the ingot, powder, block and blank is not generally used in the production of ***. Petitioner states that "[w]ith few exceptions, Brush Wellman does not compete in downstream markets with its customers." Petitioner's Prehearing Brief at 26. In its questionnaire response, Brush Wellman reported that ***. CR at III-10 n.18, PR at III-4 n.18.

⁴⁶ CR at IV-5, PR at IV-2, Table IV-1, CR at IV-4, PR at IV-2. A sample weighing only 1/4 pound of the high-beryllium alloys was imported from Kazakhstan for testing purposes. CR at I-2 n.4, and IV-5 n.9, PR at I-2 n.4 and IV-2 n.9.

⁴⁷ CR at I-15 n.40, Table III-2 at III-7, PR at I-10 n.40 and III-3. Of the *** pounds of high-beryllium alloys produced by Brush Wellman in 1995, *** percent ended up as scrap at the plant site and *** percent was sold commercially. CR at III-1, PR at III-1.

Beryllium metal is sold in many forms, including ingot, powder, billet/block, and blank.⁴⁸ Petitioner produces and sells a full range of beryllium metal products (including ingots, powder, structural block and metal block), whereas the vast majority of U.S. shipments of beryllium from Kazakhstan during the period of investigation consisted of beryllium metal ***.⁴⁹ By contrast, petitioner Brush Wellman sold only a relatively small percentage of beryllium metal *** in the merchant market, and instead sold mostly ***.⁵⁰ Beryllium metal ingots are brittle and usually cannot be machined into finished products, unless they are first converted into billets/blocks or blanks and thus there is little or no competition between ingots and billet, blocks and blanks.⁵¹ As a result, there is little competition between petitioner's blocks and blanks and subject imports in ingot form.⁵²

The domestic and imported beryllium metal are further differentiated by their pedigree, which refers to documentation certifying that the beryllium product has a specified chemical composition. In the case of billets, blocks and blanks, pedigree also pertains to certification of certain physical properties such as tensile strength.⁵³ Practically all of Brush Wellman's shipments of beryllium metal are accompanied by a chemical certification, and some of its shipments of beryllium metal blocks/billets and blanks are fully pedigreed.⁵⁴ A large percentage of the beryllium metal ingots from Kazakhstan imported during the period of investigation, on the other hand, was not pedigreed, and *** of the Kazakstani beryllium metal blocks and blanks imported during the period of investigation was pedigreed.⁵⁵ As a result, there exists a substantial price difference between the domestic and subject imported products.^{56 57}

Quality assurance and maintaining the product pedigree are important considerations in this industry.⁵⁸ As noted, a considerable amount of subject beryllium from Kazakhstan lacks pedigree. This nonpedigreed merchandise cannot meet the stringent requirements of, and thus cannot be used in, many

⁴⁸ Beryllium metal ingots are processed into powders and then consolidated into billets/blocks and blanks by vacuum hot pressing, hot isostatic pressing or pressing/sintering. CR at I-14, PR at I-8.

⁴⁹ CR at II-5-6 and Table IV-2 at IV-6, PR at II-3 and IV-3.

⁵⁰ Table G-2, CR at G-8, PR at G-3.

⁵¹ CR at I-10, PR at I-7.

⁵² Chairman Miller notes that while there may be limited competition between the beryllium metal in different forms, there is evidence on the record of direct competition between domestic and imported blocks and blanks and domestic and imported ingot.

⁵³ CR at I-3 n.5 and I-19, PR at I-2 n.5 and I-12; memorandum INV-U-006, Feb. 10, 1997, at 10 n.1.

⁵⁴ A full pedigree refers to a complete record of the material, including the chemical composition, physical properties such as tensile strength, consolidation method, consolidation temperature and pressure, and any other information pertaining to the material's performance. CR at I-19, PR at I-12.

⁵⁵ See Table IV-1, CR at IV-4, PR at IV-2. In interim 1996, no imports of beryllium metal from Kazakhstan were pedigreed. *Id.*

⁵⁶ We note that two purchasers of both the domestic and imported subject products indicated that they ***. CR at V-8-9, PR at V-4.

⁵⁷ While Chairman Miller recognizes that pedigree is an important factor in a purchase decision, she reaches no conclusion that the existence of pedigree is the sole reason for any price differential between the domestic and imported beryllium metal products. She notes that the petitioner, reportedly in response to pressure from imports from Kazakhstan, introduced reduced-specification beryllium ingots in order to offer a lower-priced product. Posthearing Brief of Brush Wellman, p. 37. ***. Memorandum INV-U-007, Feb. 11, 1997, at 2 n. 6. She further notes that petitioner has lost revenues on sales to end users due to competition with lower-priced, non-pedigreed imports from Kazakhstan. See Dissenting Views of Chairman Marcia E. Miller.

⁵⁸ Petitioner has made a large investment in equipment and laboratory services to produce this pedigree. CR at I-22, PR at I-14.

defense and aerospace applications.⁵⁹ Even where the imported product is pedigreed, it is not always sufficiently comparable to the domestic product due to inadequate chemistry and unreliability of the certification.⁶⁰ In those remaining applications where pedigree is unnecessary, a purchaser may prefer beryllium from Kazakhstan over the domestic like product due to its lower price or, in some instances, purchasers may instead purchase scrap beryllium which is not subject to investigation.⁶¹

We also find it significant that some of the traditional applications for domestic pedigreed beryllium metal are shrinking or have been eliminated altogether. For example, since 1994, the National Defense Stockpile has not purchased Brush Wellman's beryllium metal, certain strategic defense applications are declining,⁶² and demand for Brush Wellman's ***.⁶³

By contrast, some purchasers indicated a growth in demand for less pure or nonpedigreed forms of beryllium. The major purchaser of beryllium from Kazakhstan, Nuclear Metals, has developed a new patented technology to produce high-beryllium alloy investment castings. A major advantage of this technology is that it can use lower-grade beryllium material, and does not require the more expensive, high-quality, pedigreed beryllium produced by petitioner. As a result, this sole commercial producer of investment castings has been able to use nonpedigreed beryllium metal ingot from Kazakhstan and/or scrap in its production process.⁶⁴ Another major advantage of the investment castings technology is that it can produce nearly-finished, intricate beryllium alloy parts, which eliminates much of the extensive machining and waste normally associated with the traditional production of beryllium parts.⁶⁵

Nuclear Metals' development of this technology significantly altered its relationship with petitioner. Previously, petitioner was the sole supplier to Nuclear Metals. However, the advent of Nuclear Metals' technology allows it to use inputs from sources other than petitioner to produce investment castings, which

⁵⁹ Defense and aerospace customers typically qualify materials used in their products based on a pedigree and often explicitly state in the product design specifications which producer should supply the beryllium material. CR at I-22, PR at I-14. Notably, 13 of 17 purchasers reported that they require certification, and 10 reported that the requirement applies to 100 percent of their purchases; the eleventh reported that certification requirements apply to 99 percent of its purchases. CR at II-5, PR at II-3. *See also* CR at V-11, PR at V-5 (*** specified that it will only accept material with a pedigree).

⁶⁰ *E.g.*, CR at I-20 n.55 and IV-1 n.1, PR at I-13 n.55 and IV-1 n.1 (Kazakstani beryllium ***).

⁶¹ CR at I-21-22 and I-24, PR at I-13-15.

⁶² CR at I-23 & n.66 and II-2, PR at I-14 & n.66 and II-1-2.

⁶³ CR at III-4 and III-9 n.14, PR at III-2 and III-3 n.14.

⁶⁴ CR at I-17 n.44, PR at I-11 n.44. Nuclear Metals can adjust its metallurgical process to set its own quality standards even when using purchased scrap or non-pedigreed Kazakstani material by first producing a master melt which is chemically analyzed and adjusted as necessary. CR at I-20, PR at I-13. Nuclear Metals has patented its high-beryllium alloys and the process for producing the high-beryllium alloy near-finished parts is a trade secret. CR at I-24 n.67, PR at I-15 n.67. Brush Wellman also has produced similar investment castings, but has had difficulty with the technology and has not yet sold such products commercially. Hearing Tr. at 157; CR at I-7 n.21 and III-2, PR at I-5 n.21 and III-1.

⁶⁵ Investment castings are formed from molten high-beryllium alloys directly and are close in dimensions to the final part, and the process allows for the formation of more complex parts than achieved from traditional processes. CR at I-8 and I-15-16, PR at I-6 and I-10-11. This process is less costly since it avoids the excessive beryllium waste resulting from other processes that produce beryllium finished parts. For example, to produce a machined beryllium part, the beryllium blocks/billets or blanks are ground away by a bit until the final dimensions are achieved; another method is to form the beryllium metal blocks/billets or blanks into a wrought shape by extruding, rolling or drawing. Both of these processes generate beryllium waste. Investment castings require only minimal machining to achieve the final part and, therefore, generate less waste. CR at I-14-16, PR at I-10-11.

petitioner also has tried to produce. Consequently, Nuclear Metals has become Brush Wellman's competitor in the production of investment castings.⁶⁶

Taking into account these conditions of competition, we next consider the performance of the domestic industry, focusing on the merchant market for our analysis of the domestic industry's market share and financial performance.^{67 68} The quantity of apparent U.S. consumption of beryllium metal and high-beryllium alloys fell from 1993 to 1994, and then increased from 1994 to 1995, but remained considerably below 1993 levels. The quantity of apparent U.S. consumption for the total U.S. market (including internal transfers) was higher in January through September ("interim") 1996 than in interim 1995 but, for the merchant market only, apparent consumption was lower in interim 1996 than in interim 1995.⁶⁹ The domestic industry's share of consumption (by quantity, based on merchant market shipments) fell *** between 1993 and 1994, and then fell more significantly in 1995, but was *** higher in interim 1996 than in interim 1995.⁷⁰

The domestic industry's capacity to produce beryllium metal and high-beryllium alloys remained constant throughout the period of investigation.⁷¹ The industry's production volume declined from 1993 to 1994, then rose in 1995, but remained below its 1993 level.⁷² The industry's production of beryllium metal

⁶⁶ Commissioner Crawford notes that Nuclear Metals' technology has significantly altered the dynamics in this market. First, the technology shifts a purchaser's focus from the input to the output. That is, purchasers focus on whether Nuclear Metals' investment castings meet their specifications and cost constraints. In this regard, Nuclear Metals' technology has increased production efficiency by significantly reducing one step, machining, in the manufacturing process. The increased efficiency is passed on to Nuclear Metals' purchasers in the form of lower prices, thus reducing their costs. Consequently, Nuclear Metals' technology has resulted in both an increase in overall demand for beryllium metal and an increase in demand for products other than petitioner's product (*i.e.* subject imports). Second, as discussed above, the technology has turned petitioner, formerly Nuclear Metals' supplier, into Nuclear Metals' principal competitor. And, since petitioner no longer controls Nuclear Metals' inputs, the competition is intense.

⁶⁷ While we focus primarily on the merchant market in assessing market share and the financial performance of the industry, we have also considered the data that include internal transfers.

⁶⁸ Chairman Miller notes that she focused her analysis in assessing the condition of the industry on the total domestic market, including internal transfers. An analysis focused in the merchant market would simply reaffirm her findings based on the total domestic market.

⁶⁹ Apparent consumption by quantity, based on the merchant market only, was *** pounds in 1993, *** pounds in 1994, *** pounds in 1995, and *** pounds in interim 1996 compared with *** pounds in interim 1995. Table D-4, CR at D-6, PR at D-3. Apparent consumption by quantity, based on both the merchant market and internal transfers, was *** pounds in 1993, *** pounds in 1994, *** pounds in 1995, and *** pounds in interim 1996 compared with *** pounds in interim 1995. Table IV-2, CR at IV-6, PR at IV-3.

⁷⁰ The domestic industry's share of apparent consumption (by quantity based on merchant market consumption figures) was *** percent in 1993, *** percent in 1994, *** percent in 1995, and *** percent in interim 1996, compared with *** percent in interim 1995. Table D-4, CR at D-7, PR at D-3. Based on total consumption (including internal transfers), the domestic industry's share of apparent consumption by quantity was *** percent in 1993, *** percent in 1994, *** percent in 1995, and *** percent in interim 1996, compared with *** percent in interim 1995. Table IV-3, CR at IV-9, PR at IV-3.

⁷¹ The domestic industry's average-of-period capacity to produce beryllium metal and high-beryllium alloys was *** pounds and *** pounds, respectively, in 1993 through 1995, and *** pounds and *** pounds, respectively, in both interim periods. Table III-1, CR at III-5, PR at III-2 (to avoid double-counting, capacity data are not added for beryllium metal and high-beryllium alloys).

⁷² The industry's production volume for beryllium metal fell from *** pounds in 1993 to *** pounds in 1994, then rose to *** pounds in 1996, for an overall decrease of *** percent; for high-beryllium alloys, production volume declined from *** pounds in 1993 to *** pounds in 1994 and then increased to *** pounds in 1995 for an overall

(continued...)

was higher in interim 1996 than in interim 1995, but production of high-beryllium alloys was lower in interim 1996 compared with interim 1995.⁷³ Capacity utilization in the domestic industry followed the same pattern as production.⁷⁴

The domestic industry's total U.S. shipments by volume declined from 1993 to 1994, then increased *** in 1995, but remained below their 1993 level, and were higher in interim 1996 than in interim 1995.⁷⁵ Total U.S. shipments by value declined steadily between 1993 and 1995, but were also higher in interim 1996 compared with interim 1995.⁷⁶ The quantity of the domestic industry's finished goods inventories increased from 1993 to 1994, declined in 1995, and was *** higher in interim 1996 than in interim 1995. As a ratio to shipments, domestic finished goods inventories increased from 1993 to 1995 and were higher in interim 1996 compared with interim 1995.⁷⁷

The average number of production and related workers employed by the domestic beryllium metal and high-beryllium alloy industry fell from 1993 to 1995, but was higher in interim 1996 than in interim 1995.⁷⁸ Hours worked followed the same pattern.⁷⁹ Employee wages fell from 1993 to 1994, decreased *** in 1995, and were higher in interim 1996 compared with interim 1995.⁸⁰ Hourly wages increased steadily

⁷² (...continued)

decrease of *** percent. Tables III-1 and C-1, CR at III-5 and C-4, PR at III-2 and C-3 (to avoid double-counting, production data are not added for beryllium metal and high-beryllium alloys).

⁷³ The industry's production volume for beryllium metal was *** pounds in interim 1996, compared with *** pounds in interim 1995, a difference of *** percent, whereas production of high-beryllium alloys was *** pounds in interim 1996 compared with *** pounds in interim 1995, a difference of *** percent. Tables III-1 and C-1, CR at III-5 and C-4, PR at III-2 and C-3 (to avoid double-counting, production data are not added for beryllium metal and high-beryllium alloys).

⁷⁴ The domestic industry's capacity utilization for beryllium metal fell from *** percent in 1993 to *** percent in 1994, then increased to *** percent in 1995. Capacity utilization was *** percent in interim 1996, compared with *** percent in interim 1995. Capacity utilization for high-beryllium alloys fell from *** percent in 1993 to *** percent in 1994, then increased to *** percent in 1995 and was *** percent in interim 1996 compared with *** percent in interim 1995. Table III-1, CR at III-5, PR at III-2 (to avoid double-counting, capacity utilization data are not added for beryllium metal and high-beryllium alloys).

⁷⁵ The domestic industry's U.S. shipments by volume fell from *** pounds in 1993 to *** pounds in 1994, then rose to *** pounds in 1995, for an overall decrease of *** percent. The industry's U.S. shipments by volume were *** pounds in interim 1996, compared with *** pounds in interim 1995, a difference of *** percent. Tables III-2 and C-1, CR at III-7 and C-4, PR at III-3 and C-3.

⁷⁶ The domestic industry's U.S. shipments by value fell from \$*** in 1993 to \$*** in 1994 and \$*** in 1995, for an overall decrease of *** percent. The industry's U.S. shipments by value were \$*** in interim 1996, compared with \$*** in interim 1995, a difference of *** percent. Tables III-2 and C-1, CR at III-7 and C-4, PR at III-3 and C-3.

⁷⁷ The U.S. industry's inventories of finished beryllium metal and high-beryllium alloys increased from *** pounds in 1993 to *** pounds in 1994, and subsequently decreased to *** pounds in 1995, for an overall decline of *** percent. Inventories were *** pounds in interim 1996 compared with *** pounds in interim 1995, a difference of *** percent. Domestic inventories as a percent of total shipments increased from *** percent in 1993 to *** percent in 1994 before falling to *** percent in 1995, and were *** percent in interim 1996 compared with *** percent in interim 1995. Tables III-3 and C-1, CR at III-11 and C-4, PR at III-4 and C-3.

⁷⁸ Production and related employees fell from *** in 1993 to *** in 1994 and *** in 1995. The employment level was *** in interim 1996 compared with *** in interim 1995. Table III-4, CR at III-12, PR at III-4.

⁷⁹ Hours worked fell from *** in 1993 to *** in 1994 and *** in 1995, and were *** in interim 1996 compared with *** in interim 1995. Table III-4, CR at III-12, PR at III-4.

⁸⁰ Employee wages fell from \$*** in 1993 to \$*** in 1994 and then decreased *** in 1995. In interim 1996, employee wages were \$*** compared with \$*** in interim 1995. Table III-4, CR at III-12, PR at III-4.

from 1993 to 1995, and were higher in interim 1996 than in interim 1995.⁸¹ Productivity to produce beryllium metal fell from 1993 to 1994, but rose between 1994 and 1995, and was higher in interim 1996 compared with interim 1995. Productivity to produce high-beryllium alloys increased from 1993 to 1994, fell in 1995, but remained above the 1993 level, and was lower in interim 1996 than in interim 1995. Unit labor costs to produce beryllium metal increased from 1993 to 1994, whereas they decreased for high-beryllium alloys. From 1994 to 1995, unit labor costs to produce beryllium metal declined, but unit labor costs to produce high-beryllium alloys increased. Similarly, unit labor costs to produce beryllium metal were lower in interim 1996 compared with interim 1995, but unit labor costs to produce high-beryllium alloys were higher.⁸²

Net sales of beryllium metal and high-beryllium alloys (by volume, based on trade-only data) fell from 1993 to 1994, then increased in 1995, remaining below their 1993 level, and were lower in interim 1996 than in interim 1995. Net sales by value followed the same pattern.⁸³ The domestic industry's gross profit declined from 1993 to 1994, then rebounded in 1995, but remained below the 1993 level. Gross profits were lower in interim 1996 than in interim 1995.⁸⁴ There were *** operating *** and operating *** margins (as a ratio to net sales) throughout the period of investigation, with the highest *** in 1994.⁸⁵ The domestic industry's unit cost of goods sold ("COGS") increased from 1993 to 1994, then decreased in 1995, but remained above their 1993 level. In interim 1996, unit COGS were higher than in interim 1995. Unit selling, general and administrative ("SG&A") expenses increased from 1993 to 1995, reaching their highest point in 1994, and were lower in interim 1996 than in interim 1995.^{86 87}

The domestic industry's capital expenditures rose *** from 1993 to 1994, then fell below their 1993 level in 1995, but were significantly higher in interim 1996 than in interim 1995.⁸⁸ Research and

⁸¹ Hourly wages rose from \$*** in 1993 to \$*** in 1995, and were \$*** in interim 1996 compared with \$*** in interim 1995. Table III-4, CR at III-12, PR at III-4.

⁸² See generally Table III-4, CR at III-12, PR at III-4 (to avoid double-counting, beryllium metal and high-beryllium alloy figures are not added).

⁸³ Net sales by volume fell from *** pounds in 1993 to *** pounds in 1994, then rose to *** pounds in 1995. Net sales by value were *** pounds in interim 1996, compared with *** pounds in interim 1995. Net sales by value fell from \$*** in 1993 to \$*** in 1994, then rose to \$*** in 1995, and were \$*** in interim 1996 compared with \$*** in interim 1995. Table VI-1, CR at VI-4, PR at VI-2. Considering both trade and internal transfers, net sales by volume fell from *** pounds in 1993 to *** pounds in 1994, then rose to *** pounds in 1995; net sales by value were *** pounds in interim 1996, compared with *** pounds in interim 1995. Net sales by value fell from \$*** in 1993 to \$*** in 1994, then rose to \$*** in 1995, and were \$*** in interim 1996 compared with \$*** in interim 1995. Table VI-2, CR at VI-6, PR at VI-2.

⁸⁴ Gross profits fell from \$*** in 1993 to \$*** in 1994, then rose to \$*** in 1995, and were \$*** in interim 1996, compared with \$*** in interim 1995. Table VI-1, CR at VI-4, PR at VI-2.

⁸⁵ Operating *** increased from \$*** in 1993 to \$*** in 1994, then fell to a *** of \$*** in 1995. Operating *** were \$*** in interim 1996 compared with \$*** in interim 1995. The industry's operating *** margin rose from *** percent in 1993 to *** percent in 1994 and then improved to *** percent in 1995, and was *** percent in interim 1996, compared with *** percent in interim 1995. Table VI-1, CR at VI-4, PR at VI-2.

⁸⁶ Tables VI-1 and VI-2, CR at VI-4 and VI-6, PR at VI-2.

⁸⁷ Gross profits, operating ***, and SG&A expenses were identical for trade and transfer operations since internal transfers were valued at cost and, therefore, did not affect any levels of profitability. See Tables VI-1 and VI-2, CR at VI-4 and VI-6, PR at VI-2. For a discussion of why Brush Wellman's transfers were valued at cost for purposes of this report, see CR at VI-2, PR at VI-1.

⁸⁸ Capital expenditures rose from \$*** in 1993 to \$*** in 1994, then fell to \$*** in 1995. Capital expenditures were \$*** in interim 1996 compared with \$*** in interim 1995. Table VI-8, CR at VI-13, PR at VI-3.

development expenses rose from 1993 to 1994, then fell below their 1993 level in 1995, but were higher in interim 1996 than in interim 1995.^{89 90}

III. NO MATERIAL INJURY BY REASON OF LTFV IMPORTS

In the final phase of antidumping investigations, the Commission determines whether an industry in the United States is materially injured by reason of the LTFV imports under investigation.⁹¹ In making this determination, the Commission must consider the volume of imports, their effect on prices for the domestic like product, and their impact on domestic producers of the domestic like product, but only in the context of U.S. production operations.⁹² Although the Commission may consider causes of injury to the industry other than the LTFV imports,⁹³ it is not to weigh causes.^{94 95 96}

⁸⁹ Research and development expenditures rose from \$*** in 1993 to \$*** in 1994, then fell to \$*** in 1995. Research and development expenditures were \$*** in interim 1996 compared with \$*** in interim 1995. Table VI-8, CR at VI-13, PR at VI-3. These figures do not include research and development expenditures that petitioner reported for its production of the downstream investment castings. We note that the statute clearly provides that the effect of LTFV imports are to be assessed in relation to the U.S. production of a domestic like product. 19 U.S.C. § 1677(4)(D); *see also General Motors Corp. v. United States*, 827 F. Supp. 774, 780 (Ct. Int'l Trade 1993) (the product was minivans; lost sales of other types of vehicles not to be considered). Thus, the Commission is to consider the research and development of the beryllium metal and high-beryllium alloy industry, not of the investment casting industry.

⁹⁰ Based upon examination of the relevant statutory factors, Commissioner Newquist concludes that the domestic industry producing beryllium metal and high-beryllium alloys is experiencing material injury.

⁹¹ 19 U.S.C. § 1673b(a). The statute defines "material injury" as "harm which is not inconsequential, immaterial, or unimportant." 19 U.S.C. § 1677(7)(A).

⁹² 19 U.S.C. § 1677(7)(B)(i). The Commission "may consider such other economic factors as are relevant to the determination," but shall "identify each [such] factor . . . and explain in full its relevance to the determination." 19 U.S.C. § 1677(7)(B).

⁹³ Alternative causes may include the following:

[T]he volume and prices of imports sold at fair value, contraction in demand or changes in patterns of consumption, trade, restrictive practices of and competition between the foreign and domestic producers, developments in technology, and the export performance and productivity of the domestic industry.

S. Rep. No. 249, 96th Cong., 1st Sess. 74 (1979). Similar language is contained in the House Report. H.R. Rep. No. 317, 96th Cong., 1st Sess. 46-47 (1979).

⁹⁴ *See, e.g., Gerald Metals, Inc. v. United States*, Slip Op. 96-142 at 12 (Ct. Int'l Trade, Aug. 21, 1996); *Citrosuco Paulista, S.A. v. United States*, 704 F. Supp. 1075, 1101 (Ct. Int'l Trade 1988).

⁹⁵ Commissioner Newquist further notes that the Commission need not determine that imports are "the principal, a substantial, or a significant cause of material injury." S. Rep. No. 249, at 57, 74. Rather, a finding that imports are a cause of material injury is sufficient. *See, e.g., Metallwerken Nederland B.V. v. United States*, 728 F. Supp. 730, 741 (Ct. Int'l Trade 1989); *Citrosuco Paulista*, 704 F. Supp. at 1101.

⁹⁶ For a detailed description of Commissioner Crawford's analytical framework, see *Polyvinyl Alcohol from China, Japan, and Taiwan*, Invs. Nos. 731-TA-726, 727, and 729 (Final), USITC Pub. 2960 at 25-26 (May 1996). Both the Court of International Trade and the United States Court of Appeals for the Federal Circuit have held that the "statutory language fits very well" with Commissioner Crawford's mode of analysis, expressly holding that her mode of analysis comports with the statutory requirements for reaching a determination of material injury by reason of the subject imports. *United States Steel Group v. United States*, 96 F.3d 1352, 1361 (Fed. Cir. 1996), *aff'g* 873 F. Supp. 673, 694-95 (Ct. Int'l Trade 1994). Commissioner Crawford notes that the statute requires that the Commission determine whether a domestic industry is "materially injured by reason of" the LTFV imports. She finds that the clear meaning of

(continued...)

For the reasons discussed in the following sections, we do not find that the volume of imports of beryllium metal and high-beryllium alloys from Kazakhstan was significant, that subject imports had an adverse effect on domestic prices or had an adverse impact on the domestic industry.

A. Volume of the Subject Imports

As a threshold matter, we note that we have included in our calculations of subject import volume and market share, all reported imports of beryllium metal from ***. In our view, the weight of the evidence strongly indicates those imports were produced in Kazakhstan, rather than *** or another third country.⁹⁷ We have also included in subject import volume those imports of Spindrift Corp., which respondents claim are non-subject scrap, that we were able to identify as being in subject forms (*e.g.*, ingots, ingot lumps, blocks or blanks).⁹⁸

The volume of U.S. shipments of subject imports of beryllium metal and high-beryllium alloys was relatively low in 1993 and 1994, but then increased in 1995. The volume of subject imports was significantly lower in interim 1996 compared with interim 1995.⁹⁹ Measured by value, the subject imports followed the same trend.^{100 101}

⁹⁶ (...continued)

the statute is to require a determination of whether the domestic industry is materially injured by reason of LTFV imports, not by reason of the LTFV imports among other things. Many, if not most, domestic industries are subject to injury from more than one economic factor. Of these factors, there may be more than one that independently are causing material injury to the domestic industry. It is assumed in the legislative history that the “ITC will consider information which indicates that harm is caused by factors other than less-than-fair-value imports.” S. Rep. No. 249, 96th Cong., 1st Sess. 75 (1979). However, the legislative history makes it clear that the Commission is not to weigh or prioritize the factors that are independently causing material injury. *Id.* at 74; H.R. Rep. No. 317, 96th Cong., 1st Sess. 46-47 (1979). The Commission is not to determine if the LTFV imports are “the principal, a substantial or a significant cause of material injury.” S. Rep. No. 96-249 at 74 (1979). Rather, it is to determine whether any injury “by reason of” the LTFV imports is material. That is, the Commission must determine if the subject imports are causing material injury to the domestic industry. “When determining the effect of imports on the domestic industry, the Commission must consider all relevant factors that can demonstrate if unfairly traded imports are materially injuring the domestic industry.” S. Rep. No. 71, 100th Cong., 1st Sess. 116 (1987) (emphasis added).

⁹⁷ Significantly, the ***. CR at I-3 n.6 and IV-2 n.5, PR at I-2 n.6 and IV-1 n.5. Moreover, only the United States, China and India have operating facilities that can produce beryllium metal, and there have been no allegations or evidence to suggest that the beryllium imports from *** originated in either China or India. CR at I-12, PR at I-8.

⁹⁸ We identified approximately *** pounds of Spindrift’s *** pounds of beryllium imported from Kazakhstan in 1995 to be subject product. CR at I-3 n.5 and IV-3, PR at I-2 n.5 and IV-2. Therefore, this *** pounds is included in our discussion of subject import volume and U.S. shipments of these imports are included in our discussion of market share.

⁹⁹ The volume of U.S. shipments of the subject imports by quantity was *** pounds in 1993 and *** pounds in 1994, but then increased to *** pounds in 1995. In interim 1996, the volume was *** pounds compared with *** pounds in interim 1995. Table IV-2, CR at IV-6, PR at IV-3. We do not place great weight on a comparison of import volumes in interim 1996 with interim 1995, since the lower level in 1996 may be attributable to the filing of the investigation. *See* 19 U.S.C. § 1677(7)(I).

¹⁰⁰ U.S. shipments of subject imports by value rose from \$*** in 1993 to \$*** in 1994 and \$*** in 1995. U.S. shipments of subject imports by value were \$*** in interim 1996, compared with \$*** in interim 1995. Table IV-2, CR at IV-7, PR at IV-3.

¹⁰¹ Commissioner Crawford does not rely on changes in the volume of imports or industry performance on a year-to-year basis (*i.e.*, trends) in her determination of whether an industry is materially injured or threatened with material injury by reason of LTFV imports.

Similarly, the market share of subject imports by volume (in the merchant market) was relatively low in 1993 and 1994 and then increased, as the volume of shipments increased, in 1995. In interim 1996, subject imports' market share was considerably lower than in interim 1995.¹⁰² By value, the market share of subject imports was much lower, reaching only *** percent in 1995 when the volume of imports was at its height.¹⁰³

While the increase in volume and market share could be considered significant in some factual contexts, they are not in this investigation. The differentiation of the subject imported and domestic products, discussed extensively above, results in subject imports being preferred in certain applications while the domestic like product is preferred, indeed required, in others.¹⁰⁴ As a result, there is only very limited direct competition between subject imports and the domestic like product.

Most of the subject imports consist of beryllium metal ingots, with no commercial imports of high-beryllium alloys. Conversely, the domestic industry sold *** commercial quantities of beryllium metal ingots over the period of investigation. The *** competition between domestically produced beryllium metal ingots and subject imports of beryllium metal ingots during the period of investigation were for sales to ***.¹⁰⁵ The *** of the increase in U.S. shipments of beryllium metal imports from Kazakhstan in 1995, approximately *** percent, was accounted for by sales to Nuclear Metals for use in the production of investment castings.¹⁰⁶ As discussed previously, Nuclear Metals does not require the higher quality (and more expensive), pedigreed domestic beryllium metal in its investment castings production process.¹⁰⁷ Thus, the increase in subject

¹⁰² The market share of subject imports by quantity, based on merchant market consumption figures, rose from *** percent in 1993 to *** percent in 1994 to *** percent in 1995, and was *** percent in interim 1996, compared with *** percent in interim 1995. Table D-4, CR at D-7, PR at D-3. The market share of subject imports, including both merchant market sales and internal transfers, by quantity rose from *** percent in 1993 to *** percent in 1994 to *** percent in 1995, and was *** percent in interim 1996, compared with *** percent in interim 1995. Table IV-3, CR at IV-9, PR at IV-3.

¹⁰³ The market share of subject imports by value, based on merchant market consumption figures, rose from *** percent in 1993 to *** percent in 1994 to *** percent in 1995, and was *** percent in interim 1996, compared with *** percent in interim 1995. Table D-4, CR at D-7, PR at D-3. The market share of subject imports, including both merchant market sales and internal transfers, by value rose from *** percent in 1993 to *** percent in 1994 to *** percent in 1995, and was *** percent in interim 1996, compared with *** percent in interim 1995. Table IV-3, CR at IV-10, PR at IV-3.

¹⁰⁴ There is also some evidence that "Buy American" considerations and differences in market areas, lead times for delivery, reliability of supply and technical support also affect competition between the subject imports and the domestic like product. See CR at II-6-8, PR at II-3-4.

¹⁰⁵ See memorandum INV-U-006, Feb. 10, 1997.

¹⁰⁶ Cf. Tables IV-1 and IV-2, CR at IV-4 and IV-6, PR at IV-2-3. In this regard, we note that the *** cited by petitioner in its lost sales and revenue allegations, involved sales to ***. CR at V-10-11, PR at V-5.

¹⁰⁷ Nuclear Metals has insisted that it would not purchase domestic beryllium metal even in the absence of Kazakstani beryllium metal for several reasons. First, petitioner Brush Wellman is a competitor of Nuclear Metals in the production of downstream beryllium components. As such, Nuclear Metals does not want to rely upon a competitor as a source of its input products. Hearing Tr. at 126-128; CR at III-3 and V-10-11, PR at III-2 and V-5. Second, Nuclear Metals has indicated that it has had quality and delivery problems in the past when it did purchase beryllium from Brush Wellman. Hearing Tr. at 126. In addition, Nuclear Metals has stated that it decided to shift purchases away from Brush Wellman because of a desire to have more than one source of supply as well as dissatisfaction with the contract terms offered by Brush Wellman. Hearing Tr. at 126; CR at H-5-6, PR at H-5. Furthermore, if subject Kazakstani beryllium were unavailable, Nuclear Metals would substitute high-quality beryllium scrap from domestic sources and from Kazakhstan, rather than purchase Brush Wellman's beryllium metal. CR at I-20-22, PR at I-13-14. See also Hearing Tr. at 128, 143 and 190. Nuclear Metals is also ***. CR at III-4, PR at III-2.

imports reflected increasing demand for this emerging beryllium application, rather than a displacement of traditional sales of domestic beryllium.¹⁰⁸

The sales of the domestic and Kazakstani beryllium metal ingot to ***. In 1995, however, such sales of the imported product represented only approximately *** percent of the U.S. shipments of subject imports, and Brush Wellman's sales were equal to only approximately *** percent of the domestic industry's U.S. commercial shipments of the domestic like product and represented only *** percent of U.S. merchant market consumption of the domestic like product.¹⁰⁹

With respect to competition between imported and domestic beryllium metal blocks/blanks and billets, *** all subject imports of those forms of beryllium were nonpedigreed.¹¹⁰ Thirteen of 17 purchasers reported that they require certification, and 10 reported that the requirement applies to 100 percent of their purchases.¹¹¹ Purchases of the Kazakstani beryllium metal billets, blocks and blanks were used primarily for research, experimental and prototype development purposes and did not compete with domestic beryllium metal billets, blocks and blanks.¹¹² Consequently, we also do not find that the volume of imports of the Kazakstani billets, blocks and blanks is significant given that major purchasers cannot generally use a

¹⁰⁸ At the hearing, petitioner argued that it faces "the total loss" of sales of beryllium block to Lockheed's "Lantirn" program due to investment castings manufactured using Kazakstani beryllium. Hearing Tr. at 25. We believe that this is an overstatement. Lockheed Martin has used investment castings in some applications, but has not yet decided whether to use them in the Lantirn program. Hearing Tr. at 149-160. Also, petitioner conceded at the Commission's hearing, that investment castings have major advantages over machined beryllium parts that typically are made with domestic beryllium metal or high-beryllium alloy. See Hearing Tr. at 32 ("because investment case [sic] aluminum beryllium parts require far less finish machining, they are substantially lower in cost to the end-user."). Further, Nuclear Metals' investment castings are not produced exclusively with subject imports, but have also been produced using scrap. See, e.g., Hearing Tr. at 143 and 190. Thus competition petitioner faces with the investment casting technology does not involve subject imports in all cases.

Finally, the statute requires us to focus on the effect of LTFV imports on production of the domestic like product, not on production of downstream articles not included in the domestic like product. See 19 U.S.C. § 1677(7)(D). In focusing on whether there is material injury by reason of subject imports, we note that ***. CR at V-12, PR at V-5. In 1995, ***. CR at V-12, PR at V-5.

¹⁰⁹ Calculated based on data in memorandum INV-U-006, Feb. 10, 1997 and Tables IV-2 and D-4, CR at IV-6 and D-6, PR at IV-3 and D-3. Furthermore, the purchaser, ***. CR at V-14, PR at V-5.

¹¹⁰ We note that only *** of *** purchasers that purchased beryllium metal blocks/blanks and billets during the period of investigation, had purchased subject imports of beryllium metal blocks/blanks and billets. The other *** purchased only petitioner's product. See memorandum INV-U-006, Feb. 10, 1997, at 2-7.

¹¹¹ An eleventh reported that certification requirements apply to 99 percent of its purchases. CR at II-5, PR at II-3. See also CR at V-11-12, PR at V-5 (petitioner's ***).

¹¹² Memorandum INV-U-006, Feb. 10, 1997, at 2; CR at II-4 and V-11, PR at II-2 and V-5. ***. CR at V-14-15, PR at V-5-6. Other reported uses of these Kazakstani products were for production of samples and for testing purposes. CR at I-22, PR at I-14.

nonpedigreed product.¹¹³ We also find it noteworthy that only nonpedigreed imports of beryllium metal from Kazakhstan were imported in the most recent period.¹¹⁴

Because of the limited competition between subject imports from Kazakhstan and the domestic like product, we do not find the absolute or increasing volume and market share of subject imports to be significant.

B. Price Effects of the Subject Imports

The Commission requested pricing data for three product categories; pricing data for subject imports were only available for one product category (vacuum-cast beryllium metal in the form of ingots or lumps containing 99 percent or greater beryllium and less than 0.5 percent oxygen, with the balance being various metallic elements).¹¹⁵ This category represented virtually all U.S. shipments of subject imports in 1995, but only approximately *** percent of the domestic industry's U.S. commercial shipments in 1995.¹¹⁶ In our view, this provides further evidence of the lack of head-to-head competition between subject imports and the domestic like product.¹¹⁷

In this one product category where price comparisons were possible, subject imports were priced below the comparable domestic product in six quarters. However, we find that the lower price of the subject imports reflects the significant differences in the domestic and imported products in terms of chemistry, physical properties and pedigree. As already discussed, because of the differences in the subject imports and domestic like product, there are essentially different applications for high-quality, domestic pedigreed beryllium metal and subject imports, with only limited overlap in competition, which we do not find significant.

Further, the fact that only one of 17 responding purchasers indicated that price was the most important consideration in purchasing decisions demonstrates that domestic and subject imported beryllium metal do not compete on the basis of price.¹¹⁸ Even when important product specifications had been met,

¹¹³ Indeed, several importers and purchasers specifically cited the lack of pedigree for imported beryllium metal from Kazakhstan as a serious impediment to sales to some customers. CR at II-6-7, PR at II-4. There is also evidence that some machine shops reported that the imported beryllium metal blocks/blanks and billets were ***. CR at V-12, PR at V-5. There were only *** purchasers that purchased both domestic and imported beryllium blocks and blanks. One, ***, stated that it purchased the Kazakstani blocks and blanks because it prefers to have two sources of supply and because petitioner had ***. Another, ***. Memorandum INV-U-006, Feb. 10, 1997, at 2; CR at V-11 and V-15, PR at V-5-6.

¹¹⁴ Table IV-1, CR at IV-4, PR at IV-2.

¹¹⁵ See CR at V-4, PR at V-3. Because beryllium products are made to order with each sale involving unique specifications, even prices within this very specific pricing category could represent differing products. CR at II-6-7 and V-3-4, PR at II-3-4 and V-3. For example, subject import prices reported in this category include both pedigreed and nonpedigreed products, which can affect relative prices.

¹¹⁶ Tables IV-2, D-4 and G-2, CR at IV-6, D-6 and G-8, PR at IV-3, D-3 and G-3. There were some sales of beryllium metal block from Kazakhstan in 1995 and 1996, but they did not correspond directly to either pricing category 2 or 3. CR at V-7, PR at V-4.

¹¹⁷ We note that in the preliminary phase of this investigation, the Commission requested pricing data for two additional product categories, but those also failed to result in any possible price comparisons, and were therefore dropped in the final phase of the investigation. In the final phase, the Commission sought the parties' input as to whether there were other product categories that would yield additional price comparisons. None of the parties proffered any other possible categories.

¹¹⁸ Five purchasers ranked quality as the most important factor, three purchasers ranked pedigree as the most important factor, and two indicated that the end user chose the supplier of the beryllium metal. Other purchasers

(continued...)

e.g., quality, chemical properties and availability, 15 of 18 purchasers reported that other factors were more important than price in choosing a supplier.^{119 120} While petitioner provided 16 lost sales and 5 lost revenue allegations, most of the allegations were either denied or non-price reasons were given to explain the purchase of the Kazakstani imports instead of the domestic like product.¹²¹ Due to the significant differences and limited competition between the domestic and subject imported products and the fact that price does not appear to be a major factor considered by purchasers, we do not find that there has been significant underselling.

We also do not find a significant degree of price suppression or price depression by reason of subject imports. The product differentiation, the importance of non-price factors, and the limited head-to-head competition between subject imports and the domestic like product limit any significant price depression or price suppression by reason of the subject imports. For the one product category where there was any evidence of competition between subject imports and the domestic like product, petitioner's and subject imports' quarterly average prices *** during the period of investigation. There was no perceptible pattern and no evidence of correlation between the pricing patterns of the domestic like product and subject imports, despite the fact that subject imports were consistently priced lower than the domestic like product.¹²² Furthermore, this product category represented in large part sales of subject imports to Nuclear Metals for use in its emerging investment castings operations.

Based on the above, we do not find that there has been significant price underselling by the imported beryllium metal from Kazakhstan, nor do we find that the effect of such imports has otherwise depressed prices, or prevented price increases, to a significant degree.

¹¹⁸ (...continued)

indicated availability, material composition, and reputation/reliability were the most important considerations. Three purchasers stated that Brush Wellman was their only source of supply. CR at II-4-5, PR at II-3.

¹¹⁹ CR at II-5, PR at II-3.

¹²⁰ Commissioner Crawford concurs in her colleagues' conclusion that subject imports are not having significant effects on domestic prices for beryllium metal and high-beryllium alloys. However, she does not join in the remainder of this discussion of price effects. To evaluate the effects of the dumping on domestic prices, Commissioner Crawford compares domestic prices that existed when the imports were dumped with what domestic prices would have been if the imports had been fairly traded. In most cases, if the subject imports had not been traded unfairly, their prices in the U.S. market would have increased. In this investigation, the dumping margin is 16.49 percent. Thus, prices for the subject imports likely would have risen by up to this amount if they had been priced fairly, and they would have become more expensive relative to the domestic product and other alternative sources for the product (*e.g.*, nonsubject imports). In such a case, if the products are substitutable, demand would have shifted away from subject imports and towards the relatively less-expensive products. There are virtually no nonsubject imports in the domestic market, and thus petitioner is the sole domestic supplier to meet any shift in demand away from subject imports. However, as discussed extensively above, there is virtually no competition between subject imports and the domestic like product, that is, they are quite poor substitutes for each other. Consequently, even at fairly traded prices, purchasers would have continued to purchase subject imports, and thus the demand for subject imports would not have shifted significantly, if at all, to the domestic product. With no shift in demand towards the domestic product, petitioner would not have been able to increase its prices. Therefore, Commissioner Crawford finds that subject imports are not having significant effects on domestic prices for beryllium metal and high-beryllium alloys.

¹²¹ See generally CR at V-9-17, PR at V-5-6.

¹²² We do note that prices for the domestic like product for sales to one customer, ***, declined over the period of investigation. ***. CR at V-14, PR at V-5. In any event, as noted above, sales by Brush Wellman to *** accounted for only approximately *** percent of the domestic industry's U.S. commercial shipments, and only *** percent of U.S. merchant market consumption of the domestic like product. Calculated based on data in memorandum INV-U-006, Feb. 10, 1997, and Table D-4, CR at D-6, PR at D-3.

C. Impact of the Subject Imports on the Domestic Industry^{123 124 125 126}

We recognize that the performance of the domestic industry producing beryllium metal and high-beryllium alloys is less than robust in terms of ***. Nevertheless, we cannot attribute the poor performance of the domestic industry to the subject imports given the absence of volume and price effects of subject imports.¹²⁷

Rather, we find that the performance of the domestic industry is attributed to the decline in demand for the industry's traditional beryllium metal and high-beryllium alloy applications. Most notably, the end of the Defense Stockpile contract corresponded directly to declines in the domestic industry's ***, and increases

¹²³ As part of our consideration of the impact of imports, the statute specifies that the Commission is to consider in an antidumping proceeding, "the magnitude of the dumping margin." 19 U.S.C. § 1677(7)(C)(iii)(V). The Statement of Administrative Action ("SAA") indicates that the amendment "does not alter the requirement in current law that none of the factors which the Commission considers is necessarily dispositive of the Commission's material injury analysis." SAA at 180. The statute defines the "magnitude of the margin of dumping" to be used by the Commission in a final determination as "the dumping margin or margins most recently published by [Commerce] prior to the closing of the Commission's administrative record." 19 U.S.C. § 1677(35)(C). The dumping margin identified in Commerce's final determinations prior to the closing of our administrative record in this investigation is 16.49 percent. CR at I-4 & n.11, PR at I-3 & n.11.

¹²⁴ Vice Chairman Bragg notes that she does not ordinarily consider the margin of dumping to be of particular significance in evaluating the effects of subject imports on domestic producers. *See* Separate and Dissenting Views of Commissioner Lynn M. Bragg in Bicycles from China, Inv. No. 731-TA-731 (Final), USITC Pub. 2968 (June 1996).

¹²⁵ Commissioner Newquist notes that, in his analytical framework, "evaluation of the magnitude of the margin of dumping" is not generally helpful in answering the questions posed by the statute: whether the domestic industry is materially injured, and, if so, whether such material injury is by reason of the dumped subject imports.

¹²⁶ Commissioner Crawford concurs that subject imports are not having a significant impact on the domestic industry. In her analysis of material injury by reason of dumped imports, Commissioner Crawford evaluates the impact on the domestic industry by comparing the state of the industry when the imports were dumped with what the state of the industry would have been had the imports been fairly traded. In assessing the impact of the subject imports on the domestic industry, she considers, among other relevant factors, output, sales, inventories, capacity utilization, market share, employment, wages, productivity, profits, cash flow, return on investment, ability to raise capital, research and development and other relevant factors as required by 19 U.S.C. § 1677(7)(C)(iii). These factors together either encompass or reflect the volume and price effects of the dumped imports, and so she gauges the impact of the dumping through those effects. In this regard, the impact on the domestic industry's prices, sales and overall revenues is critical, because the impact on the other industry indicators (*e.g.*, employment, wages, etc.) is derived from this impact. As she noted earlier, Commissioner Crawford finds that demand for the domestic product would not have increased significantly, if at all, had subject imports been priced fairly. Thus, petitioner would not have been able to increase significantly either its prices or the quantity sold. Without an increase in either prices or quantity sold, petitioner would not have increased its revenues significantly, and thus would not have been materially better off if the subject imports had been priced fairly. Therefore, Commissioner Crawford determines that the domestic industry is not materially injured by reason of LTFV imports of beryllium metal and high-beryllium alloys from Kazakhstan.

¹²⁷ The domestic industry *** throughout the period of investigation. However, we do not see a correlation between such losses and subject imports. When subject imports were at relatively low levels in 1993 and 1994, the domestic industry's operating *** than when subject imports were at their height in 1995. The domestic industry also experienced the largest declines in net sales and gross profits between 1993 and 1994, prior to the increase in subject imports. *See* Table VI-1, CR at VI-4, PR at VI-2 (trade-only operations of beryllium metal and high-beryllium alloys). The lack of correlation is also apparent when considering the beryllium metal product line only. Table VI-4, CR at VI-8, PR at VI-3 (trade-only operations of beryllium metal).

in the domestic industry's ***. The collapse in demand for petitioner's *** also contributed to the industry's overall performance.¹²⁸

In light of our findings of no significant volume or adverse price effects, we do not find that the subject imports are having an adverse impact on the domestic industry. Accordingly, we find that the domestic industry producing beryllium metal and high-beryllium alloys is not materially injured by reason of the subject imports from Kazakhstan.¹²⁹

IV. NO THREAT OF MATERIAL INJURY BY REASON OF LTFV IMPORTS

Section 771(7)(F) of the Act directs the Commission to determine whether the U.S. industry is threatened with material injury by reason of the subject imports by analyzing whether “further dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued or a suspension agreement is accepted.”¹³⁰ The Commission may not make such a determination “on the basis of mere conjecture or supposition,”¹³¹ and considers the threat factors “as a whole” in making its determination whether further dumped or subsidized imports are imminent and whether material injury by reason of imports would occur unless an order is issued.¹³² In making our determination, we have considered all statutory factors¹³³ that are relevant to these investigations.¹³⁴

Since 1993, there has been no production or capacity to produce subject beryllium metal or high-beryllium alloys in Kazakhstan.¹³⁵ Nor does Kazakhstan have the production capacity to produce beryllium

¹²⁸ CR at III-4, III-6, III-13, VI-3 and VI-5, PR at III-2-4 and VI-2. Petitioner testified at the hearing that its two biggest markets, representing two-thirds of its sales, disappeared in the early 1990s as a result of rapidly shrinking military spending and the collapse of its mainframe computer business. Hearing Tr. at 14-15.

¹²⁹ Petitioner urged the Commission to focus on the portion of the industry producing beryllium metal only, rather than both beryllium metal and high-beryllium alloys, due to the lack of imports of high-beryllium alloys. We note that in focusing on the merchant market, most of petitioner's production of high-beryllium alloys was already eliminated since *** percent thereof was captively consumed.

¹³⁰ 19 U.S.C. § 1673b(a) and 1677(7)(F)(ii).

¹³¹ 19 U.S.C. § 1677(7)(F)(ii). An affirmative threat determination must be based upon “positive evidence tending to show an intention to increase the levels of importation.” Metallwerken Nederland B.V. v. United States, 744 F. Supp. 281, 287 (Ct. Int'l Trade 1990), citing American Spring Wire Corp. v. United States, 590 F. Supp. 1273, 1280 (Ct. Int'l Trade 1984). See also Calabrian Corp. v. United States, 794 F. Supp. 377, 387 & 388 (Ct. Int'l Trade 1992), citing H.R. Rep. No. 1156, 98th Cong., 2d Sess. 174 (1984).

¹³² 19 U.S.C. § 1677(7)(F)(ii). While the language referring to imports being imminent (instead of “actual injury” being imminent and the threat being “real”) is a change from the prior provision, the SAA indicates the “new language is fully consistent with the Commission's practice, the existing statutory language, and judicial precedent interpreting the statute.” SAA at 184.

¹³³ The statutory factors have been amended to track more closely the language concerning threat of material injury determinations in the Antidumping and Subsidies Agreements, although “[n]o substantive change in Commission threat analysis is required.” SAA at 185.

¹³⁴ 19 U.S.C. § 1677(7)(F)(I). Factor I regarding consideration of the nature of the subsidies is inapplicable because there have not been any subsidies alleged. Factor VII regarding raw and processed agriculture products is also inapplicable to the products at issue. See 19 U.S.C. § 1677(7)(F)(iii)(I).

¹³⁵ Table VII-1, CR at VII-2, PR at VII-1. See also CR at IV-5 n.9, PR at IV-2 n.9 (no capacity to produce high-beryllium alloys). The lack of production was confirmed by ***. According to that official, the beryllium metal section of the plant was not in operation. CR at VII-3, PR at VII-1-2.

hydroxide which is the feed to produce subject products.¹³⁶ There appears to be no likelihood that the sole producer in Kazakhstan will restart production of beryllium metal or high-beryllium alloys in the near future.¹³⁷ The company reportedly has begun ***.¹³⁸ We therefore do not find any existing unused capacity or imminent, substantial increase in production capacity in the exporting country indicating the likelihood of substantially increased imports of the subject merchandise into the United States.

Based on the rate of increase of the volume and market penetration of imports of the subject merchandise during the period of investigation, it is possible that subject imports will continue to increase in the future; however, we do not find evidence that any increase would be substantial, particularly in light of the differentiation between subject imports and the domestic like product. Any increase in subject imports would have to be a result of sales out of inventories of beryllium metal in Kazakhstan, or of beryllium metal produced in Kazakhstan but currently held in inventory in Sweden or other countries, since there is no longer any production or capacity to produce beryllium metal (or high-beryllium alloys) in Kazakhstan. In this regard, we have taken into account the considerable volume of inventories in Kazakhstan and Sweden which amounted to *** pounds in 1995 and in interim 1996.¹³⁹

The record as a whole does not support a finding that the inventories of Kazakstani beryllium are imminently poised to deluge the U.S. market, given the lack of applications for those products in the U.S. marketplace. Those large inventories have been maintained since prior to the beginning of the period of investigation, and there is no indication that this will change in the immediate future. Most of the demand for subject imports will likely continue to be for the production of Nuclear Metals' investment castings.¹⁴⁰ We do not find that increases in imports to serve this new and emerging application will cause material injury to the domestic industry where the domestic product is not considered a viable alternative by the sole producer of investment castings. Moreover, if an order were issued, subject imports would continue to enter the U.S. market without displacing sales of petitioner's products, given the lack of competition.¹⁴¹

We also find it unlikely that inventories of subject beryllium from Kazakhstan will be directed to the U.S. market to replace the domestic like product in its traditional applications.¹⁴² As discussed in our present material injury analysis, many of petitioner's traditional customers require pedigreed, high-quality beryllium that has been tested and qualified. While petitioner has argued that imported beryllium metal from Kazakhstan could be tested and qualified to meet the same applications, this does not appear to be occurring because of the time and cost involved.¹⁴³ Even where the Kazakstani material has pedigree, it does not appear to be

¹³⁶ CR at I-12 & n.34, PR at I-8 & n.34.

¹³⁷ Ulba estimates that it would take 1½ years and an investment of *** to restart production of the subject products, and it has ***. CR at VII-3, PR at VII-1.

¹³⁸ CR at VII-3, PR at VII-1.

¹³⁹ Table VII-1, CR at VII-2, PR at VII-1.

¹⁴⁰ Imported beryllium metal from Kazakhstan in interim 1996 consisted ***. Table IV-1, CR at IV-4, PR at IV-2.

¹⁴¹ For the reasons indicated in footnote 107, *supra*, we do not believe that a dumping order would cause Nuclear Metals to purchase the expensive, high-quality, pedigreed U.S. beryllium metal.

¹⁴² There are some other markets besides the United States for this inventory, and shipments to those markets are projected to increase in 1997 over 1996 levels. Table VII-1, CR at VII-2, PR at VII-1. In addition, Ulba ***. CR at VII-3, PR at VII-2.

¹⁴³ Hearing Tr. at 29. According to petitioner, defense/aerospace users, petitioner's primary market, often require vendors and their materials to be qualified. The cost of qualification for large customers could be in excess of \$50,000 and take over a year. CR at II-6 n.7, PR at II-3-4 n.7. In this regard, we note that ***. CR at V-12 n.7, PR at V-5 n.7. Similarly, as discussed previously, ***. CR at V-12, PR at V-5. In 1995, ***. CR at V-12, PR at V-5. While Lockheed Martin is considering replacing Brush Wellman's material with finished investment castings, such a substitution is merely speculative at this point. Hearing Tr. at 159-160; CR at V-13, PR at V-5. In any event, any lost
(continued...)

suitable for the same applications as the domestic like product and still may need to undergo further testing and qualification.¹⁴⁴

With respect to importers' U.S. inventories of beryllium metal, we note that these consist entirely of nonpedigreed block/blank.¹⁴⁵ For the reasons discussed above, these products are not suitable for most applications and, therefore, do not compete with the domestic like product.¹⁴⁶

In our present injury analysis, we found no evidence that the subject imports are having significant effects on prices for the domestic like product. The available price comparisons did not represent significant underselling due to the small commercial sales quantities of the domestic like product that could be said to compete with the subject imports. We find no basis for concluding that such price effects are likely to occur in the imminent future if an order is not issued. Accordingly, we do not find that imports of the subject merchandise are entering at prices that are likely to have a significant depressing or suppressing effect on domestic prices or are likely to increase demand for further imports.

There is a theoretical potential for Ulba to shift production away from its production of non-subject *** to the production of high-beryllium alloys, since the same equipment can be used to produce both types of alloys.¹⁴⁷ There is no evidence in the record, however, to suggest that this is likely to occur. We further find that any actual or potential negative effects on the existing development and production efforts of the domestic industry is due primarily to a decline in demand for the industry's traditional sales of beryllium, not due to subject imports. While research and development expenditures have declined since 1994, they still represented *** of Brush Wellman's total corporate research and development expenditures.¹⁴⁸ Finally, we find no other demonstrable adverse trends that indicate the probability that there is likely to be material injury by reason of imports of the subject merchandise.

Based on the limited applications where the domestic like product and subject imports compete, the lack of evidence that subject imports will increase substantially in the foreseeable future, and the lack of significant price effects, we determine that imports of beryllium metal and high-beryllium alloys from Kazakhstan do not threaten the U.S. industry with material injury.

CONCLUSION

For the foregoing reasons, we determine that the domestic industry producing beryllium metal and high-beryllium alloys is not materially injured or threatened with material injury by reason of LTFV imports from Kazakhstan.

¹⁴³ (...continued)

sales that would result from this substitution would not be by reason of subject imports, but rather by reason of downstream competition of the finished beryllium parts. The finished investment cast parts are formed by a different process and technology than parts made of Brush Wellman's subject beryllium products. ***. CR at V-13, PR at V-5.

¹⁴⁴ CR at IV-1 n.1, PR at IV-1 n.1. In this regard, we note that one importer could ***. CR at IV-1 n.2, PR at IV-1 n.2.

¹⁴⁵ Importers' U.S. inventories amounted to *** pounds in 1995 and *** pounds in interim 1996. Table VII-2, CR at VII-8, PR at VII-3.

¹⁴⁶ Additionally, petitioner claimed that one purchaser, ***. CR at V-10 n.5, PR at V-5 n.5.

¹⁴⁷ CR at VII-3, PR at VII-2.

¹⁴⁸ CR at VI-12, PR at VI-3. As noted above, since investment castings are not included in the domestic like product, we do not consider the effects of petitioner to develop investment castings as an appropriate consideration under the meaning of the statute.

DISSENTING VIEWS OF CHAIRMAN MARCIA E. MILLER

In a final antidumping investigation, the Commission is required to make a determination of whether an industry in the United States is materially injured or threatened with material injury by reason of LTFV imports.¹ In making this determination, the statute directs us to consider the volume of the imports that are the subject of the investigation, the effect those imports have on domestic prices, and the impact of those imports on the domestic industry. We may also consider such other economic factors as are relevant to the determination.²

While I concur with my colleagues in the majority in their description of domestic like product, domestic industry, and the condition of the domestic industry, for the reasons discussed below, I dissent by finding that the domestic beryllium metal and high-beryllium alloys industry is materially injured by reason of imports of the subject merchandise from Kazakhstan that the Department of Commerce has found to be sold in the United States at LTFV.

Volume of Subject Imports

In this investigation two issues arise regarding the volume of subject imports. The first issue involves imports of beryllium metal from *** allegedly produced in Kazakhstan. The second issue involves certain imports of beryllium metal alleged to be scrap but that were imported and sold in a form subject to the scope of the investigation as defined by Commerce.

While the Commission in most instances will have guidance from Commerce regarding the import shipments Commerce includes in its calculation of the margin of dumping,³ in this case Commerce ***. Petitioner alleges that imports from *** were produced in Kazakhstan, and requests that the Commission include data on imports from *** in its analysis of the volume of subject imports.⁴ Respondents argue that there is lack of evidence to attribute such imports to Kazakhstan, and that upon dissolution of the Soviet Union, each former Soviet Republic obtained title to any merchandise within its borders.⁵ However, there is no known production of the subject beryllium in ***,⁶ and the *** the imports as being produced in Kazakhstan.⁷ Thus, I find that the record in this investigation supports including beryllium metal from *** in the subject import volume.

The second issue to be decided is whether certain imports which lack certification of chemistry (“pedigree”) and are considered by respondents to be scrap should be included in the Commission’s subject import volume. The Commission is required to consider all imports “with respect to which the administering authority has made an affirmative determination.”⁸ Despite respondents’ arguments that specific imports of scrap are not subject to investigation,⁹ all imports of beryllium that are within the scope are subject to

¹ 19 U.S.C. § 1673d(b).

² 19 U.S.C. § 1677(7)(B).

³ See, e.g., Sulfur Dyes from India, Inv. No. 731-TA-550 (Final), USITC Pub. 2619 at 16 n.62 (Apr. 1993) (“In calculating the volume of imports from India, we included imports of subject sulfur dyes found by Commerce to be transshipped from India through Europe.”).

⁴ Petitioner’s Posthearing Brief at 8.

⁵ Respondents’ Prehearing Brief, Ex. 1, at 3-5.

⁶ In its final determination, Commerce stated that the United States and Kazakhstan are the only known producers of subject beryllium. Beryllium from the Republic of Kazakhstan, 62 Fed. Reg. 2648, 2651 (Jan. 17, 1997).

⁷ CR at I-3, n.6., PR at I-2, n.6.

⁸ 19 U.S.C. § 1673d(b)(1).

⁹ Respondents’ Prehearing Brief, Ex. 1 at 1.

Commerce's final determination and must be considered by the Commission. The scope definition does not exclude any imports based on lack of pedigree, thus the quantity of imports in question that have been identified as being in a form set forth in the scope¹⁰ are rightly included in the volume of subject imports under consideration by the Commission.

Having determined to include these imports in the total volume of subject imports under consideration, I take note of the following with regard to import volume. The volume of imports of beryllium metal from Kazakhstan increased dramatically during the period of investigation, from *** pounds of contained beryllium in 1993 to *** pounds in 1995. Subject imports in the interim periods (January - September) declined considerably from *** in interim 1995 compared with *** pounds in interim 1996.¹¹ The imports from Kazakhstan captured a sharply increased share of the domestic market in 1995, *** percent, compared with earlier periods, *** percent in 1993 and *** percent in 1994. Despite the drop in subject imports in interim 1996,¹² Kazakstani beryllium continued to account for an important share of the domestic market, *** percent, when compared with the earlier part of the investigation period.¹³

Based on these data, I find that the volume of subject imports, and the increases in that volume, are significant.

Price Effects

Analysis and comparison of prices is difficult in this investigation because of the nature of sales in the market for these beryllium products. Prices for beryllium metal and high-beryllium alloys are generally negotiated on an individual transaction basis, and many customers purchase beryllium metal and high-beryllium alloys on an infrequent basis.¹⁴ Nevertheless, I find that the domestic beryllium metal products and subject imports have competed on a price basis, and that due to the substantially lower prices for the imports from Kazakhstan, petitioner's prices have been suppressed and Brush Wellman has lost sales and revenues.

Sales of beryllium metal ingot and ingot lump by the domestic industry, examined on a unit-value basis, show declining unit values for several individual customers between 1993 and 1995, followed by no purchases in interim 1996.¹⁵ With respect to beryllium blocks and blanks, *** companies that purchased from Brush Wellman in 1993 and 1994 shifted at least a portion of their purchases to the imported Kazakstani product in 1995 and 1996, at prices *** Brush Wellman's prices.¹⁶ Also, purchases by these customers of domestic beryllium blocks and blanks were generally at prices that *** over the period.¹⁷ Thus, when the prices for individual customer purchases are considered over the investigation period, there is a generally declining trend in the price paid by a number of Brush Wellman's customers -- this at a time when the lower priced imports were competing with the Brush Wellman product in the market.¹⁸

¹⁰ The Commission staff identified certain imports by Spindrift as being in a form subject to the scope of investigation established by Commerce, *i.e.*, ingot, ingot lump, and blanks/blocks. CR at I-3, n.5, PR at I-2, n.5.

¹¹ Table IV-1, CR at IV-4, PR at IV-2. It is notable that all imports during interim 1996 were of *** ingot, argued by respondents not to be subject to investigation.

¹² 19 U.S.C. § 1677(7)(i). (The Commission may reduce weight accorded to data after the filing of the petition.)

¹³ Table IV-3, CR at IV-9, PR at IV-3.

¹⁴ CR at V-3, PR at V-1.

¹⁵ ***. Staff Memorandum INV-U-007, Feb. 11, 1997.

¹⁶ Staff Memorandum INV-U-007, Feb. 11, 1997.

¹⁷ For example, ***. Staff Memorandum INV-U-007, Feb. 11, 1997.

¹⁸ In addition to prices shown in Table V-1, CR at V-5, PR at V-3, *** also reported prices for its sales of Kazakstani beryllium metal ingot and ingot lump in 1995, and for sales of ***. Some of these sales fall into product categories 1, 2, and 3, and while head-to-head comparisons are not possible, ***. CR at V-7, PR at V-4.

I have also considered the allegations of lost sales and lost revenues presented by the petitioner. Despite differences in the domestic and imported beryllium products that may limit the ability of some customers to substitute the products, I find that these allegations support the position that the domestic and imported products do compete in the domestic market. In response to the lower prices of the imported material, Brush Wellman has reduced its prices in a number of instances in order to maintain customers. Furthermore, there is evidence of sales lost to some customers that had been purchasing from Brush Wellman on a consistent basis.¹⁹

For these reasons, I find that the LTFV imports from Kazakhstan depressed prices for the domestic beryllium metal and high beryllium alloy products and caused the industry to lose sales and revenues.

Impact on the Domestic Industry

Together, the volume and market share of the subject imports and the low prices at which they have been present in the domestic market have had an adverse impact on the domestic industry producing beryllium metal and high-beryllium alloys. The record demonstrates that Brush Wellman operated throughout the investigation period at low rates of capacity utilization. Domestic shipments decreased from 1994 to 1995 and were accompanied by declining unit values. Although domestic shipments were higher in interim 1996 compared with interim 1995, this was undercut by the continued decrease in unit values which had fallen from 1994 to 1995, and again in interim 1996, the periods when the subject imports were present in the market in significant quantities. Financially, Brush Wellman's performance was characterized by declining sales revenue, increasing unit cost of goods sold, and *** operating losses. These factors forced the industry to curtail research and development efforts, at a time when such investment was important to develop new markets and uses for petitioner's beryllium metal and high-beryllium alloy products.

The adverse impact of the subject imports can be seen in their effect on market share of the domestic industry. Despite a more than *** percent increase in U.S. consumption from 1994 to 1995, the domestic industry experienced a loss in market share, from holding *** market in 1994 to only a *** percent share in 1995. Imports of the subject product from Kazakhstan accounted for all of the market share lost by the domestic industry. The domestic industry also faced depressed prices and lost sales and revenues due to competition from the lower-priced subject imports.

Conclusion

In light of the significant and increasing volumes of subject imports, their adverse price effects, and their adverse impact on the domestic industry's financial condition and market share, I find that the domestic industry is materially injured by reason of LTFV imports of beryllium metal and high-beryllium alloys from Kazakhstan. Accordingly, I dissent.

¹⁹ For example, although NMI argues that it switched its beryllium metal purchases from Brush Wellman to Kazakstani material because of dissatisfaction with Brush Wellman's product and service, there is conflicting evidence from the two parties (Brush Wellman and NMI) about the characterization of the level of satisfaction in the past. The record also indicates that Brush Wellman has lost revenue due to its customers using the price of the Kazakstani material as a basis for negotiation. Staff Memorandum INV-U-007, Feb. 11, 1997, at 2 n.6 and petitioner's posthearing brief at app. 6.

PART I: INTRODUCTION

BACKGROUND

This investigation results from a petition filed by Brush Wellman Inc., Cleveland, OH, alleging that an industry in the United States is materially injured and threatened with material injury by reason of imports at less than fair value (LTFV) of beryllium metal and high-beryllium alloys¹ from Kazakhstan. Information relating to the background of the investigation is presented in table I-1.²

Table I-1

Beryllium metal and high-beryllium alloys: Information relating to the background of the investigation

Date	Action	<i>Federal Register--</i>	
		Citation	Date
Mar. 14, 1996 . .	Petition filed with Commerce and the Commission; institution of Commission investigation	61 F.R. 13213	Mar. 26, 1996
Apr. 3, 1996 ¹ . . .	Commerce's notice of initiation	61 F.R. 15770	Apr. 9, 1996
May 8, 1996	Commission's preliminary determination	61 F.R. 24509	May 15, 1996
Aug. 21, 1996 ¹ . .	Commerce's preliminary determination and notice of postponement of final determination	61 F.R. 44293	Aug. 28, 1996
Sept. 13, 1996 . .	Commission's notice of scheduling of final phase of investigation	61 F.R. 49341	Sept. 19, 1996
Jan. 15, 1997 ² . .	Commerce's final determination	62 F.R. 2648	Jan. 17, 1997
Jan. 22, 1997 . . .	Commission's hearing ³	<u>4/</u>	<u>4/</u>
Feb. 14, 1997 . . .	Commission's vote	<u>5/</u>	<u>5/</u>
Feb. 24, 1997 . . .	Commission's final determination transmitted to Commerce	<u>6/</u>	<u>6/</u>

¹ Date notice was signed; however, effective date is date published in the *Federal Register*.

² Date the Commission received notification from Commerce.

³ A list of the witnesses appearing at the hearing appears in app. B.

⁴ Notice of the Commission's hearing was given in the notice scheduling the final investigation.

⁵ Not applicable.

⁶ Not known at time of publication.

Source: Compiled by the staff of the U.S. International Trade Commission.

¹ For purposes of this investigation, the subject products are beryllium metal and high-beryllium alloys with a beryllium content equal to or greater than 30 percent by weight, whether in ingot, billet, powder, block, lump, chunk, blank, or other semifinished form. These are intermediate or semifinished products that require further machining, casting, and/or fabricating into sheet, extrusions, forgings, or other shapes in order to meet the specifications of the end user. Beryllium metal and high-beryllium alloys in which beryllium predominates over all other metals are provided for in subheading 8112.11.60 of the Harmonized Tariff Schedules of the United States (HTS); certain beryllium metal and high-beryllium alloys are entered under subheading 8112.11.30 of the HTS as waste and scrap. High-beryllium alloys in which beryllium does not predominate are provided for elsewhere in the HTS; e.g., high-beryllium alloys in which aluminum predominates are provided for in HTS subheading 7601.20.90. Although the HTS subheadings are provided for convenience and Customs purposes, the written description of the scope of this investigation is dispositive.

² The Commission's *Federal Register* notice of the scheduling of the final phase of the investigation and Commerce's *Federal Register* notice of its dumping determination are presented in app. A.

ORGANIZATION OF THIS REPORT AND SUMMARY OF DATA PRESENTED

This report is divided into seven parts, plus appendices. Part I contains information on the background of this investigation, the organization of the report, the nature and extent of sales at LTFV, general information on market participants, and information on the products covered in the investigation. Part II discusses conditions of competition in the U.S. market. Part III discusses U.S. producers and the condition of the U.S. industry, and presents data on basic indicators such as production, shipments, inventories, and employment, but not financial operations or pricing. Part IV discusses U.S. importers, U.S. imports, apparent U.S. consumption, and market shares. Part V discusses pricing and related data and part VI discusses the financial experience of U.S. producers. Part VII discusses considerations relating to any threat of material injury to the U.S. industry.

Data on the condition of the U.S. industry appearing in parts III, V, and VI are for Brush Wellman, the only domestic producer of beryllium metal and high-beryllium alloys in the semifinished shapes included within the scope of the investigation, which is the industry producing the "domestic like product" found by the Commission in the preliminary phase of this investigation.³ Data on the imported product presented in parts IV and VII are for all subject forms of beryllium metal imported from Kazakhstan,⁴ whether or not having a pedigree,⁵ and nonpedigreed beryllium metal ingot imported from *** but believed to have originated in Kazakhstan;⁶ all of these comprise the imported product counted as "subject" by the Commission in the preliminary phase of this investigation.⁷ Summaries of the trade and financial data collected in this

³ Nuclear Metals, Inc., which opposes the petition, argued that it should be part of the domestic high-beryllium alloy industry. Nuclear Metals produces molten high-beryllium-aluminum alloy which is poured into molds to make intricate castings requiring substantially less machining than the semifinished products produced by Brush Wellman. In its opinion in the preliminary phase of the investigation, the Commission stated that in any final phase of the investigation it would seek the parties' input on whether or not to include downstream precision castings, or whether to include the upstream molten form used to produce the downstream casting. (See Views of the Commission, *Beryllium Metal and High-Beryllium Alloys from Kazakhstan*, USITC Pub. 2959, May 1996, (hereinafter referred to as *Views*), p. 6, n. 27 and p. 8, n. 37.) Additionally, Nuclear Metals ***. (Staff notes of field trip to Nuclear Metals, Dec. 18, 1996.)

⁴ There have been no high-beryllium alloys from Kazakhstan imported in commercial quantities, although a sample weighing about 1/4 pound was imported for testing purposes.

⁵ For the purposes of this report, imported ingots and ingot lump having a "pedigree" means that they are accompanied by documentation certifying a particular chemical composition, and imported blocks/blanks having a "pedigree" means that certain physical properties are certified to in addition to the chemical composition. Pedigreed imports, comprising ingot lump and a small quantity of block, were made by Beryllium Materials International. In January 1995, The Spindrift Group, Ltd., imported *** pounds of beryllium metal product from Kazakhstan. Both the Kazakstani producer and the importer describe the beryllium metal as "scrap." However, Commission staff have identified over *** pounds of this material as being in subject product form (e.g., ingot, ingot lump, block, or blank form) and hereinafter refer to "nonpedigreed" (i.e., not accompanied by documentation certifying chemical/physical properties) ingot and block/blank imports from Kazakhstan. Brush Wellman contends that although much of the Spindrift imports were indeed scrap outside the scope of the petition (e.g., machined parts and machine chips), those imports in the intermediate and semifinished forms (e.g., ingot/ingot lump and block/blanks) are part of the subject product and are being offered to and accepted by Brush Wellman's customers. Respondents argue that this material is nonpedigreed, was sold and bought as "scrap," and should not be considered part of the subject imports.

⁶ *** is an importer of scrap metals including scrapped beryllium machined finished parts from ***. (Conversation with ***, Jan. 31, 1997.)

⁷ In its opinion finding a reasonable indication of material injury by reason of allegedly LTFV imports, the Commission remarked that "we expect that Commerce will have provided more guidance on which imports of 'scrap' are subject to investigation." (See *Views*, p. 14, n. 78.) Commissioner Bragg, who did not join in the injury determination and instead found a reasonable indication of threat of material injury by reason of allegedly LTFV imports of beryllium

(continued...)

investigation are presented in appendix C. Alternative consumption data are presented in appendix D.⁸ There have been no previous Commission investigations on beryllium.⁹

THE NATURE AND EXTENT OF SALES AT LTFV

On January 15, 1996, Commerce notified the Commission of its final determination that beryllium metal and high-beryllium alloys from Kazakstan are being, or are likely to be, sold in the United States at LTFV. The final weighted-average dumping margin was 16.56 percent ad valorem.¹⁰ Commerce subsequently notified the Commission staff that it has revised its dumping margin to 16.49 percent to reflect the correction of two ministerial errors.¹¹

TARIFF RATES

Beryllium metal and alloys in which beryllium predominates, by weight, in subject product forms are provided for in HTS chapter 81, subheading 8112.11.60, with a most-favored-nation (MFN) duty rate of 8.5 percent *ad valorem*; the MFN rate of duty applied to imports from Kazakstan after it lost eligibility for duty-free treatment under the Generalized System of Preferences effective July 1, 1995. Certain beryllium metal and alloys in which beryllium predominates are imported as waste and scrap under HTS subheading 8112.11.30, with an MFN duty of free. High-beryllium alloys in which beryllium does not predominate by weight are provided for elsewhere in the HTS; e.g., high-beryllium alloys in which aluminum predominates are provided for in HTS chapter 76, subheading 7601.20.90, with an MFN duty rate of free.

MARKET PARTICIPANTS

Brush Wellman is the only U.S. producer of the subject beryllium metal products considered by the Commission in its preliminary determination. In addition to Brush Wellman, a second firm, Nuclear Metals,

⁷ (...continued)

metal, considered only the pedigreed beryllium metal imported from Kazakstan to be subject, although she indicated that she would seek clarification of subject imports in any final investigation. (See Additional Views of Commissioner Lynn M. Bragg, *Beryllium Metal and High-Beryllium Alloys from Kazakhstan*, USITC Pub. 2959, May 1996, p. 22, n. 6.) Commerce's period of investigation is July-December 1995, so ***. Commerce also ***. ***. (Telephone conversation with ***, Department of Commerce, Jan. 28, 1997.)

⁸ The alternative scenario excludes all nonpedigreed beryllium metal imports. Additionally, app. D contains consumption tables based on all beryllium instead of just subject beryllium metal and high-beryllium alloys (see apparent consumption section in part IV for a discussion regarding consideration of all beryllium instead of subject products), and consumption tables based on Brush Wellman's domestic commercial shipments.

⁹ ***. (Staff conversations with ***, Aug. 28, 1996, and Jan. 29, 1997.)

¹⁰ Commerce's final dumping margin was based on a comparison of export price to normal value. Export price was based on packed, c.i.f. U.S. port prices to unaffiliated purchasers in the United States. Normal value was calculated by applying values, principally from Peru, to the Kazakstani producer's factors of production. Peru was chosen as the primary "surrogate country" for data purposes. The period of Commerce's investigation was July 1, 1995, through Dec. 31, 1995. Commerce's notice of final determination of sales at LTFV, as published in the *Federal Register*, is presented in app. A.

¹¹ Internal Commerce memorandum to ***, Jan. 30, 1997. Notice of the new dumping margin will be published in the *Federal Register* along with the dumping order if the Commission finds in the affirmative.

Inc., Concord, MA, reported in the final phase of this investigation that it produces ***.¹² Both Brush Wellman and Nuclear Metals produce high-beryllium alloy castings, which were not considered part of the domestic like product during the preliminary phase.¹³

Beryllium Materials International, L.C. (BMI) in Tampa, FL, is the only domestic firm that imported pedigreed beryllium metal from Kazakstan during the subject period. BMI is a joint venture between Loral American Beryllium, Inc., First Concord Materials, Inc., and the Ulba Metallurgical plant located in Ust-Kamenogorsk, Kazakstan. In the start-up phases of the joint venture, ***. The Spindrift Group, Ltd., imported nonpedigreed beryllium metal from Kazakstan in 1995, ***, and in 1997 ***.¹⁴

THE PRODUCT

The imported products subject to this investigation are beryllium metal and high-beryllium alloys with a beryllium content equal to or greater than 30 percent by weight, whether in ingot, billet, powder, block, lump, chunk, blank, or other semifinished form.¹⁵ These are intermediate or semifinished products that require further machining, casting, and/or fabricating into sheet, extrusions, forgings, or other shapes to meet the specifications of the end user. Excluded from the scope of this investigation are, e.g., beryllium ore, beryllium hydroxide, and low-beryllium alloys; low-beryllium alloys are defined by the petitioner as alloys containing less than 30 percent beryllium (the most common are beryllium-copper alloys, which usually contain 2 percent or less beryllium).¹⁶ This section of the report presents information related to the Commission's "domestic like product" determination,¹⁷ as well as information on both imported and domestically produced products.

In its views in the preliminary phase of the investigation, the Commission found one domestic like product, as proposed by the petitioner:¹⁸ all beryllium metal and high-beryllium alloys containing over 30 percent beryllium by weight (including beryllium/beryllium oxide composites),¹⁹ whether in ingot, billet,

¹² Nuclear Metals produces ***. Thus, data on high-beryllium alloys in subject product form presented in this report are for Brush Wellman only. During the subject period, Nuclear Metals had the capability to make *** pounds of beryllium powder per year; ***, and the powder equipment is in the process of being decommissioned. (Letter from Nuclear Metals, Jan. 30, 1997, and conversation with ***, Nuclear Metals, Jan. 31, 1997.)

¹³ Data on high-beryllium alloy castings are presented in app. E.

¹⁴ ***. (Conversation with ***, Feb. 3, 1997.)

¹⁵ Henceforth, all composition percentages refer to weight percentages, unless otherwise indicated.

¹⁶ The HTS classifies alloys according to the weight percent of the predominant metal; therefore, an alloy where beryllium predominates by weight would be a beryllium alloy, and an alloy where aluminum or copper predominates by weight would be an aluminum or copper alloy, respectively. In this investigation, all alloys containing beryllium, regardless of the proportion of beryllium, are referred to as beryllium-aluminum, beryllium-copper, etc., as appropriate.

¹⁷ The Commission's decision regarding the appropriate domestic products that are "like" the subject imported products is based on a number of factors including (1) physical characteristics and uses; (2) interchangeability; (3) channels of distribution; (4) customer and producer perceptions; (5) common manufacturing facilities and production employees; and, where appropriate, (6) price.

¹⁸ Petition, pp. 27-32.

¹⁹ The petition had identified two types of high-beryllium alloys: high-beryllium-aluminum alloys and a high-beryllium/beryllium oxide material.

powder, block, lump, chunk, blank, or other semifinished form. The Commission did not include more advanced forms such as castings in the domestic like product in its preliminary views.^{20 21 22}

U.S. 1996 beryllium consumption in all of its end uses is estimated at 220 metric tons, with 75 percent used in low-beryllium alloys (principally beryllium-copper alloys), 15 percent used in beryllium metal and high-beryllium alloys, and 10 percent used in ceramic materials.²³

Physical Characteristics and Uses

General

Beryllium is an extremely lightweight, nonferrous metal with a density approximately 70 percent that of aluminum and 25 percent that of carbon steel. It has a high strength-to-weight ratio, a high resistance to deformity (also referred to as stiffness), the highest heat-absorbing capacity of any metal, the best heat conduction of any structural metal, and the ability to maintain its desirable properties at high operating temperatures. Beryllium also reflects neutrons and is transparent to X-rays.

Beryllium's principal disadvantage is its cost. Beryllium metal can cost hundreds of dollars per pound (compared with, for example, aluminum that costs approximately \$0.70 per pound, and carbon steel that costs approximately \$0.20 per pound), and worldwide consumption in all of its end uses is no more than 300 metric tons per year.²⁴ Beryllium applications are confined to a wide range of specialty areas where its properties provide crucial benefits not available with less-expensive alternative materials. Beryllium is used in a pure or near-pure state or in alloys where even a low beryllium content results in a significant improvement in properties, as compared with the other metal.²⁵

The principal reason for alloying beryllium metal is to create a less expensive material. However, a trade-off is involved--the properties of the high-beryllium alloys are degraded as compared with pure beryllium metal. For some applications, such as optical, nuclear, and X-ray uses, the alloy properties are degraded to such an extent that the alloys cannot be used in place of beryllium metal.

High-beryllium alloys are heavier, are not as stiff, and have less desirable heat absorption and conduction properties than beryllium metal. However, high-beryllium-aluminum alloys are castable and are easier to machine (see the section of this report entitled "Manufacturing Process").

²⁰ See Views, p. 8.

²¹ High-beryllium alloy precision castings (also known as "investment castings"), are a further-processed form of beryllium products that are ready, except for minor machining in most cases, for end use and are produced by Nuclear Metals, Inc., by co-melting beryllium and aluminum. Brush Wellman also produces similar further-processed, downstream investment-cast products, but has not sold such products on a commercial basis. The Commission indicated that in any final phase of the investigation it would seek parties' input on whether to include investment castings in the domestic like product. See Views, p. 8, n. 37.

²² Former Chairman Watson and Commissioner Crawford noted that the Commission did not include in the like product the molten form of the beryllium aluminum alloy that is created during Nuclear Metals' process in producing precision or investment castings, but welcomed parties' arguments concerning this in any final phase of the investigation. Views, p. 6, n. 27. A question also arose as to whether beryllium metal in residual block form is used in the production of high-beryllium alloys and whether it should be included as an upstream product in a semifinished/finished domestic like product analysis. Views, p. 7, n. 29.

²³ Preliminary figures from U.S. Geological Survey, 1997 Mineral Commodity Summary, and estimate provided by Deborah Kramer, U.S. Geological Survey.

²⁴ Consumption estimate provided by Deborah Kramer, beryllium commodity specialist, U.S. Geological Survey.

²⁵ A copper alloy with 1 percent beryllium has twice the strength of pure copper.

The production of subject products begins with the mining of beryllium ore, which contains 0.25-4 percent beryllium. The first commercial product downstream from the ore is beryllium hydroxide, which is a chemical compound made by the physical and chemical treating of beryllium ore. Beryllium hydroxide contains approximately 21 percent beryllium. The subject products require downstream processing, such as machining, wrought processing, etc., before they are formed into a part ready for use. Castings are downstream products that are formed from molten high-beryllium alloys directly (this cannot be done with beryllium metal), and are very close in shape to the dimensions of a part. See the "Manufacturing Process" section for more information.

Beryllium has one other disadvantage--beryllium-containing dust can cause berylliosis, a disabling or fatal lung disease, as well as other health problems.²⁶ Any manufacturing or fabrication operation (such as machining) that creates beryllium dust puts certain workers at risk (the 1-to-5 percent of individuals whose immune systems are susceptible to beryllium), and special ventilation and preventative measures are required to protect workers from the disease. There is no danger from finished beryllium-containing products. Both the Environmental Protection Agency and the Occupational Safety and Health Administration have regulations regarding beryllium dust exposure, and significant expense is required to adhere to these regulations.²⁷

Uses

Beryllium metal is used primarily in defense and aerospace applications, where it has structural (i.e., load bearing), optical, and electronic uses. These include satellite frame members and structures; rocket nozzles; gyroscopes and frame members in navigation and weapons-control assemblies; electronic packaging (the boxes and racks that house and hold electronic components); and mirrors for data communication systems and high-powered lasers. Beryllium metal is also used in research fission and fusion nuclear reactors (but not in commercial nuclear reactors) and in nuclear bomb triggers. The main nondefense/nonaerospace use is in X-ray tubes (the tube part is made out of beryllium). Beryllium is also used in low-beryllium alloys, which are used for strong and spark-resistant electronic connectors, and in dental applications.

High-beryllium alloys, which are predominately beryllium-aluminum, are used in structural and electronic applications, navigation and weapons-control assemblies, satellite frame members, and electronic packaging. There is also some use in bicycle and golf club markets, but not in significant quantities. The applications for investment-cast high-beryllium alloys, as compared with these alloys made from powder, are similar, but more intricate parts can be made using the casting process (see "Manufacturing Process" section). The high-beryllium/beryllium oxide composite material is used as a substrate for electronic applications (a plate on which various electronic components, such as computer chips and resistors, are mounted).

Subject Products

The subject products (beryllium and high-beryllium alloys) are intermediate products between upstream impure and waste/scrap²⁸ products and downstream parts. In the standard manufacturing process, molten beryllium metal or high-beryllium alloys are cast into ingots, which are cut into lumps (also referred to

²⁶ Beryllium metal is also associated with immune system reactions in the lungs, heart, and liver, and possibly with lung cancer. "Medical Facts--Beryllium Disease," National Jewish Center for Immunology and Respiratory Medicine, Denver, CO, 1996. See also "The Dark Side of a Magical Metal," by Barry Meier, The New York Times, Aug. 25, 1996.

²⁷ U.S. Department of the Interior, Bureau of Mines, *Mineral Industry Surveys: Beryllium Annual Review--1994*, Washington, DC, May 1995, p. 1.

²⁸ Henceforth, waste and scrap will be referred to as scrap.

as chunks), and processed into powders that are then consolidated into semifinished forms called blocks and billets,²⁹ which may be cut into other semifinished forms (also called blanks). High-beryllium-aluminum alloy blocks and billets can be made by bypassing the powder-making process (see the section of this report entitled "Manufacturing Process"). Upstream products include virgin materials that are produced from mined minerals, and scrap products generated from downstream fabrication operations and recovered from used equipment.

Beryllium metal ingots are the most pure of the subject products, containing over 99 percent beryllium with trace amounts of beryllium oxide and other impurities. Ingots are cylindrically shaped, 2-3 feet in diameter, and several feet long (ingots from Kazakhstan are slightly smaller in diameter). In this form, beryllium is brittle and cannot be used directly for final products. Beryllium metal powders are fine particles that are plate-like, blocky, or spherical shaped, and have a higher beryllium oxide content (varying from 1 to 6 percent) than the ingots, and trace impurities.³⁰ Blocks and billets are chemically similar to powders, but are consolidated forms, usually in the shape of cubes, cylinders, or other simple shapes. Other semifinished shapes are cut from blocks and billets, and can be in the shape of bars, tubes, or any shape desired by the customer.³¹ These products are classified as structural grade or optical/instrument grade.

High-beryllium-aluminum alloy ingots normally contain over 40 percent beryllium by weight, trace amounts of oxide and impurities, and aluminum as the predominate balance material (other alloying metals may also be added), and are the same shape as beryllium metal ingots.³² The high-beryllium-aluminum alloy ingots are only useful in the production of powder or for remelting to produce investment castings and pigs (which are used to make wrought products). High-beryllium-aluminum alloy powders are mostly spherical-shaped particles with slightly more oxide content than the ingots. Only structural-grade high-beryllium alloy blocks and billets are produced (there is no optical/instrument grade). High-beryllium-aluminum alloy is castable, unlike beryllium metal, and is less expensive because of the presence of the cheaper alloy metal. Furthermore, it is easier to machine high-beryllium-aluminum alloy than beryllium metal.

There is a high-beryllium/beryllium oxide composite material composed of beryllium metal and beryllium oxide powders (the petitioner refers to this as "E-material"). There is no ingot form of this material. The powder mixture varies in composition, ranging from 40 to 60 percent by volume of beryllium oxide, and is used to make blocks and billets.

Manufacturing Process

Beryllium is produced from beryllium ore (the most common are beryl and bertrandite), which is mined and concentrated into beryllium hydroxide. Beryllium ore is mined in several areas of the world: the United States (Utah), Russia, China, Brazil, India, and Zimbabwe are the most notable examples.³³ However,

²⁹ Petitioner did not make a clear distinction between blocks and billets. These terms are used together in this investigation.

³⁰ The beryllium oxide in beryllium metal and high-beryllium-aluminum ingots, powder, and semifinished forms is present because some of the beryllium atoms combine with oxygen in the air as a consequence of the production process; it is not an added material as it is in the high-beryllium/beryllium oxide product.

³¹ The aforementioned shapes are produced by cutting and/or drilling whole blocks or billets, and not by an extrusion or rolling process.

³² Brush Wellman produces three main groups of high-beryllium-aluminum alloys: these contain 62-65 percent beryllium, 50 percent beryllium, or 30-35 percent beryllium the (balance of the material in all these alloys is aluminum). Nuclear Metals' alloys contain 60-70 percent beryllium and 28-35 percent aluminum.

³³ The U.S. deposits are primarily bertrandite ore, which contains less beryllium but is easier to process than beryl ore, which is the material found in the other countries. Other mine-producing countries from U.S. Geological Survey, (continued...)

currently only the United States, China, and India have the facilities for making beryllium hydroxide.³⁴ Beryllium hydroxide is the feed material used to make three types of beryllium products: beryllium metal and high-beryllium alloys, low-beryllium-copper alloys, and beryllium oxide. These products are typically made using three distinct process paths.³⁵ Figure I-1 shows the major products (including the subject products) created in each process path, shows which products are marketed, and shows where scrap is introduced in the beryllium metal and high-beryllium alloy path. Presently, the United States, China, and India are the only countries that have operating facilities for producing beryllium metal from beryllium hydroxide (for information on Kazakhstan's beryllium facilities, see the "Foreign Producer" section).³⁶ The United States and Russia are the only known countries with operating facilities for producing high-beryllium alloys (it is not known whether China and India have these facilities).

To produce beryllium metal (as shown in the column on the left in figure I-1), the first step is to dissolve the hydroxide in an ammonium bifluoride solution, forming an ammonium beryllium fluoride salt, which is solidified and decomposed in a furnace to anhydrous beryllium fluoride. Beryllium is converted from a chemical form to a metallic form by adding magnesium, which reacts with the fluoride, creating a molten mixture of magnesium fluoride and impure beryllium metal. The mixture is cooled to solid form, crushed into pebbles, and added to a solution that causes the beryllium pebbles to float to the surface. These pebbles, which are a mixture of beryllium metal and slag, are skimmed off the surface. The final step in producing beryllium metal is vacuum melting. In this stage, the beryllium pebbles are melted in a furnace and vaporized impurities are pulled from the furnace by vacuum. The molten beryllium is poured into a mold, which is also under a vacuum, and solidified into an ingot, which is at least 99 percent beryllium. A fine coat of impurities from the mold that adhere to the ingot is skimmed off using a lathe.

The vacuum-cast ingot is next broken into lumps and then converted to powder, usually by grinding or ball milling.³⁷ These processes create different shapes and sizes of powders, and a specific block or billet may be made of powders created by one of these processes, or a mixture of powders.³⁸ The powders are converted into blocks or billets by one of three consolidation processes--vacuum hot pressing, hot isostatic pressing, or pressing/sintering.³⁹ All of these processes involve adding the powder to a mold and applying pressure to the powder with punches or gas, which compacts the powder. Vacuum hot pressing is used to make the simplest of shapes; pressing and sintering to make more complex shapes. Hot isostatic pressing makes moderately complex shapes, but it also creates shapes with the most uniform properties. The requirements of the end use dictate which process will be used.

³³ (...continued)

1997 Mineral Commodity Summary.

³⁴ In its questionnaire response in the preliminary phase of the investigation, ***.

³⁵ Beryllium-copper alloys and beryllium oxide are made directly from beryllium hydroxide, which is unlike the metallurgy of many other metals where alloys and ceramic materials are produced from the metallic form. Producing beryllium-copper alloys and beryllium oxide from beryllium metal is possible, although the petitioner claims it is not as cost efficient as producing these products directly from the hydroxide. However, the petitioner consumes some beryllium metal in its low-beryllium alloy path when it has a surplus of internally generated material.

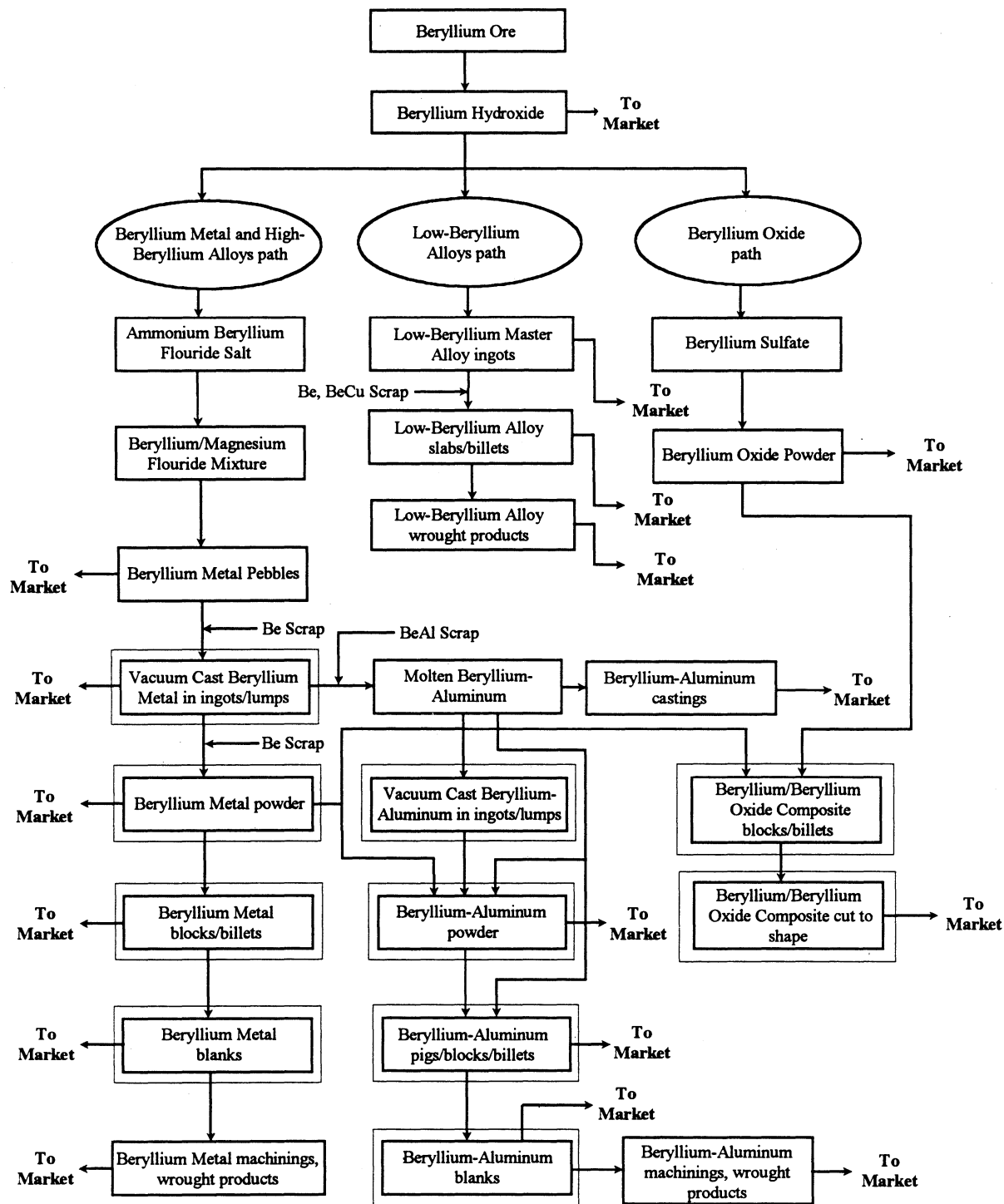
³⁶ Chinese capability from conversation with ***, Jan. 31, 1997. Indian capability from "Facility to Make Beryllium," *The Hindu*, Nov. 7, 1996.

³⁷ An atomization process may also be used to produce powder. Molten beryllium is introduced into a chamber in a rapidly moving stream of an inert gas, which breaks the beryllium into fine drops. These drops solidify as they descend down the chamber.

³⁸ Beryllium metal, unlike most other metals, cannot be formed by conventional solidification of molten metal because this results in a material that is too brittle.

³⁹ The consolidated products are solid, and to casual observation appear no different than metal products made from solidifying molten metal. There are differences in the atomic structure, however.

Figure I-1
Beryllium product flow



Note: Subject products are double-boxed. Inputs other than scrap not shown. Be scrap is beryllium scrap, BeAl scrap is beryllium-aluminum scrap, BeCu scrap is beryllium-copper scrap.

Source: U.S. Department of Commerce, Bureau of Export Administration, *National Security Assessment of the U.S. Beryllium Sector*, May 1993; and notes from Mar. 29, 1996 meeting at Brush Wellman's Elmore, Ohio plant.

The blocks and billets undergo further processing, such as machining to clean or square the shapes, and cutting to a shape based on customer requirement. A block or billet may be cut up into smaller pieces, or a cylindrical piece may be drilled out, or a tube-shaped form can be created by drilling out the center of a cylindrical piece (the cut pieces are referred to as blanks). The blocks and billets, whether in whole or as a cut shape, are then processed in downstream operations to create the final beryllium metal part. These processes include machining, in which the beryllium metal is simply ground away by a bit until final dimensions are achieved, or the beryllium metal may be formed into a wrought shape by extruding, rolling, or drawing. Also, the part may be coated, polished, etc. to complete the part-forming process.

High-beryllium-aluminum alloys are manufactured by a powder metallurgy process or a conventional process. In the powder metallurgy process the powder is usually made by atomizing molten metal. The powder can be beryllium, aluminum, or beryllium-aluminum. The powders are then mixed to obtain the desired composition and then consolidated into the shapes, e.g., blocks and billets, similar to those described for beryllium metal.⁴⁰ Alternatively, these alloys can be made using a conventional process in which a beryllium and aluminum charge (with beryllium metal in the form of chunks and/or scrap and aluminum in the form of ingots and/or scrap, or as beryllium-aluminum scrap) is melted in a vacuum furnace.⁴¹ Using this method, the powder-making step is not necessary, which also obviates the need to make blocks/billets as is necessary with beryllium metal. The molten alloys can be cast into an extrusion or rolling shape for wrought processing (i.e., shaping by mechanical means), or cast into an ingot which can be remelted and poured into a mold to make a cast part. The remelting step can be bypassed by pouring the molten metal directly into a mold. The downstream processes to make final parts are the same as described for beryllium metal.

The high-beryllium/beryllium oxide composite material is formed by combining beryllium powders and beryllium oxide powder, which is hot-isostatically pressed and cut into shapes.

The ability to cast parts from molten metal is a significant advantage for high-beryllium-aluminum alloys compared with beryllium metal, especially in the direct formation of parts.⁴² The material costs are lower because aluminum is much less expensive than beryllium. Processing costs of the alloys are also lower because they can be cast directly from molten metal into near-net-shape parts, which typically require only minor machining to make a final part. To form parts with beryllium metal, machining the final part creates excessive scrap, and often the amount of material that is removed exceeds the amount of material in the part. ***⁴³ Casting parts from molten metal allows for the formation of more complex parts. Furthermore, unlike beryllium metal, alloys (in solid form) are weldable. However, the physical properties of beryllium-aluminum parts may not be as advantageous as those of beryllium metal parts. Designing parts using beryllium metal versus using beryllium-aluminum involves a trade-off between costs and physical properties.

Investment casting is a particular casting method used to make high-precision parts (i.e., parts that have tightly controlled dimensions) from molten high-beryllium alloys. After a part is designed, a plastic, wax, or wood impression is made. This impression is coated with a ceramic material, which forms the mold. The mold is then baked to burn out the impression. Once the mold is completed, molten high-beryllium-

⁴⁰ ***.

⁴¹ The ability to keep the beryllium and aluminum mixed when the material cools to solid form is crucial in using the conventional process. The metals tend to separate when solidifying because of the large differences in melting temperatures, rendering the product useless. Nuclear Metals was able to overcome this problem by adding small amounts of other metals to the beryllium and aluminum charge.

⁴² This discussion compares making parts by casting molten beryllium-aluminum versus making parts by machining a beryllium block/billet to final shape. Parts may also be made by wrought processing, i.e., rolling and extruding, followed by punching, cutting, or other final shaping steps, in which the processing cost savings with beryllium-aluminum are reduced.

⁴³ ***.

aluminum is poured into the mold and allowed to solidify. After solidification, the mold is removed using pressurized water, leaving the high-beryllium-aluminum investment casting.

Because they can be recycled, beryllium metal scrap and high-beryllium alloy scrap are important in the manufacturing process. Scrap is generated at several places in the manufacturing cycle, and varies in quality. The best-quality scrap is generated at the facility that produces the subject products--the composition is well known and this scrap can be recycled back into the production process. Scrap is also generated at downstream operations where the subject products are formed into final shape by machining, casting, or mechanical forming. This is typically referred to as vendor scrap, and if the vendor segregates this scrap, it too can be recycled back into the production process (the producer may have a buy-back arrangement with the downstream customer). Unsegregated scrap and scrap from used equipment are typically the least valuable scrap because the composition of this material generally is not known.⁴⁴

The definition of "scrap" is a point of contention in this investigation. Nonpedigreed beryllium metal ingots, lumps, and blocks/blanks were imported from Kazakhstan by Spindrift in 1995. The petitioner argues that some of this material should be included as subject products, but counsel for Ulba argues that it is scrap and should be excluded.

Common Manufacturing Facilities and Production Employees

The subject products are produced using virtually the same equipment in the same facility using the same employees. However, alloy production requires the addition of raw materials not produced in the same facility. Aluminum is required for the beryllium-aluminum alloy, which in the petitioner's case is purchased on the open market. For the composite material, the petitioner uses beryllium oxide produced on separate equipment at the same plant site. The Kazakstani beryllium was reportedly made in virtually the same way as the petitioner's, although there was a slight difference in the production of beryllium hydroxide. After this point, the production processes were the same.

For the petitioner, ***. Nuclear Metals, the only other producer of beryllium-aluminum cast products, has a plant that produces a molten form of high-beryllium-aluminum alloy, which is cast directly into parts.

Interchangeability

Beryllium Metal Versus High-Beryllium Alloys

Commission questionnaires asked producers, importers, and purchasers whether beryllium metal and high-beryllium alloys are interchangeable. The petitioner responded that they are interchangeable in the production of numerous end products, e.g., avionics enclosures, avionics heat sinks, satellite electronic enclosures, satellite structures, and commercial automotive and robotics applications. Purchasers were asked in the Commission's questionnaire whether beryllium metal and high-beryllium alloys (in all forms) can be used in the same application. Thirteen purchasers answered "No," and one answered "Yes" (***), but that

⁴⁴ Certain used equipment, e.g., Poseidon missiles parts, have a known chemical composition and can be introduced into the production cycle for beryllium metal and high-beryllium alloys. (Staff conversation with *** of Brush Wellman, Apr. 1, 1996.) Nuclear Metals purchases scrap machined parts for use in its production process. (Staff conversation with ***, Nuclear Metals, Jan. 31, 1997.)

beryllium metal is better. Lockheed Martin has been actively evaluating high-beryllium-aluminum alloys to use in applications that had used beryllium metal in the past.⁴⁵

Regarding subject product forms, beryllium metal ingots, lumps, powder, block/billets, and blanks are not interchangeable with comparable products made of high-beryllium-aluminum alloys because of the different chemical composition requirements of the end use (e.g., it is not possible to make beryllium powder from high-beryllium-aluminum ingots). Cast high-beryllium-aluminum alloy parts are not interchangeable with subject products, which must be further processed by machining, rolling, extruding, etc. before they are a shape comparable to a cast part.⁴⁶

Domestic Beryllium Metal Versus Kazakstani Beryllium Metal for Use in Beryllium Metal Finished Parts

According to the petitioner and most purchasers, documented quality is a crucial component in the use of beryllium metal. This documentation is referred to as a pedigree, which, at a minimum, shows the beryllium metal's chemical composition and may include physical properties such as tensile strength (pedigreed material is also referred to as being certified). Ingots/lumps typically have a simple pedigree that shows only chemical composition because most other characteristics are only important in downstream products. A full pedigree is a complete record of the material, including the chemical composition, physical properties such as tensile strength, grain size, consolidation method, consolidation temperature and pressure, and any other information that indicates the material's performance.⁴⁷ Typically, blocks/billets and blanks are the only products that can have a full pedigree because of their advanced state of processing. If a full pedigree is not available, then the material's potential use is limited and it cannot be used in many defense and aerospace applications, according to both the petitioner and most purchasers. Therefore, since Kazakstani beryllium metal does not have a full pedigree it cannot be interchanged with the petitioner's material in such applications.⁴⁸ However, the petitioner claims that the majority of customers, including the defense industry, do not require a full pedigree.⁴⁹ In these cases, according to the petitioner, the Kazakstani beryllium metal is interchangeable.

Counsel for respondents report that the overwhelming preponderance of Kazakstani beryllium is in the form of ingots/lumps, which they claim are only saleable to customers for alloying.⁵⁰ Nuclear Metals

⁴⁵ At the public conference, Robert Quinn, President, Nuclear Metals, stated "what has happened over the years is that pure beryllium components are so expensive, customers like Lockheed Martin are not using them. They are being designed out of systems. They are just too expensive." (Conference transcript, p. 95). Richard Diamond, Lockheed Martin, stated that "beryllium-aluminum casting was a breakthrough technology that the Army and the Air Force and our other customers really like, but we will not use it at any cost . . . If the current Brush Wellman prices that you have shown are maintained, the cost will be unaffordable for us to use beryllium (aluminum), and we will find at Lockheed Martin alternative ways to design into our systems without using beryllium-aluminum, just as we had in the past with beryllium." (Conference transcript, pp. 97 and 99.)

⁴⁶ Petitioner's questionnaire (final), p. 5.

⁴⁷ Furthermore, the production process is subject to audit to verify that a material has a full pedigree.

⁴⁸ Respondents prehearing brief, p. 14, and posthearing brief, p. 9. There has been no indication from the petitioner or respondent that there is any Kazakstani beryllium metal with a full pedigree.

⁴⁹ Petitioner's posthearing brief, p. 32.

⁵⁰ Hearing transcript, p. 122. The respondent also noted that the Kazakstani ingot/lumps could be sold to Brush Wellman, which is the only U.S. firm with the capability to process ingot/lump into intermediate products that can be used for making beryllium metal blocks/billets.

states that ***.⁵¹ Furthermore, ***.⁵² Also, the Ulba facility reported inventories of scrap, some of which have been identified as nonpedigreed blocks, which are subject products (see part VII), and the petitioner claims that this material could have a pedigree established by laboratory testing, and would then be interchangeable with petitioner's blocks.⁵³

Domestic Beryllium Metal Versus Kazakstani Beryllium Metal for Use in Beryllium Alloys

Imported and petitioner's beryllium metal ingot lump appear to be interchangeable as a feed for producing high-beryllium-aluminum alloys. Nuclear Metals uses the Kazakstani beryllium metal lumps to produce high-beryllium-aluminum alloys. Nuclear Metals is not limited to pedigreed feed material (all of Brush Wellman's beryllium metal lumps have a known pedigree) because it can adjust its metallurgical process to set its own quality standards even when using the Kazakstani lumps or purchased scrap by first producing a master melt which is then chemically analyzed and adjusted as necessary.⁵⁴

Imports of Kazakstani beryllium metal lump also appear to be interchanged with petitioner's beryllium metal lump in the production of low-beryllium alloys. BMI has sold ***.⁵⁵

Substitutes

Most purchasers reported that there are no substitutes for beryllium metal and high-beryllium alloys. However, in some applications, possible substitutes include aluminum-lithium alloys, metal matrix composites (aluminum with silicon carbide), boron carbide composites, graphite epoxy composites, titanium, and steel.⁵⁶ For the composite material, alumina (aluminum oxide) is a substitute. Petitioner noted that beryllium metal or high-beryllium alloys are selected in a product's design phase, and substitution would likely not be possible without redesigning the product. Nuclear Metals claims that in the design stage, aluminum, aluminum silicon carbide, and magnesium are substitutes for high-beryllium-aluminum alloys.⁵⁷ Petitioner also noted that given the high cost of beryllium metal and high-beryllium alloys, these materials are only selected if absolutely necessary, so substitution of other materials is rarely an acceptable option.

Scrap is also potentially a substitute for beryllium metal ingot and lumps in certain applications; however, the quality of the scrap determines the substitutability. A representative of Nuclear Metals stated that high-quality beryllium metal scrap could be interchanged with beryllium metal ingot lumps as feed for making its alloy.⁵⁸ One U.S. producer of ***.⁵⁹

⁵¹ Staff conversation with ***.

⁵² Petitioner's questionnaire (final), p. 9A.

⁵³ Petitioner's posthearing brief, p. 7.

⁵⁴ Testimony of Robert Quinn, Nuclear Materials, Inc., conference transcript, pp. 90, 95-96, 149, 161-162. Mr. Quinn stated that ***. (Postconference brief of Nuclear Metals, p. 4.)

⁵⁵ *** stated that there are different grades of the Kazakstani beryllium metal lump. ***. (Staff conversation with ***, Oct. 30, 1996.)

⁵⁶ Petition, p. 31.

⁵⁷ Conference transcript, p. 90.

⁵⁸ Testimony of Robert Quinn, Nuclear Metals, Inc., conference transcript, pp. 161-162.

⁵⁹ Staff conversation with ***. However, ***.

Petitioner claims that some companies that use beryllium metal finished parts are ***.⁶⁰ Commission staff found that nonpedigreed Kazakstani beryllium metal blocks/billets imported by Spindrift ***.⁶¹ Two other companies used nonpedigreed Kazakstani beryllium metal blocks to produce sample finished parts or used the material to practice machining techniques.⁶²

Customer and Producer Perceptions

The petitioner perceives beryllium metal and high-beryllium alloy products as specialty products as opposed to commodity products like aluminum or copper. As compared with commodity products, there is much more attention to quality assurance and testing and maintaining a product pedigree, and there is a large investment in equipment and laboratory services to produce this pedigree. The pedigree satisfies the stringent requirements of defense and aerospace customers, who typically qualify materials used in their products based on a pedigree and often explicitly state in product design which producer should supply a specific material.

Some customers perceive that a pre-existing pedigree is unnecessary. These customers either design their beryllium products to adhere to the standards of a specific industry (such as the bicycle industry) that do not require a pedigree, or establish their own pedigree, such as Nuclear Metals can with its product.⁶³

Nuclear Metals contends that in most of the applications it is developing, high-beryllium-aluminum alloy castings are perceived by customers as a more expensive, better-performing alternative to parts made from conventional materials, and that high-beryllium-aluminum alloys displace aluminum, titanium, or other conventional materials, rather than beryllium.⁶⁴ It also contends that, to a much smaller extent, high-beryllium-aluminum alloy castings are perceived by customers as a less expensive, poorer-performing alternative to beryllium metal parts.⁶⁵

Channels of Distribution

The channels of distribution for one or more of the subject products consist of (1) the U.S. National Defense Stockpile, (2) processors, (3) fabricators, and (4) end users. The National Defense Stockpile is a U.S. Government program to store products with crucial defense-related applications to ensure an adequate supply during national emergencies. Beryllium, because of its important weapons-related uses, is currently stockpiled in the form of ore, beryllium metal in blocks, and beryllium-copper master alloys.⁶⁶ The petitioner had a contract to upgrade a portion of the stockpiled ore to metal, and its sales to the stockpile were a

⁶⁰ Notes for Mar. 29, 1996 meeting at Brush Wellman's Elmore, OH, plant, p. 5.

⁶¹ Conversation with ***.

⁶² Conversations with ***.

⁶³ Testimony of Robert Quinn (conference transcript, p. 149).

⁶⁴ Staff meeting with ***, Nuclear Metals Inc., Dec. 18, 1996.

⁶⁵ Ibid.

⁶⁶ Currently, the stockpile consists of 363 metric tons of beryllium metal, 268 metric tons of low-beryllium-copper alloy, and 545 metric tons of beryl ore (all figures on a contained beryllium basis). In the post-cold war era, the need for strategic stockpiles in the United States has been scrutinized. The Defense Logistics Agency (DLA), which administers the stockpile, currently has authority to dispose of the beryllium ore. It regularly offers the ore for sale (not for upgrade), but there have been no purchases to date. According to Peter Roman, Marketing Director of the Stockpile, Congress (which must authorize all stockpile disposal) has considered disposing of the beryllium metal in the past, but the only bill related to stockpile disposal that is currently under consideration does not authorize beryllium metal disposal. (Staff conversation with Peter Roman, Apr. 22, 1996.)

significant portion of total beryllium metal sales until this contract expired in 1994. No high-beryllium alloys or castings are in the stockpile, and there are no plans to include these materials in the stockpile.

Processors are firms that have foundry (i.e., melting) operations that use beryllium metal in ingot or lump form as a feed to make alloys. The petitioner has capacity to do this, and Nuclear Metals appears to be the only other domestic firm that produces a high-beryllium alloy. Nuclear Metals produces its high-beryllium-aluminum alloy by melting beryllium metal lumps and aluminum metal, but instead of forming the semifinished products subject to this investigation, it creates investment castings, which are near-finished, high-precision parts formed directly by pouring the molten alloy into molds.⁶⁷ These castings are machined by a separate company and sold to defense contractors for use in a final product. This channel also includes numerous domestic firms that make low-beryllium alloys, but they typically do not purchase subject products as raw materials. Such firms usually use beryllium oxide, low-beryllium master alloys, beryllium scrap, or beryllium-alloy scrap. ***.⁶⁸

Fabricators are firms that use beryllium metal or high-beryllium alloy semifinished forms to fabricate the final shape of a product by machining, or by extruding, forging, rolling, drawing, or casting.⁶⁹ These firms usually specialize in either structural or optical/instrument parts, which are sold to companies that incorporate the parts into final goods. The last channel of distribution is end users, who typically purchase beryllium metal and high-beryllium alloy semifinished forms and make their own arrangements for machining or other shaping.

Price

Prices for the subject products are generally quoted on the basis of contained pounds of beryllium. On an absolute weight basis, the price per pound of high-beryllium alloys will be substantially less than the price per pound of beryllium metal because the alloying metal, such as aluminum, is much less expensive than beryllium metal. ***.

⁶⁷ Nuclear Metals states its high-beryllium alloy is protected by patent and its investment casting process is a trade secret. (Staff conversation with *** of Nuclear Metals, Mar. 28, 1996.) The investment castings require minimal machining whereas the semifinished products typically require considerably more fabrication.

⁶⁸ Petitioner's questionnaire (final), p. 8.

⁶⁹ Extruded, forged, rolled, drawn, and cast shapes may require some minor machining.

PART II: CONDITIONS OF COMPETITION IN THE U.S. MARKET

SUPPLY AND DEMAND CONSIDERATIONS

U.S. Supply

The sensitivity of the domestic supply of beryllium metal and high-beryllium alloys to changes in price depends upon such factors as the availability of excess capacity, the existence of export markets, the levels of inventories in relation to sales, and the ease of shifting from the production of beryllium to other products. Brush Wellman had *** excess capacity throughout January 1993-September 1996. The capacity utilization rate for beryllium metal was *** percent in 1993, *** percent in 1994, and *** percent in 1995 (table III-1); during January-September 1996 it was *** percent, as compared with *** percent during the first 9 months of 1995. Brush Wellman's capacity utilization rate for high-beryllium alloys was *** percent in 1993, *** percent in 1994, and *** percent in 1995; it was *** percent in January-September 1996 as compared with *** percent in January-September 1996. This suggests that the industry has *** flexibility in expanding output in response to changes in price. In addition, the availability of an export market indicates that the petitioner has some flexibility in diverting shipments to and from foreign markets in response to price changes, ***. Exports of beryllium metal and high-beryllium alloys *** (appendix table C-1). During January-September 1996, exports amounted to *** percent of total shipments, a *** from the ***-percent level during January-September 1995.

Other factors point to less flexibility in adjusting supply. For example, Brush Wellman's end-of-period finished goods inventories of beryllium metal *** during the period where data were collected, and *** end-of-period finished goods inventories of high-beryllium alloys. For beryllium metal, the ratio of inventories to shipments was *** percent in 1993, *** percent in 1994, and *** percent in 1995 (table III-3); during January-September 1996 it was *** percent, *** the *** percent level during the first 9 months of 1995. Brush Wellman *** of high-beryllium alloys. Finally, the equipment used to produce beryllium metal and high-beryllium alloys ***.¹ Thus, there is *** to other products in the short run in response to price changes.

U.S. Demand

Demand Considerations

The overall U.S. demand for beryllium metal depends greatly upon defense spending in certain applications such as electro-optical weapon systems and inertial guidance systems where light weight and stiffness are important. Beryllium metal is also used in nuclear weapons and certain nuclear reactors because of its unique properties. A smaller commercial business also exists for beryllium metal in X-ray tubes, laser scan mirrors, and satellite structures.

High-beryllium alloys offer properties that are particular to beryllium and materials such as aluminum and titanium. Finished parts of high-beryllium aluminum alloy can be machined more easily than beryllium metal. Also, unlike beryllium metal, high-beryllium alloys can be investment cast. Such castings are currently being slated for a variety of uses on new flight systems such as on the F-22 fighter aircraft and the Comanche helicopter, as well as on electronic upgrades of current aircraft.

Brush Wellman and BMI, a major importer of the subject product from Kazakstan during January 1993-September 1996, both agree that the demand for beryllium metal has fallen significantly since 1993 as a result of the U.S. Government discontinuing additions to the National Defense Stockpile and because of

¹ ***.

reduced defense spending. Some purchasers that use beryllium metal in defense applications also reported a reduction in demand due to reduced defense spending. However, Nuclear Metals, which has used both domestically produced and imported beryllium metal, reported *** due to its invention of a castable high-beryllium alloy.

While demand for beryllium metal has clearly declined, Brush Wellman reported that demand *** for high-beryllium alloys has ***, due primarily to the displacement of other materials by rolled, extruded, and investment cast forms of high-beryllium alloys. However, thus far there have been few commercial applications for such alloys .

Substitute Products

The sensitivity of the overall demand for beryllium metal and high-beryllium alloys in the United States to changes in price depends upon the cost of beryllium as an input in final products and the availability of substitute products. Since beryllium metal is very expensive, sometimes costing hundreds of dollars per pound, an increase in the cost of beryllium could significantly affect the final price of and demand for the products that use relatively large quantities of it. However, the cost share varies widely depending upon its particular application. Purchaser questionnaires reported beryllium costs ranging from less than 1 percent of the final product to as much as 70 percent, with most firms reporting between 20 and 50 percent.

The petitioner and some purchasers consider other materials to be substitutes for beryllium metal or high-beryllium alloys in certain cases.² Beryllium has the advantage over other materials of light weight, stiffness, and thermal management, but has the disadvantage of being far more expensive. At the design stage for a product, beryllium may compete with titanium, aluminum, steels, and composites. However, once a specific application is designed to use beryllium, no other material can normally be used in its place.

Opinions differ on whether beryllium scrap is a satisfactory substitute for beryllium metal or high-beryllium alloys. *** and 4 of 18 purchasers of beryllium metal and/or high-beryllium alloys stated that scrap can be substituted in some circumstances if it meets the quality requirements of the application, while 8 purchasers reported that such substitution is not possible. The other six purchasers did not respond to this question.³ Separately, two of four purchasers that only buy beryllium scrap consider this scrap to be a substitute for beryllium metal in some applications.

SUBSTITUTABILITY ISSUES

U.S. Purchasers

Purchaser questionnaires were sent to fabricators, processors, and end users of beryllium metal and high-beryllium alloys who are important customers of the petitioner or importers of material from Kazakhstan. While 17 purchasers completed questionnaires, only *** purchasers, ***, have actually purchased any beryllium metal from Kazakhstan.⁴ ***. *** of these companies have also purchased U.S.-produced beryllium metal, although in the *** these purchases have consisted of downstream products not covered by the investigation.

² None of the importers provided information on the substitution of other materials for beryllium metal and high-beryllium alloys.

³ *** stated that scrap is not a substitute for beryllium metal. None of the other importers commented on the substitutability of scrap for metal.

⁴ Several firms that completed questionnaires indicated that they only purchased beryllium scrap. The responses of these firms were not tabulated with those for firms that bought beryllium metal and/or high-beryllium alloys.

Factors Affecting Purchasing Decisions

When ranking factors that are most important overall in choosing a supplier, 5 of 17 responding purchasers put quality in first place. Three purchasers considered the pedigree of the material to be most important, three purchasers stated that there is only one purchase source (Brush Wellman), and two other purchasers reported that their own customers actually choose the suppliers of the beryllium metal. Just one purchaser ranked price in first place. Other factors, including availability, material composition, and reputation/reliability also each received one first place ranking. Among firms that have purchased Kazakstani material, *** ranked price as the most important overall factor, *** ranked pedigree first, *** ranked quality first, and *** ranked availability first.⁵

Purchasers were also asked whether prices or other factors are more important in choosing a supplier when all applicable specifications have been met. Fifteen of the eighteen purchasers that responded to this question said that other factors were more important, while three purchasers said that the price was most important. Other factors frequently cited included quality, chemical properties, and availability.

Before buying beryllium metal or high-beryllium alloys from a supplier, the majority of purchasers require some form of certification from the supplier of the material being sold. Thirteen of seventeen purchasers reported that they require certification, and 10 of these firms stated that the requirement applies to 100 percent of their purchases. An eleventh firm, ***, said that the certification requirements apply to 99 percent of its purchases. *** said that its customers specify pedigree requirements that are passed on to the beryllium supplier. It said that its one-time purchase of material from *** did not require certification since the material was used for in-house testing purposes only.

Comparison of Domestic Products and Subject Imports

U.S.-produced beryllium and imported beryllium from Kazakstan are used in some of the same applications, but certain factors tend to limit competition. While the U.S. industry offers a full range of products including ingots, powder, structural block, and metal block used in optical applications, as well as high-beryllium alloys, the imported beryllium metal consists mainly of ingots plus a small amount of block. Thus, many of the products being marketed by Brush Wellman cannot currently be imported from Kazakstan.⁶ In addition to a smaller import product range, the domestic and imported products differ in chemistry and physical properties. The lack of a pedigree in the case of imported material and differences in product consistency, quality, reliability of supply, and technical support, as well as "Buy American" considerations and differences in market areas and in lead times for delivery may also affect competition.

Although Brush Wellman and *** all agree that beryllium metal from Kazakstan can be used as a substitute for the domestic product in some applications, particularly alloying, Brush Wellman considers the products to be more closely substitutable than do the other firms. Brush Wellman stated that the Kazakstani material ***.⁷ It stated that the ***. *** said that domestic specifications are different from Kazakstani

⁵ Although ***.

⁶ *** purchasers that have bought both domestically produced and imported material from Kazakstan reported that the product range available from the domestic industry is superior to the range available from Kazakstan. *** reported that the product ranges are comparable. Two other purchasers that bought both domestically produced and imported material did not comment on this question.

⁷ According to Brush Wellman, defense/aerospace users require their vendors to be qualified. In the case of intermediate materials such as high-beryllium alloys, end users are unlikely to get involved. For finished or semi-finished materials (such as beryllium block or shapes), customers are likely to qualify both the materials and the vendor. Properties of several material lots are measured and analyzed statistically to insure that vendor processes are capable of meeting the specification. Sometimes the vendor will be qualified as well via quality system surveys and analysis of

(continued...)

specifications and therefore Kazakstani material must be tested and prequalified by any potential customers. It said that the Kazakstani material generally cannot be qualified for structural/pure beryllium applications, although it can be used for input material for alloying.

Some importers and purchasers specifically cited the lack of a pedigree for imported beryllium metal from Kazakhstan as a serious impediment to sales to some customers. Among importers, *** and *** both stated that this is an important problem, while two other importers, *** and ***, did not cite this as a problem. Among purchasers, *** stated that some end-use customers require beryllium metal produced by Brush Wellman because the Kazakstani material does not have a pedigree. Four other purchasers, ***, also reported that the pedigree is an important purchasing consideration.⁸

In order to determine whether pedigree requirements are becoming less important, the producer, importer, and purchaser questionnaires asked whether technological changes in the production process for downstream products that use beryllium and high-beryllium alloys have resulted in a shift in demand from material that has a pedigree to material that lacks a pedigree in recent years. Brush Wellman stated that ***.⁹ Of the 10 purchasers that were able to respond to this question, 8 said that no shift has occurred. Nuclear Metals said that due to the development of its new casting technique it ***. The other purchaser, a fabricator, said that in most cases its customers require a pedigree, but that in one recent application the pedigree requirement was removed.

*** that have bought both U.S.-produced and imported beryllium metal from Kazakhstan compared the domestic and imported products in a number of categories, including product consistency, quality, reliability of supply, and technical support service. *** reported that the domestic product is superior in all of these areas, while *** reported that the domestic and imported products are comparable in all areas. The other purchasers, ***, both said that Brush Wellman is superior in support services, but that the domestic and imported metals are comparable in consistency, quality, and reliability of supply. *** and *** did not compare the U.S.-produced and Kazakstani material.

"Buy American" provisions influence some purchases of beryllium although the effect is widely varied. Seven of 16 purchasers reported that some of their purchases are influenced by these policies but only two firms estimated a percentage. One firm said that all its purchases are subject to these provisions, and the other said that about 30 percent are affected.

Brush Wellman considers the *** to be its market area, while 3 of the importers, ***, all consider their market areas to be limited to the Northeast. However, *** reported that its service area goes beyond this region. *** sells to customers ***.

Lead times for delivery differ for the domestically produced and imported beryllium products. Brush Wellman reported that its typical lead time is *** when the product is in inventory and *** when it has to be produced. BMI reported that the lead time for delivery of vacuum-cast metal available in inventory in Kazakhstan is *** days. However, other beryllium products such as ***.¹⁰ None of the other importers were able to generalize about lead time policy. However, *** reported that it can deliver imported material within 2 days of its receipt in the United States.

⁷ (...continued)

financial strength. For some large customers, the cost of qualification could be in excess of \$50,000 and take more than 1 year. For pre-produced material (that is stockpiled), qualification is likely to be in the form of 100-percent testing and screening to sort conforming from nonconforming material. Commercial customers are less likely than defense/aerospace users to require their suppliers to be qualified.

⁸ ***.

⁹ *** has occurred. None of the other importers commented on this question.

¹⁰ Conversation with ***, Nov. 20, 1996.

ELASTICITY ESTIMATES

The staff estimates of elasticities discussed in this section were used in the COMPAS analysis described in appendix F. The domestic supply elasticity for beryllium metal and high-beryllium alloys measures the sensitivity of the quantity supplied by the domestic producer to a change in the U.S. market price of these products. On the basis of information relating to capacity utilization, ratios of inventories to production, the importance of export markets, and the flexibility of facilities and equipment in shifting between beryllium metal and high-beryllium alloys and other products, it appears that the elasticity falls in the range of 5 to 10. Neither the petitioner nor the respondents commented on this estimate in their briefs.

The U.S. demand elasticity for beryllium metal and high-beryllium alloys measures the sensitivity of the overall quantity demanded to a change in the U.S. market price of these products. Based on the available information developed in this investigation relating to substitute products, it is likely that this elasticity is in the 0.5 to 1.0 range. Neither the petitioner nor the respondents commented on this estimate in their briefs.

The substitution elasticity is a measure of the degree to which domestically produced beryllium and high-beryllium alloys and the imported material from Kazakhstan are substitutable across the range of possible uses. The information relating to such factors as differences in domestic and import product ranges, chemical and physical differences in products, and other factors cited previously indicate that this elasticity probably falls in the 2 to 4 range. Neither the petitioner nor the respondents commented on this estimate in their briefs.

PART III: CONDITION OF THE U.S. INDUSTRY

The Commission analyzes a number of factors in making injury determinations (see 19 U.S.C. §§ 1677(7)(B) and 1677(7)(C)). Information on the margin of dumping was presented earlier in this report and information on the volume and pricing of imports of the subject merchandise is presented in parts IV and V, respectively. Information on the other factors specified is presented in this section and/or part VI and (except as noted) is based on the questionnaire response of Brush Wellman, the sole U.S. producer included in the U.S. industry by the Commission in its views in the preliminary phase of the investigation. Salient data on the operations of both Brush Wellman and Nuclear Metals on their operations producing high-beryllium-aluminum castings are presented in appendix tables E-1 and E-2, respectively.

U.S. PRODUCERS

Brush Wellman, the petitioner, is the sole U.S. producer of the subject products for sale, and its total production in 1995 was *** pounds of beryllium metal products in subject product form (*** pounds of which was from work-in-progress begun in the previous year). *** of this production ended up as scrap at the plant site. *** percent was sold commercially on the open market, *** percent was used internally as feed for high-beryllium alloys, *** percent was used internally as a feed for low-beryllium alloys, and *** percent was used internally as a feed for other downstream products (wrought shapes and/or finished parts). Brush Wellman also produced *** pounds of high-beryllium alloys (all high-beryllium alloy figures are reported in pounds of contained beryllium) of which *** pounds were from work-in-progress from the previous year. *** of this production ended up as scrap at the plant site. *** percent was sold commercially on the open market and *** percent was used as a feed for other downstream products (e.g., sheet and extrusions).

Brush Wellman is an independent, fully integrated producer, mining bertrandite ore and concentrating it into beryllium hydroxide in Utah, and producing subject products at a plant site in Elmore, OH. The company has no related firms, foreign or domestic, that produce subject products. This plant also produces beryllium-copper alloys, beryllium oxide, and small amounts of other low-beryllium alloys, and has research and development facilities. The company was founded in 1931 as the Brush Beryllium Co. to develop commercial application of beryllium metal and ceramic products. In 1971, the company acquired the S.K. Wellman Division of Abex Corp., and changed its name to Brush Wellman.

Brush Wellman has been the only U.S. producer of the subject products for over 15 years. The Cabot Corp., which had acquired the capacity to produce beryllium metal from Kawecki Berylco Industries in 1978, closed its Hazelton, PA, plant and left the business in 1979 because of economic and environmental reasons.

Brush Wellman reported *** of beryllium metal or high-beryllium alloys.¹ Its export shipments of beryllium metal and high-beryllium alloys were *** percent of total shipment quantity in 1995; *** accounted for nearly all the exports. The principal export markets were ***.

Brush Wellman reported high-beryllium alloy casting production of *** of contained beryllium in 1995, up *** from *** of contained beryllium produced in 1994. There were no commercial shipments of these castings. ***.² ***.

Nuclear Metals, Inc., an independent U.S. company located in Concord, MA, is a producer of high-beryllium-aluminum alloys.³ Since 1991, this company has produced investment castings directly from

¹ In 1992, Brush Wellman ***. (Staff conversation with *** of Brush Wellman, Apr. 19, 1996.)

² Petitioner's producers' questionnaire, p. 18.

³ Nuclear Metals has patented three alloys: one for investment castings for structural applications, one for investment castings for electronic applications, and one for extruded components.

molten beryllium-aluminum. Nuclear Metals also produces ***.⁴ ***. For the year ended Sept. 30, 1996, the company produced high-beryllium-aluminum investment castings amounting to *** pounds contained beryllium. *** percent was sold and the balance was used for internal research and development purposes.⁵

Nuclear Metals contends that it should be included as a U.S. producer because of its significant investment in developing high-beryllium-aluminum alloy technology;⁶ however, Nuclear Metals does not support the petition. Nuclear Metals has purchased beryllium metal ingots from Brush Wellman⁷ in the past for use in its high-beryllium alloy investment castings, but no longer does so because it competes with Brush Wellman in the sales of its high-beryllium-aluminum alloy castings and does not want to be dependent on a competitor for its supply of input material.⁸ Nuclear Metals has purchased pedigreed Kazakstani ingot; ***.⁹ ***¹⁰ ***¹¹

Nuclear Metals is in the process of investing \$*** to expand its high-beryllium alloy investment casting facility. The expansion ***.

U.S. PRODUCTION, CAPACITY, AND CAPACITY UTILIZATION

Data for Brush Wellman's U.S. production, capacity, and capacity utilization for the subject products are presented in table III-1. The *** declines in production and capacity utilization in 1994 are because of the winding down of Government purchases for the stockpile (Brush Wellman was converting Government stockpiles of beryl ore to beryllium metal stock blocks/billets in 1993 and to a lesser degree in 1994) and the loss of ***. A considerable amount of scrap is generated in the production process, largely from successive sawing of blocks/billets to customers' specifications, but also from ***. Brush Wellman *** the re-use of its own internally generated scrap because it is of known pedigree; it also buys back and reuses scrap generated by its customers of Brush Wellman product (in some machining processes, considerably more scrap is machined out of a block than is left in the final machined product).

Table III-1
Beryllium metal and high-beryllium alloys: Brush Wellman's capacity, production, and capacity utilization, by products, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

U.S. PRODUCER'S SHIPMENTS

Brush Wellman's shipments are presented in table III-2; a breakout of company transfers and domestic shipments by specified markets is presented in appendix table G-1 and a breakdown of domestic shipments by product form is depicted in appendix table G-2. Shipments paralleled production, with

⁴ This production amounts to ***. Staff meeting with *** , Nuclear Metals, Dec. 18, 1996.
⁵ Of the amount consumed in research and development, ***.
⁶ Conference transcript, pp. 94-95, 136-137. *** of Nuclear Metals stated that the firm's involvement with high-beryllium-aluminum alloys has ***. (Staff conversation with *** , Nuclear Metals, Apr. 19, 1996.)
⁷ However, Nuclear Metals did obtain price quotes from Brush Wellman ***. (Staff conversation with *** , Nuclear Metals, Apr. 19, 1996.)
⁸ Conference transcript, p. 103.
⁹ ***. (Conversation with *** , Jan. 31, 1997.)
¹⁰ Letter from ***.
¹¹ Letter from ***.

decreases in 1994 reflecting the reduced stockpile sales of beryllium metal and the ***; increases in 1995 reflect increases in ***.¹² Structural block *** and instrument/optical grade block were affected by the termination of sales to the Government stockpile. It should be noted that in all periods, ***.

Table III-2
Beryllium metal and high-beryllium alloys: Shipments by Brush Wellman, by products and by types, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

Internal Transfers (Captive Use)

Most of Brush Wellman's beryllium metal in subject product forms is sold commercially, but some (*** percent by quantity during the period for which data were obtained in the investigation) was used captively as an input in the production of high-beryllium alloys, low-beryllium alloys, and other products (***).¹³ In contrast, *** of Brush Wellman's high-beryllium alloys in subject product forms was used captively in the production of ***.¹⁴ For beryllium metal and high-beryllium alloys combined, *** percent was used captively in the production of all downstream articles.¹⁵ As for castings, Brush Wellman does not internally consume high-beryllium alloy castings to make other products, but *** Brush Wellman's high-beryllium alloy castings ***.¹⁶

¹² In the public conference, Robert J. Rozek stated "... most of the growth in emerging markets pertains to beryllium-copper alloy products and to other low-beryllium alloys outside the scope of this investigation." (Conference transcript, p. 15.)

¹³ Of the beryllium metal internally consumed by Brush Wellman during the period for which data were obtained in the investigation, *** percent went to the production of high-beryllium alloys (beryllium metal accounted for approximately *** percent of the raw material cost of producing these alloys); *** percent went to the production of low-beryllium alloys (beryllium metal accounted for approximately *** percent of the raw material cost of producing these alloys); and *** percent went for *** (beryllium metal accounted for approximately *** percent of the raw material cost of these products).

Brush Wellman's captively consumed *** percent of its total shipments of beryllium metal in the production of downstream articles other than high-beryllium alloys during the period for which data were collected in the investigation.

¹⁴ Of the high-beryllium alloys internally consumed by Brush Wellman during the period for which data were obtained in the investigation, *** percent went to the production of *** (high-beryllium alloys accounted for *** percent of the raw material cost of producing such ***); *** percent went to the production of *** (high-beryllium alloys accounted for *** percent of the raw material cost of producing these ***), and *** percent went to the production of high-beryllium alloy *** (high-beryllium alloys accounted for approximately *** percent of the raw material cost of producing such ***). It should be noted that the *** percent of high-beryllium alloys internally consumed to produce *** and the *** percent of high-beryllium alloys internally consumed to produce *** were ***.

¹⁵ Of the beryllium metal and high-beryllium alloys internally consumed by Brush Wellman during the period for which data were obtained in the investigation, *** percent went to the production of *** (high-beryllium alloys accounted for *** percent of the raw material cost of producing such ***); *** percent went to the production of *** (beryllium metal and high-beryllium alloys accounted for *** percent of the raw material cost of producing these ***); *** percent went for *** (beryllium metal accounts for approximately *** percent of the raw material cost of these products); and *** percent went to the production of high-beryllium alloy *** (high-beryllium alloys accounted for approximately *** percent of the raw material cost of producing such products). As noted in the previous footnote, the data are influenced by the relatively large amounts of ***.

¹⁶ Nuclear Metals ***. Also, Nuclear Metals produces ***. See staff notes of meeting with *** of Nuclear Metals, Dec. 18, 1996.

Brush Wellman stated that the beryllium metal it internally transferred for further processing into downstream products generally does not enter the merchant market for the domestic like product; the beryllium metal transferred (***) comprises the essential and predominate material in downstream products; and the beryllium metal sold in the merchant market (in the form of ingot, powder, block, and blank) is not generally used in the production of the downstream products ***.^{17 18}

U.S. PRODUCER'S INVENTORIES

Brush Wellman's inventories are presented in table III-3. The firm does not maintain *** because it primarily produces its subject semifinished products to a specific customer's specifications. However, it does maintain ***.

Table III-3
Beryllium metal and high-beryllium alloys: End-of-period inventories of Brush Wellman, by types and by products, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

U.S. EMPLOYMENT, WAGES, AND PRODUCTIVITY

Brush Wellman's employment data and productivity are presented in table III-4; data on the Ohio plant are presented in appendix table G-3. In its questionnaire response, the firm noted its ***. In the public conference, Mr. Robert J. Kozek stated that the firm had "reduced our in-house service group" and "eliminated" 20 supervisory staff.¹⁹ Decreases of productivity and increases of unit labor costs in the beryllium metal segment in 1994 are, in part, attributable to the loss in Government stockpile sales since the stock block/billets produced for the stockpile require a less labor-intensive powder process (vacuum hot pressed) and only minor surface cleaning rather than labor-intensive sawing or drilling like most of the blocks/billets for fabricator/end-user customers.

Table III-4
Average number of Brush Wellman's production and related workers producing beryllium metal and high-beryllium alloys, hours worked, wages paid to such employees, and hourly wages, productivity, and unit labor costs, by products, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

¹⁷ Brush Wellman's prehearing brief, pp. 25, 26.

¹⁸ In response to a question on whether the downstream products for which Brush Wellman internally transfers or captively consumes beryllium metal, high-beryllium alloys, or high-beryllium alloy castings compete for sales in the commercial market with those products, Brush Wellman stated in its questionnaire "***." The approximate sales value of Brush Wellman's downstream products containing internally transferred or captively consumed beryllium metal or high-beryllium alloys in subject product forms or high-alloy beryllium castings was \$*** in 1995.

In response to the question "Is any portion of your commercial market sales of beryllium metal or high-beryllium alloys in subject product forms or high-beryllium castings used by your customers to produce the same downstream product(s) that your firm produces from captively-used beryllium metal or high-beryllium alloys in subject product forms or high-beryllium alloy castings?", Brush Wellman stated in its questionnaire "***."

In response to the question "If you both internally consume and sell to unrelated customers beryllium metal or high-beryllium alloys in subject product forms or high-beryllium alloy castings, does the product that your firm internally transfers or captively consumes differ from that which it sells to unrelated customers?", Brush Wellman stated in its questionnaire "***."

¹⁹ Conference transcript, p. 17.

PART IV: U.S. IMPORTS, APPARENT CONSUMPTION, AND MARKET SHARES

U.S. IMPORTERS

There is one importer, Beryllium Materials International, L.C. (BMI) in Tampa, FL, that imports pedigreed¹ beryllium metal ingot lump from Kazakstan. BMI is a joint venture between Loral American Beryllium, Inc., First Concord Materials, Inc., and the Ulba Metallurgical plant located in Ust-Kamenogorsk, Kazakstan. In the start-up phases of the joint venture, ***. Most material imported by BMI was sold to ***.^{2 3} Another firm, Spindrift Group, Ltd., Half Moon Bay, CA, was identified in the petition as an importer of beryllium metal scrap, but the petition alleged that some *** pounds of the over *** pounds of beryllium metal product that Spindrift imported from Kazakstan in January 1995 consisted of subject merchandise that was mistakenly classified as "scrap".⁴ ***, which imports beryllium scrap (brake drums, gyroscope housings, etc.) from ***, received some ***.⁵ Additionally, ***.⁶

¹ The term "pedigreed" refers to the fact that the metal is certified to be of known chemistry. All imports by BMI are of pedigreed beryllium metal. However, ***. (Letter from *** and conversation with ***.)

² ***. (Staff conversation with ***.)

³ Loral American Beryllium Products, a fabricator of beryllium metal, was bought by Lockheed Martin in the spring of 1996. Lockheed Martin Beryllium in turn sold the assets of the company to Speedring Inc., effective Oct. 1, 1996, and the transfer of all the assets was completed Dec. 20, 1996. (See staff notes of telephone conversations with ***. *** of BMI said that *** since ***. (Staff notes of telephone conversations with *** of BMI Oct. 9, 1996, and Oct. 30, 1996.)

⁴ Spindrift contends that its beryllium imports are scrap; there is no pedigree for this merchandise. Without certification, *** of Spindrift states that for most uses the product would be unacceptable. It would require extensive chemical and physical tests to certify the product, and each different piece would have to be tested since what he has is a mixture of what was in the plant at the time they discontinued operations. Counsel for Ulba concurs: ***. (Letter dated Apr. 16, 1996.)

⁵ ***. (Conversation with ***, Jan. 31, 1997.) However, these *** come without a pedigree and were both sold and bought as scrap. Moreover, counsel for the respondents argues that "By agreement among the former members of the Soviet Union, any materials on the territory of a republic at the time of the breakup of the Soviet Union became the property of that republic. The republic where that material was located at the time of the breakup has total ownership, dominion and control over the material. Any such material exported must be considered an export from that republic." (Letter dated Apr. 16, 1996.)

⁶ ***. (Conversation with ***, Feb. 3, 1997.)

U.S. IMPORTS

During the reporting period, there were no reported U.S. imports of subject products⁷ from sources other than Kazakhstan and ***.⁸ U.S. imports of pedigreed beryllium metal ingot lump imported from Kazakhstan *** by BMI ***, nonpedigreed beryllium metal in whole ingot, ingot lump, and semifinished block and blank forms imported from Kazakhstan by Spindrift in ***, and nonpedigreed *** imported from *** by *** are presented in table IV-1. Subject imports increased slightly in 1994 and then rose dramatically in 1995; the increase in 1995 is a result of three things: (1) pedigreed ingot imports from Kazakhstan increased as the customer for ingot, ***, (2) Spindrift purchased *** pounds of beryllium scrap from the Ulba plant in Kazakhstan (including *** pounds of nonpedigreed ingot/ingot lump and nonpedigreed blocks/blanks), and (3) *** imported nonpedigreed *** (but identified to the staff as being produced in Kazakhstan). Subject imports decreased by *** percent in January-September 1996 compared with the corresponding period in 1995, as imports of pedigreed ingot fell to ***; imports of nonpedigreed ***. There were no imports of high-beryllium alloys in subject product forms reported; nor were there any commercial quantities of pedigreed blocks/blanks.⁹ There were ***.

Table IV-1

Beryllium metal: U.S. imports, by sources, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

⁷ The form in which beryllium is imported (ingot, block, blank, etc.) determines whether it is subject. This can be confusing when it comes to block, which can be cut down to successively smaller sizes and then the remnants scrapped. ***, an importer of scrap metal, reported that he received blocks (differing sizes, shapes, and condition) that come mixed up with scrap machined parts (brake drums, etc.) in the same packing drums. The amount of block in the drums varies, ***. *** bought all the material at a package price and sold all the product as scrap to melters with no price distinction because some was block. He has no records that would enable him to provide separate data on the block. The staff sought a clarification of what constitutes scrap versus subject block from Brush Wellman, and the situation of nonpedigreed block mixed with machined parts in the same packing crate was described; according to Brush Wellman representatives, inasmuch as the block material had no certification as to chemistry or properties and was good for nothing but melting, it was scrap and outside the scope of investigation. (Notes of Bonnie Noreen's plant tour, Nov. 7, 1997.) For the purposes of this investigation, staff have excluded ***.

⁸ According to information provided by the U.S. Customs Service, ***. There were reported imports of nonpedigreed *** from ***. (Conversation with ***, Jan. 31, 1997.) Staff have included these imports (separately annotated) with other subject imports from Kazakhstan.

⁹ *** from BMI stated that the only high-beryllium alloy from Kazakhstan that he has any knowledge of is *** but he dropped the subject over a year ago when he found out Ulba doesn't have the capability to produce any more. Similarly, BMI *** prior to finding out that Ulba didn't really have much available and wasn't capable of making any more. *** pointed out that when BMI was first established, it really had no idea what exact products were available at Ulba, since at the time, Ulba considered that to be a State secret. (Staff conversation with ***, Apr. 15, 1996.) As a supplement to its pricing section in the Commission's questionnaire, Brush Wellman attached an affidavit by ***, a Brush Wellman employee, stating that in May 1995 he had attended a conference where a paper was presented by David Chellman of Lockheed Martin that contained extensive test results of Kazakstani aluminum-beryllium alloy that was allegedly supplied to Lockheed Martin by BMI. Mr. David Chellman of Lockheed Martin stated that in May 1995 he indeed presented a paper in Anaheim, CA, at the AeroMat 95 conference. The paper was about work Lockheed Martin had done on high-aluminum-beryllium alloy that Lockheed had acquired from Brush Wellman. Mr. Chellman stated that his paper was followed by a presentation by Dr. Valerie Savchuck of Ulba (accompanied by David Brown of BMI) and there was some confusion regarding that presentation because of the language barrier; Mr. Chellman did request that he be sent a copy of Mr. Savchuck's presentation (none were available at the time) and has subsequently received it. Mr. Chellman further stated that ***. (Staff conversation with Mr. David Chellman, Apr. 22, 1996.)

APPARENT U.S. CONSUMPTION

Data on apparent U.S. consumption are presented in table IV-2. Alternative scenario data excluding all nonpedigreed imports are presented in appendix table D-1; alternative consumption data using beryllium hydroxide as a surrogate for domestic production of all beryllium are presented in appendix tables D-2 and D-3; and alternative consumption data using the U.S. producer's domestic commercial shipments instead of U.S. shipments are presented in appendix tables D-4 and D-5. Apparent consumption during 1993-94 closely mirrored Brush Wellman's shipments since imports had little impact. In 1995, consumption of beryllium metal and high-beryllium alloys, on a quantity basis, increased by *** percent, compared with 1994, with shipments of imports from Kazakhstan and *** accounting for *** percent of the growth and Brush Wellman accounting for *** percent. In January-September 1996, consumption increased by *** percent over January-September 1995; during this period, shipments of imports from Kazakhstan and *** declined by *** percent, while Brush Wellman's shipments increased by *** percent. It should be noted that consumption of beryllium metal in January-September 1996 is actually ***.

Table IV-2

Beryllium metal and high-beryllium alloys: U.S. shipments of domestic product, U.S. shipments of imports, by sources, and apparent U.S. consumption, by products, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

A representative of Brush Wellman stated at the Commission's conference that the U.S. market accounts for roughly 90 percent of the world market for high-beryllium materials.¹⁰

U.S. MARKET SHARES

Market shares based on U.S. shipments by Brush Wellman and importers are presented in table IV-3. Brush Wellman's market share, on the basis of quantity, declined from *** percent in 1993 to *** percent in 1995, before increasing to *** percent in January-September 1996; on the basis of value, Brush Wellman's market share decreased from *** percent in 1993 to *** percent in 1995, before increasing to *** percent in January-September 1996.

Table IV-3

Beryllium metal and high-beryllium alloys: Apparent U.S. consumption and market shares, by products, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

¹⁰ Michael Anderson, Vice President Beryllium Products, Brush Wellman. (Conference transcript, p. 39.)

PART V: PRICING AND RELATED DATA

FACTORS AFFECTING PRICING

Ocean transportation charges for shipping beryllium metal from Kazakhstan to the United States account for a relatively small share of the final price of imported beryllium metal. During the period of the Department of Commerce investigation during July-December 1995 these charges amounted to approximately 1 percent of the customs value of these imports. Duties collected amounted to about 7 percent of the value of the subject imports during this 6-month period.

Domestically produced beryllium tends to be shipped longer distances within the United States than imported beryllium from Kazakhstan. Brush Wellman reported that *** percent of its shipments are for distances of 100 miles to 500 miles and the remainder are for distances of ***. In contrast, *** reported that ***. However, Spindrift reported that ***. Brush Wellman reported that its shipping costs average *** of the total delivered price of the products, while costs reported by importers of material from Kazakhstan ranged from *** of the delivered price.

A quarterly nominal exchange rate index for January 1994-September 1996 and a quarterly real exchange rate index for January 1995-September 1996 for the currency of Kazakhstan relative to the U.S. dollar are presented in figure V-1.¹ Published data for earlier periods were not available. Nominal exchange rates of the Kazakstani currency relative to the U.S. dollar generally declined during the 11 quarters where data were available, while real exchange rates increased slightly during 1995 and the first three quarters of 1996.

PRICING PRACTICES

Prices of beryllium metal and high-beryllium alloys are commonly based on markups from costs. Brush Wellman reported that it estimates its costs and then adds a markup to these costs which is quoted to the customer. All importers reported that prices are negotiated on a transaction-by-transaction basis. Twelve of eighteen purchasers reported that prices are negotiated between the buyer and seller, while the other 6 purchasers reported that the seller sets the prices. Most purchasers only contact one supplier (Brush Wellman) before making a purchase, but some purchasers reported contacting two or three suppliers. Brush Wellman quotes prices on an f.o.b. warehouse basis and all importers quote prices from points of shipment in the United States.

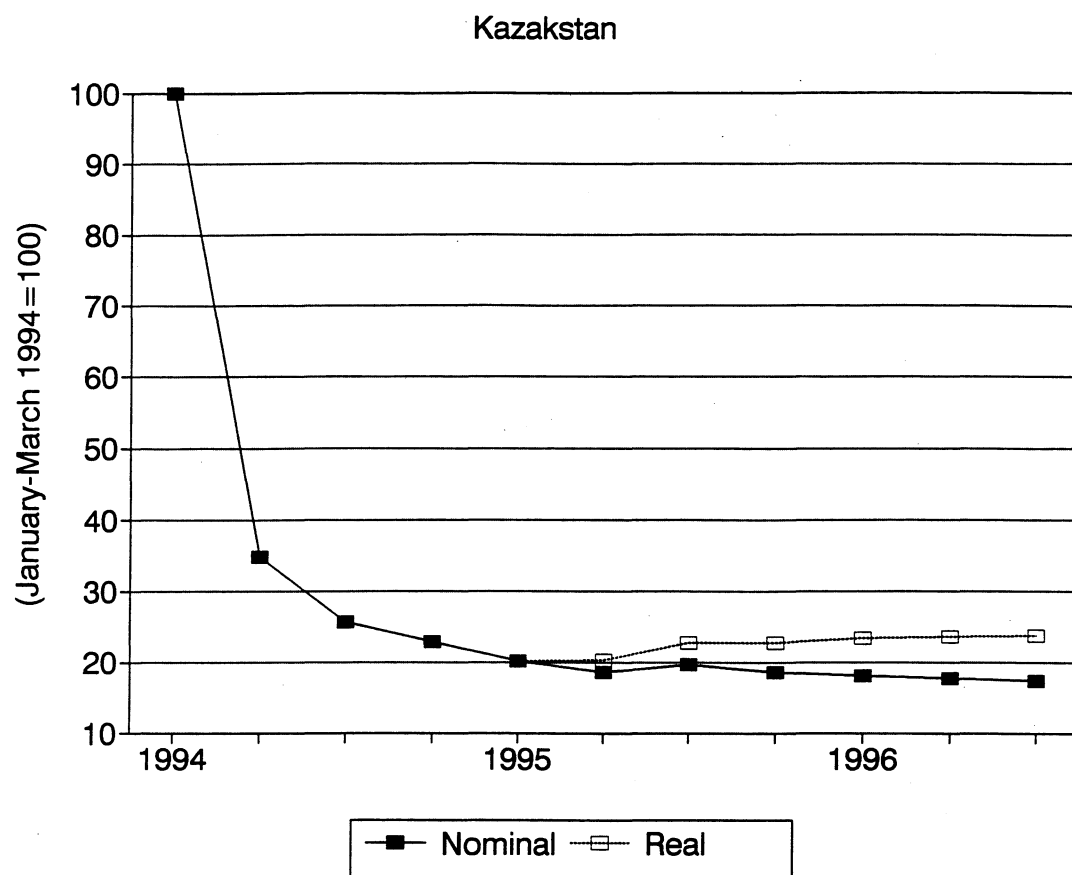
Buyers of beryllium metal and high-beryllium alloys generally do not purchase this material on a regular basis. When asked how frequently they buy beryllium and/or high-beryllium alloys, 11 of 16 purchasers reported that they buy it irregularly. In the case of the other five firms, one reported that it makes purchases roughly once every 2 years, one reported that it purchases quarterly, one reported monthly purchases, and two reported weekly purchases.

*** sales of U.S.-produced beryllium metal and high-beryllium alloys are made on a spot basis, and all sales of imported material from Kazakhstan are on a spot basis. Overall, *** percent of Brush Wellman's sales are spot and *** percent are contract. The contracts are typically for periods of 6 months to one year, with prices and quantities both fixed. These contracts have a 20-percent premium for subminimum shipments. The contracts generally do not contain meet-or-release provisions.

¹ Real exchange rates are calculated by adjusting the nominal rates for movements in producer prices in the United States and Kazakhstan.

Figure V-1

Indexes of nominal and real exchange rates for the currency of Kazakhstan relative to the U.S. dollar, by quarters, Jan. 1994-Sept. 1996



Source: International Monetary Fund, *International Financial Statistics*, January 1997.

PRICE DATA

Brush Wellman and the importers were asked to provide quarterly quantity and value data on shipments of three commonly used categories of beryllium products for the period January 1993-September 1996 for use in determining average quarterly prices. Since beryllium products are made to order and each sale involves items with unique specifications, the product categories shown below do not represent commodity items.

Product 1--Vacuum-cast beryllium metal in the form of ingots or lumps containing 99 percent or greater beryllium and less than 0.5 percent oxygen, with the balance being various metallic elements.

Product 2--Beryllium metal structural block, whether produced by vacuum hot pressing (VHP) or hot isostatically pressing (HIP), or pressed and sintered, containing 98.5 percent or greater beryllium and over 0.5 but less than 1.5 percent oxygen, with the balance being various metallic elements.

Product 3--Beryllium metal block, intended for use in instrument or optical applications, whether produced by VHP or HIP, containing 94-99 percent beryllium and 0.5 to 4.5 percent oxygen, with the balance being various metallic elements.

Brush Wellman provided complete price data for all three product categories. Its combined shipments of these products accounted for about *** percent of its total domestic shipments in quantity terms in 1995. Importer prices were only available for product 1, which accounted for practically all of the importers' U.S. shipments of beryllium metal from Kazakhstan in 1995; no separate importer sales of products 2 or 3 were reported. Product 1 accounted for only about *** percent of Brush Wellman's total shipments in 1995.

Trends in Prices

Brush Wellman's quarterly prices for January 1993-September 1996 for product 1, shown in table V-1 in dollars per pound of contained beryllium, *** throughout the period. Similarly, no trend was evident for the importers' prices for product 1 during the quarters where sales were reported. The petitioner's prices for its other products also *** (table V-2).

Table V-1

Product 1: F.o.b. prices reported for U.S.-produced and imported beryllium metal from Kazakhstan, by quarters, Jan. 1993-Sept. 1996

* * * * *

Table V-2

Products 2 and 3: F.o.b. prices reported for U.S.-produced beryllium metal, by quarters, Jan. 1993-Sept. 1996

* * * * *

Price Comparisons

Since the imported and domestic products differ in chemistry and physical properties, and domestic specifications differ from Kazakstani specifications, precise quarterly comparisons cannot be made. However, the data collected indicate that prices of domestically produced product 1 were *** higher than import prices in all six quarters where prices of both were available (table V-1). In the second and fourth quarters of 1993, the domestic price was more than *** the import price. It was nearly *** the import price in the second quarter of 1994 and the first and third quarters of 1995. During the fourth quarter of 1994 the domestic price was more than *** percent higher than the import price.

In addition to the price data shown in the table, *** also provided price information on beryllium metal from Kazakhstan. During the first, third, and fourth quarters of 1995, *** sold a total of *** pounds of ingot and ingot lump at average quarterly prices ranging from \$*** to \$*** per pound. This material falls into the category of product 1, although *** considers it to be scrap, and it may not be acceptable for all applications. It is priced far lower than the domestic product.² *** also sold *** to a number of customers. *** sales included ***. Since the sales ***. *** average quarterly prices for this material ***.

*** reported sales of imported product 1 from *** during 1995 and 1996.³ *** said that it sold all of this material to *** at *** prices. *** sold *** pounds at \$*** per pound in the 4th quarter of 1995 and *** pounds at \$*** per pound in the first quarter of 1996. It sold an additional *** pounds at \$*** per pound in the third quarter of 1996. All of these prices are *** the other import prices and domestic prices as shown in the table.

Two price comparisons were also available from purchaser questionnaires. ***.⁴ ***.

Purchasers that had bought imported beryllium metal during 1995 or 1996 were asked approximately how much higher the price for the imported material would have to have been before they would have purchased the domestic metal in place of it. *** that had purchased imported Kazakstani metal responded to this question. One answered that it ***. However, this respondent indicated that purchase decisions are not based on price alone. A second purchaser stated that ***. A third purchaser reported that the question was not applicable in its situation. This purchaser reported that ***. Three other purchasers did not respond to the question.

Price Leadership

When asked to name a firm or firms that are price leaders in this industry, the majority of the 14 purchasers that responded listed Brush Wellman. Eleven purchasers listed Brush Wellman alone as the price leader, one listed Spindrift and Brush Wellman as leaders, and one named Brush Wellman and Nuclear Metals. The remaining purchaser, ***, does not consider any firm to be a price leader. Eight of the eleven firms that cited Brush Wellman alone as the price leader reported that they buy all of their beryllium metal and/or beryllium alloys from Brush Wellman while the other three firms buy from one or more of the other suppliers.

When asked whether price changes by the price leader have been upward or downward over time, firms that were able to answer this question generally indicated that the trend has been upward. Four purchasers indicated that Brush Wellman has increased prices over time, while one indicated that it has raised prices on some products and lowered prices on other products. Another purchaser reported that the availability of Kazakstani material has forced Brush Wellman to offer a lower priced product.

² ***.

³ ***.

⁴ ***.

LOST SALES AND LOST REVENUES

In the preliminary and final investigations, Brush Wellman provided a total of 14 lost sales allegations involving nearly *** pounds of beryllium valued at more than \$*** during January 1993-September 1996, 2 additional lost sales allegations concerning unspecified values and quantities, and 5 lost revenue allegations involving about *** pounds of beryllium valued at more than \$***.⁵ The Commission staff contacted purchasers and investigated all of the allegations. The discussions with purchasers are presented below. ***.

Brush Wellman cited *** in a lost revenue allegation involving \$*** on a sale of *** and also cited *** in a total of *** lost sales allegations involving *** pounds of beryllium metal valued at \$***. *** denied all of the allegations. He acknowledged that *** purchases imported beryllium from Kazakhstan, but said that the reason for purchasing from this source is not ***. He said that in the past ***.

A posthearing submission by Don King, the manager of sales and contracts for Nuclear Metals, indicates that the ***. This detailed submission by Mr. King is presented in appendix H.

Brush Wellman alleged that it lost a sale of *** and that it lost revenues of \$*** to competition from imports from Kazakhstan. According to Brush Wellman, ***. Most of the material referred to in the lost revenue allegations was also related to ***; *** was cited as a downstream customer in these allegations. *** denied the allegations. He said that ***. He said that ***.⁶ ***. He said that *** has specified that it will only accept material with a pedigree. Since material from Kazakhstan lacks a pedigree, *** has never solicited any bids from importers of Kazakstani material for use in ***.⁷

***. He said that *** as the preferred source of supply. He said that they had considered ***.⁸ ***.

In addition to allegations of direct competition from metal block from Kazakhstan, Brush Wellman further alleged ***.⁹

Brush Wellman alleged that it lost a sale of *** pounds of beryllium metal valued at \$*** to *** due to competition from imports from Kazakhstan. ***.¹⁰ ***.

Brush Wellman alleged that it lost revenues of \$*** on a sale of *** pounds of beryllium in *** to ***. ***.¹¹ ***.

Brush Wellman alleged that it lost a sale of *** pounds of beryllium metal valued at \$*** to *** due to competition from imports from Kazakhstan. ***. *** said that *** buys the largest share of its beryllium from Brush Wellman. Its purchases from Brush Wellman consist of ***; while its purchases of Kazakstani material from *** consist of ***. *** said that *** began purchasing from *** because it prefers to have two

⁵ In one of the allegations where quantities and values were unspecified, Brush Wellman alleged that ***.

Brush Wellman also alleged that a company that supplies imported beryllium metal from Kazakhstan was planning to sell aluminum-beryllium blanks from Kazakhstan to one of Brush Wellman's former customers, ***. However, *** denied this allegation. He said that ***.

In addition to the lost sales allegations, Brush Wellman reported that it was recently approached by a customer telling them that it had annual requirements for beryllium approaching 12,000 pounds, but that Brush had to meet the Kazakstani price (hearing transcript, p. 203). The staff contacted the customer, ***, to discuss these negotiations. ***.

⁶ *** reported purchases of *** in 1995 in its purchasers' questionnaire.

⁷ ***. The staff contacted *** to obtain additional information concerning this bid. *** said that the price of the imported Kazakstani material was *** than the Brush Wellman price. However, because of the high costs of testing that would have been required for the Kazakstani material, it was *** for *** to use the domestic product (telephone conversation with ***, Dec. 4, 1996).

⁸ ***.

⁹ Interview with ***.

¹⁰ It is likely that any beryllium metal of *** was originally produced in Kazakhstan.

¹¹ ***.

sources of supply. In addition, *** said that Brush Wellman had ***, and that at present this material can only be purchased from ***. However, *** also said that some Kazakstani material that they purchase does not qualify for ***.

Brush Wellman alleged that it lost a sale of *** pounds of beryllium metal valued at \$*** to *** due to competition from imports from Kazakstan. *** denied the allegation. ***.

All of the allegations discussed in the remainder of this section were found to relate to beryllium castings rather than exclusively to beryllium metals or high-beryllium alloys.

* * * * *

*¹²

¹² At the hearing, Michael Anderson, the vice president for beryllium products at Brush Wellman, stated that his company has never satisfied a contract to produce investment castings. Brush Wellman's work on castings is presently in the development stage (hearing transcript, p. 157).

PART VI: FINANCIAL CONDITION OF THE U.S. INDUSTRY

BACKGROUND

Brush Wellman and Nuclear Metals both provided financial data on their beryllium operations. Brush Wellman provided data on its ***. Since the Commission found beryllium metal and high-beryllium alloys to comprise the domestic like product in the preliminary phase of the investigation, we are presenting and discussing the results of ***.

Besides producing the beryllium products subject to this investigation, Brush Wellman also produces large quantities of other high-engineered products, such as specialty metals, other types of beryllium alloys, and beryllia ceramics. In 1995, the company's overall operating profit was \$29 million on sales of \$370 million. In *** of sales of beryllium products subject to this investigation. Selected financial highlights of Brush Wellman's overall consolidated operations are as follows (in millions of dollars):

	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>January-September--</u> <u>1995</u>	<u>1996</u>
Net sales	295.5	345.9	369.6	285.6	286.5
Cost of goods sold	<u>227.7</u>	<u>253.9</u>	<u>268.7</u>	<u>208.3</u>	<u>206.3</u>
Gross profit	67.8	91.9	100.9	77.2	80.2
Selling, general, and administrative expenses . .	50.0	58.1	64.0	47.7	47.7
Research and development expenses	<u>7.1</u>	<u>8.8</u>	<u>7.8</u>	<u>5.9</u>	<u>6.1</u>
Operating income	10.7	25.1	29.1	23.6	26.4
Net income after taxes	6.5	18.6	20.7	16.8	17.9
Capital expenditures	11.9	17.2	24.2	15.5	20.8

For the subject products, Brush Wellman reported ***, as shown below (quantities in pounds):

* * * * * * *

Although the transfers accounted for between ***.

In previous investigations where there were *** intracompany transfers of one product used to produce another, the staff has presented profit-and-loss data utilizing trade sales and intracompany transfers with certain adjustments. The adjustments consisted of (1) accounting for any known cost differences between the product which was sold and product which was transferred, and/or (2) assuming intracompany transfers would be valued as if they were sold at the same profit margin as trade sales.¹ In this particular investigation such adjustments resulted in unusable or misleading data for two reasons.

First, transfer quantities of ***. Since these results might be misleading, we are leaving Brush Wellman's valuation of its transfers (at cost) as submitted. In light of the foregoing, some Commissioners might discount the relevance of transfers and want to see financial data both with and without them. Accordingly, we are presenting Brush Wellman's data both ways--trade only, and trade and transfer.

Brush Wellman's questionnaire data were verified by Commission staff on December 4 and 5, 1996. As a result of the verification, the company ***.

¹ See *Certain Flat-Rolled Carbon Steel Products* . . . , Volume II, USITC Pub. 2664, August 1993, p. I-64.

OPERATIONS ON BERYLLIUM METAL AND HIGH-BERYLLIUM ALLOYS

The results of Brush Wellman's trade-only operations producing beryllium and beryllium alloys combined are presented in table VI-1. The company *** of the total from 1993 through the first 9 months of 1996.

Table VI-1

Income-and-loss experience of Brush Wellman on its trade-only operations producing beryllium metal and high-beryllium alloys, fiscal years 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

Brush Wellman's results have been ***. Net sales decreased *** from 1993 to 1995, and then another *** percent from the first 9 months of 1995 to the first 9 months of 1996. At the same time, ***.

For instance, the decrease in net sales value from 1993 to 1994 was partly because the company's contract with the Government to convert beryl ore to beryllium metal ended, and partly because of a decline in sales of ***. Part of the *** can be attributed to a shift to more commercial applications as the contract with the Government to convert ore for the strategic stockpile ended. ***.

* * * * *

The results of Brush Wellman's trade and transfer operations producing beryllium and beryllium alloys combined are presented in table VI-2.

Table VI-2

Income-and-loss experience of Brush Wellman on its trade and transfer operations producing beryllium metal and high-beryllium alloys, fiscal years 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

The variance analysis showing the effects of prices and volume on Brush Wellman's trade-only net sales of beryllium metal and high-beryllium alloys and of costs and volume on its total expenses is shown in table VI-3. The analysis shows that changes in profitability between and among periods were principally due to ***. The variance analysis is only being presented for trade-only sales since transfers, while having no effect on absolute levels of profitability, would distort the relationships between and among prices, costs, and volume.

Table VI-3

Variance analysis of Brush Wellman's trade-only operations producing beryllium metal and high-beryllium alloys between the fiscal years 1993-95, 1993-94, 1994-95, and between the Jan.-Sept. periods of 1995 and 1996

* * * * *

OPERATIONS ON BERYLLIUM METAL

Brush Wellman's trade only income-and-loss data on its beryllium metal operations are presented in table VI-4. The company's ***. The company's trade and transfer operations producing beryllium metal are presented in table VI-5.

Table VI-4

Income-and-loss experience of Brush Wellman on its trade-only operations producing beryllium metal, fiscal years 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

Table VI-5

Income-and-loss experience of Brush Wellman on its trade and transfer operations producing beryllium metal, fiscal years 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

OPERATIONS ON HIGH-BERYLLIUM ALLOYS

Brush Wellman's income-and-loss data on its trade-only high-beryllium alloy operations are presented in table VI-6. The extent of the company's *** in the first 9 months of 1996. Brush Wellman's trade and transfer operations producing high-beryllium alloys are presented in table VI-7.

Table VI-6

Income-and-loss experience of Brush Wellman on its trade-only operations producing high-beryllium alloys, fiscal years 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

Table VI-7

Income-and-loss experience of Brush Wellman on its trade and transfer operations producing high-beryllium alloys, fiscal years 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

OPERATIONS ON HIGH-BERYLLIUM ALLOY CASTINGS

Brush Wellman's and Nuclear Metals' financial data on their high-beryllium alloy casting operations are presented in appendix E. ***.

INVESTMENTS IN FIXED ASSETS, CAPITAL EXPENDITURES, AND RESEARCH AND DEVELOPMENT EXPENSES

The value of Brush Wellman's fixed assets, together with its capital expenditures and research and development expenditures are shown in table VI-8. The company's capital expenditures ***.

Table VI-8

Value of Brush Wellman's assets, capital expenditures, and research and development expenditures used in the production of beryllium metal and high-beryllium alloys, fiscal years 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

CAPITAL AND INVESTMENT

The Commission requested U.S. producers to describe any actual or potential negative effects of imports of beryllium metal and/or high-beryllium alloys from Kazakhstan on their growth, investment, ability to raise capital, and their development efforts (including efforts to develop a derivative or more advanced version of the product). Nuclear Metals indicated it experienced ***. Brush Wellman's comments were as follows:

* * * * *

Brush Wellman's anticipated negative effects with respect to imports of beryllium from Kazakhstan were as follows:

* * * * *

The Commission also asked U.S. producers the following question: "Without the recent emergence of high-beryllium alloy castings, would your firm have suffered any negative effects due to imports of beryllium metal in subject product forms or beryllium metal scrap from Kazakhstan?" Nuclear Metals said ***. Brush Wellman's response was:

* * * * *

PART VII: THREAT CONSIDERATIONS

The Commission analyzes a number of factors in making threat determinations (see 19 U.S.C. § 1677(7)(F)(i)). Information on the volume and pricing of imports of the subject merchandise is presented in parts IV and V and information on the effects of imports of the subject merchandise on U.S. producers' existing development and production efforts is presented in part VI. Information on inventories of the subject merchandise; foreign producers' operations, including the potential for "product-shifting;" any other threat indicators, if applicable; and any dumping in third-country markets, follows.

THE INDUSTRY IN KAZAKSTAN

The only known producer of beryllium and high-beryllium ingots, billets, powder, and block in Kazakhstan is the Ulba Metallurgical Complex (Ulba), located in the northeastern section of Kazakhstan in the city of Ust-Kamenogorsk. Ulba is under the jurisdiction of the Kazakstani State Atomic Energy and Industrial Corporation. A Commission questionnaire was sent to Ulba, and additional information was made available by Ulba's counsel. Data received on inventories and shipments are presented in table VII-1.

Table VII-1

Beryllium metal: Kazakhstan's capacity, production, inventories, capacity utilization, and shipments, 1993-95, Jan.-Sept. 1995, Jan.-Sept. 1996, and projected 1996-97

* * * * *

Ulba is a large producer of other metal products, including uranium and rare earth metals. The entire complex employs over 5,000 people.¹ In 1995, sales of the subject products accounted for *** percent of Ulba's total sales.

A fire damaged part of the Ulba plant in 1990. Reportedly, the accident occurred in the beryllium powder-making section of the plant. A delegation from the United States visited the Ulba plant in 1992 and described most of the equipment as old and antiquated, and the plant as lacking in environmental controls. However, the beryllium products were considered high quality. The plant also has downstream processing capacity, including machining and forging equipment.

Ulba has not produced subject products since 1993, and does not plan to restart production. To restart production, Ulba estimates it would take 1½ years² and an investment of ***.³ The company does not have operational commercial-scale capacity to produce high-beryllium alloys, although the equipment for making these alloys is on-site.⁴ In 1994, Ulba began *** because of the absence of a market for beryllium materials.⁵ Ulba representatives expect ***.⁶ According to ***, the beryllium metal section of the plant was not in operation; a building for producing beryllium blocks/billets was constructed, but no machinery was in

¹ U.S. Department of Commerce, *National Security Assessment of the U.S. Beryllium Sector*, May 1993.

² Hearing transcript, p. 192.

³ If this investment were made, Ulba estimates that the plant's capacity would be approximately *** pounds of beryllium vacuum-cast ingots per year. (Letter from Shearman & Sterling, Apr. 16, 1996.)

⁴ It purchased this equipment in 1992, but installation is only ***. (Conversation with ***, BMI, Apr. 9, 1996.)

⁵ Foreign producer's questionnaire, p. 2.

⁶ Letter from Shearman & Sterling, Apr. 16, 1996.

place; and beryllium powder-making equipment was on site but not operating.⁷ The plant is currently producing aluminum and copper low-beryllium alloy ingots, and the same equipment could be used to produce high-beryllium alloys.⁸ Ulba is ***.⁹

The Ulba plant, when it was producing subject products, used beryl ore, most of which came from mines in Russia.¹⁰ In 1990, the mine production of beryl ore in Russia was about 168,000 pounds of contained beryllium; however, production was probably considerably higher in past years before the breakup of the Soviet Union.¹¹ About 80 percent of mine production was used for the production of beryllium metal, and most was used by the military. Most beryllium fabricators are in Russia, near defense industry sites. Currently, there are no exports of beryllium metal or high-beryllium alloys to Russia, although some low-beryllium alloy material is exported to Russia.¹²

The Ulba plant has received compensation from the United States because of cooperation in the removal from Kazakhstan of 600 kilograms of weapons-grade uranium.¹³ This material was purchased under a U.S. program designed to prevent the proliferation of nuclear weapons. To compensate Kazakhstan for its cooperation, funds have been given to the country, and a grant of \$*** in additional funding will be provided in the near future ***.¹⁴ Counsel for Ulba and KATEP reported that *** of this grant will be used to ***.¹⁵ ***. The core focus of the ***.

*** stated that a 3-year R&D plan is expected to be completed by the spring of 1997, and the goal is to develop production capability for new beryllium and beryllium alloy products at the Ulba site.¹⁶ Although the plan is not completed, it will likely not restrict which beryllium-containing products will be included in the scope of the research, and the grant money could potentially be used to develop and commercialize beryllium metal, high-beryllium and low-beryllium alloys, and ceramic products, including products in wrought, cast, foil, and coating forms.¹⁷ ***.¹⁸

The Ulba plant has a large inventory of subject beryllium products; approximately *** pounds of vacuum-cast ingots were stockpiled as of the end of the subject period. Another *** pounds of nonpedigreed beryllium block is at the plant, as is *** pounds of beryllium scrap. During the subject period, Ulba exported *** pounds of pedigreed beryllium metal ingot lump to the United States, and *** pounds to other countries (***). In addition, Ulba exported *** pounds of what it termed beryllium scrap to the United States in 1995; however, *** pounds was of nonpedigreed ingot/ingot lump and block/blank that the Commission determined

⁷ Petitioner claims, based on Ulba plant visits in 1990 and 1992, that the plant can produce beryllium powders, and could produce high-beryllium-aluminum powders using new gas-atomizing equipment within 3 months. Also, the plant had operational block/billet production facilities. (Brush Wellman posthearing brief, at tab 10.)

⁸ Conversation with ***, Dec. 16, 1996.

⁹ Conversation with ***, Jan. 28, 1997.

¹⁰ Judith Chegwidden, "Beryllium," *Metals & Minerals: Annual Review 1994* (London: The Mining Journal Ltd., 1995), p. 71. At the Commission's hearing, Gordon Harnett, President and Chief Executive Officer, Brush Wellman, stated the stockpile of ore at the plant site is equivalent to 10 times the amount consumed in the United States in 1995. (Hearing transcript, p. 21.)

¹¹ U.S. Department of Commerce, *National Security Assessment of the U.S. Beryllium Sector*, May 1993.

¹² Conversation with ***, Apr. 9, 1996.

¹³ Shearman & Sterling memorandum to Bonnie Noreen, Jan. 31, 1997.

¹⁴ Notes from State Dept. meeting, Mar. 22, 1996. ***. (Staff conversation with *** of the State Dept., May 3, 1996.)

¹⁵ Shearman & Sterling memorandum to Bonnie Noreen, Jan. 31, 1997. ***. Counsel also reported that ***.

¹⁶ Conversation with ***, Dec. 16, 1996.

¹⁷ Conversation with ***, Jan. 28, 1997.

¹⁸ Shearman & Sterling memorandum to Bonnie Noreen, Jan. 31, 1997.

was in subject product forms. This "scrap" went to the Spindrift Co., and was considered "scrap" by Spindrift because of deficient chemistry and mechanical properties and, in some cases, surface and internal defects that rendered it unacceptable to the original customer.¹⁹ ***.

The Government of Kazakstan and Scanburg, A.B., a Swedish company, have agreements involving the use of the Kazakstani beryllium metal ingot inventories. ***. Under these agreements, all of the inventory will be transferred to Sweden. In its questionnaire response, Ulba reported that *** pounds of the inventory has been exported to Sweden.²⁰ A letter from a Scanburg representative reports that *** pounds of Kazakstani beryllium arrived in Sweden on January 11, 1996.²¹ The primary purpose of placing the inventory in Sweden is ***. *** allows Scanburg to market the beryllium.^{22 23}

Commission questionnaires asked importers if they had imported or arranged for the importation of subject products from Kazakstan for delivery after September 30, 1996. In their questionnaire responses, both *** reported that they had neither imported nor had plans to import subject products. However, ***.²⁴

There is no indication that beryllium metal or high-beryllium alloys from Kazakstan have been the subject of any other import relief investigations, including antidumping findings or remedies, in the United States or in any other countries.

U.S. IMPORTERS' INVENTORIES

Inventories of subject imports are presented in table VII-2; during the period of investigation, such inventories were mostly of the nonpedigreed blocks/blanks that are being marketed by Spindrift. BMI reported that it had ***. *** does not maintain inventories of any of the *** imported from ***, and Spindrift has ***.

Table VII-2

Beryllium metal: End-of-period inventories of U.S. importers, by sources, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

¹⁹ Letter from Shearman & Sterling, Apr. 16, 1996.

²⁰ ***.

²¹ Letter from Scanburg dated Jan. 5, 1997.

²² Letter from ***. ***.

²³ ***. (Conversations with *** , Dec. 4, 1997, and Jan. 21, 1997, and with *** , Jan. 31, 1997.) In a Jan. 5, 1997 letter, ***. ***. (Memorandum from *** , Jan. 31, 1997.)

²⁴ Letter fom *** , and conversation with ***. Customs officials state that this material was ***.

APPENDIX A
***FEDERAL REGISTER* NOTICES**

[Investigation No. 731-TA-746 (Final)]

Beryllium Metal and High-Beryllium Alloys From Kazakhstan

AGENCY: United States International Trade Commission.

ACTION: Scheduling of the final phase of an antidumping investigation.

SUMMARY: The Commission hereby gives notice of the scheduling of the final phase of antidumping investigation No. 731-TA-746 (Final) under section 735(b) of the Tariff Act of 1930 (19 U.S.C. 1673d(b)) (the Act) to determine whether an industry in the United States is materially injured or threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of less-than-fair-value imports from Kazakhstan of beryllium metal and high-beryllium alloys.¹

¹ The imported products covered by this investigation consist of beryllium metal and high-beryllium alloys with a beryllium content equal to or greater than 30 percent by weight, whether in ingot, billet, powder, block, lump, chunk, blank, or other semifinished form. These are intermediate or semifinished products that require further machining, casting and/or fabricating into sheet, extrusions, forgings or other shapes in order to meet the specifications of the end user. Beryllium metal and alloys in which beryllium predominates by weight are provided for in subheadings 8112.11.30 and 8112.11.60 of the Harmonized Tariff Schedule of the United States (HTS). Other alloys containing beryllium are provided for elsewhere in the HTS—e.g., aluminum-beryllium alloys are provided for in

Continued

For further information concerning the conduct of this phase of the investigation, hearing procedures, and rules of general application, consult the Commission's Rules of Practice and Procedure, part 201, subparts A through E (19 CFR part 201), and part 207, subparts A and C (19 CFR part 207), as amended by 61 FR 37818, July 22, 1996.

EFFECTIVE DATE: August 26, 1996.

FOR FURTHER INFORMATION CONTACT:

Bonnie Noreen (202-205-3167), Office of Investigations, U.S. International Trade Commission, 500 E Street SW, Washington, DC 20436. Hearing-impaired persons can obtain information on this matter by contacting the Commission's TDD terminal on 202-205-1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202-205-2000. General information concerning the Commission may also be obtained by accessing its internet server (<http://www.usitc.gov> or <ftp://ftp.usitc.gov>).

SUPPLEMENTARY INFORMATION:

Background.—The final phase of this investigation is being scheduled as a result of an affirmative preliminary determination by the Department of Commerce that imports of beryllium metal and high-beryllium alloys from Kazakhstan are being, or are likely to be, sold in the United States at less than fair value within the meaning of section 733 of the Act (19 U.S.C. 1673b). The investigation was requested in a petition filed on March 14, 1996, by Brush Wellman Inc., Cleveland, OH.

Participation in the investigations and public service list.—Persons, including industrial users of the subject merchandise and, if the merchandise is sold at the retail level, representative consumer organizations, wishing to participate in the final phase of this investigation as parties must file an entry of appearance with the Secretary to the Commission, as provided in section 201.11 of the Commission's rules, no later than 21 days prior to the hearing date specified in this notice. A party that filed a notice of appearance during the preliminary phase of the investigation need not file an additional notice of appearance during this final phase. The Secretary will maintain a public service list containing the names and addresses of all persons, or their

representatives, who are parties to the investigation.

Limited disclosure of business proprietary information (BPI) under an administrative protective order (APO) and BPI service list.—Pursuant to section 207.7(a) of the Commission's rules, the Secretary will make BPI gathered in the final phase of this investigation available to authorized applicants under the APO issued in the investigation, provided that the application is made no later than 21 days prior to the hearing date specified in this notice. Authorized applicants must represent interested parties, as defined by 19 U.S.C. 1677(9), who are parties to the investigations. A party granted access to BPI in the preliminary phase of the investigation need not reapply for such access. A separate service list will be maintained by the Secretary for those parties authorized to receive BPI under the APO.

Staff report.—The prehearing staff report in the final phase of this investigation will be placed in the nonpublic record on January 6, 1997, and a public version will be issued thereafter, pursuant to section 207.22 of the Commission's rules.

Hearing.—The Commission will hold a hearing in connection with the final phase of this investigation beginning at 9:30 a.m. on January 22, 1997, at the U.S. International Trade Commission Building. Requests to appear at the hearing should be filed in writing with the Secretary to the Commission on or before January 13, 1997. A nonparty who has testimony that may aid the Commission's deliberations may request permission to present a short statement at the hearing. All parties and nonparties desiring to appear at the hearing and make oral presentations should attend a prehearing conference to be held at 9:30 a.m. on January 16, 1997, at the U.S. International Trade Commission Building. Oral testimony and written materials to be submitted at the public hearing are governed by sections 201.6(b)(2), 201.13(f), and 207.24 of the Commission's rules. Parties must submit any request to present a portion of their hearing testimony *in camera* no later than 7 days prior to the date of the hearing.

Written submissions.—Each party who is an interested party shall submit a prehearing brief to the Commission. Prehearing briefs must conform with the provisions of section 207.23 of the Commission's rules; the deadline for filing is January 14, 1997. Parties may also file written testimony in connection with their presentation at the hearing, as provided in section 207.24 of the Commission's rules, and posthearing

briefs, which must conform with the provisions of section 207.25 of the Commission's rules. The deadline for filing posthearing briefs is January 28, 1997; witness testimony must be filed no later than three days before the hearing. In addition, any person who has not entered an appearance as a party to the investigation may submit a written statement of information pertinent to the subject of the investigations on or before January 28, 1997. On February 7, 1997, the Commission will make available to parties all information on which they have not had an opportunity to comment. Parties may submit final comments on this information on or before February 11, 1997, but such final comments must not contain new factual information and must otherwise comply with section 207.30 of the Commission's rules. All written submissions must conform with the provisions of section 201.8 of the Commission's rules; any submissions that contain BPI must also conform with the requirements of sections 201.6, 207.3, and 207.7 of the Commission's rules.

In accordance with sections 201.16(c) and 207.3 of the Commission's rules, each document filed by a party to the investigation must be served on all other parties to the investigation (as identified by either the public or BPI service list), and a certificate of service must be timely filed. The Secretary will not accept a document for filing without a certificate of service.

Authority: This investigation is being conducted under authority of title VII of the Tariff Act of 1930; this notice is published pursuant to section 207.21 of the Commission's rules.

Issued: September 13, 1996.

By order of the Commission.

Donna R. Koehnke,
Secretary.

[FR Doc. 96-24022 Filed 9-18-96; 8:45 am]

BILLING CODE 7020-02-P

HTS subheading 7601.20.90. In its notice, Commerce stated "[a]lthough the HTS subheading is provided for convenience and customs purposes, our written description of the scope of this investigation is dispositive."

[A-834-805]

**Notice of Final Determination of Sales
at Less Than Fair Value: Beryllium
Metal and High Beryllium Alloys From
the Republic of Kazakhstan**

AGENCY: Import Administration,
International Trade Administration,
Department of Commerce.

EFFECTIVE DATE: January 17, 1997.

FOR FURTHER INFORMATION CONTACT:
Dorothy Tomaszewski at (202) 482-
0631, or Erik Warga at (202) 482-0922,
Office of Antidumping Investigations,
Import Administration, International

Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue, NW., Washington, DC. 20230.

Applicable Statute and Regulations

Unless otherwise indicated, all citations to the statute are references to the provisions effective January 1, 1995, the effective date of the amendments made to the Tariff Act of 1930 ("the Act") by the Uruguay Rounds Agreements Act ("URAA"). In addition, unless otherwise indicated, all citations to the Department regulations are to the current regulations, as amended by the interim regulations, published in the Federal Register on May 11, 1995 (60 FR 25130).

Final Determination

We determine that beryllium metal and high beryllium alloys ("beryllium") from the Republic of Kazakhstan ("Kazakstan") are being sold in the United States at less than fair value ("LTFV"), as provided in section 735 of the Tariff Act of 1930, as amended ("the Act"). The estimated margins are shown in the "Suspension of Liquidation" section of this notice.

Case History

Since the preliminary determination on August 21, 1996 (61 FR 44293, August 28, 1996 ("preliminary determination")), the following events have occurred:

In October 1996, we verified the respondents' questionnaire responses. Additional publicly available information on surrogate values was submitted by petitioner and respondents on November 15, 1996, and November 22, 1996. Petitioner and respondents submitted case briefs on November 29, 1996 and rebuttal briefs on December 6, 1996. A public hearing was held on December 9, 1996. At the Department's request, additional information was filed by petitioner and respondents on December 10, 1996, and December 12, 1996. On December 19, 1996, and December 23, 1996, the Department received surrogate factor data from the Foreign Commercial Service Office in Lima, Peru.

Scope of Investigation

The scope of this investigation is beryllium metal and high beryllium alloys with a beryllium content equal to or greater than 30 percent by weight, whether in ingot, billet, powder, block, lump, chunk, blank, or other semifinished form. These are intermediate or semifinished products that require further machining, casting and/or fabricating into sheet, extrusions,

forgings or other shapes in order to meet the specifications of the end user.

Beryllium and high beryllium alloys within the scope of this investigation are classifiable under the Harmonized Tariff Schedule of the United States ("HTSUS") 8112.11.6000, 8112.11.3000, 7601.20.9075, and 7601.20.9090.

Although the HTSUS subheadings are provided for convenience and customs purposes, our written description of the scope of this investigation is dispositive.

Period of Investigation

The period of investigation ("POI") is July 1, 1995, through December 31, 1995.

Separate Rates

Respondents made no claim for receiving a separate rate. Therefore, lacking any information to support a conclusion that a separate rate is appropriate, the Department assigned a single Kazakstan-wide rate to all producers and exporters.

Fair Value Comparisons

To determine whether sales of beryllium from Kazakstan to the United States were made at less than fair value, we compared Export Price ("EP") to the Normal Value ("NV"), as specified in the "Export Price" and "Normal Value" sections of this notice.

Export Price

We calculated EP in accordance with section 772(a) of the Act, because the subject merchandise was sold directly to the first unaffiliated purchaser in the United States prior to importation. Although respondents have a U.S. subsidiary, Beryllium Metals International Ltd. ("BMI"), calculation of constructed export price ("CEP") under section 772(b) is not otherwise warranted for purposes of the final determination based on the facts of this investigation. It has been the Department's longstanding and well-recognized practice that a transaction will be considered an export price sale, despite the involvement of an affiliate in the United States where: (1) The merchandise in question was shipped directly from the manufacturer to the unrelated buyer, without being introduced into the physical inventory of the related selling agent; (2) this was the customary commercial channel for sales of this merchandise between the parties involved; and (3) the related selling agent in the United States acted only as a processor of documentation and a communication link with the unrelated buyer. (See, e.g., *Final Determination of Sales at Less Than Fair Value: Large Newspaper Printing*

Presses and Components Thereof, Whether Assembled or Unassembled, From Germany (61 FR 38166, 38175, July 23, 1996)). Verification findings confirm that the merchandise is not taken into the physical inventory of the U.S. subsidiary. Because there has only been one sale, we conclude that there is no "customary commercial channel." Therefore, we are continuing to disregard this criterion for purposes of this final determination. Finally, verification findings confirmed the limits on BMI's authority to finalize sales and that BMI is acting solely as a processor of documentation and communications link (see November 8, 1996, verification report at page 6). Therefore, we conclude that the sale in question is properly characterized as an EP sale.

We calculated EP based on packed, CIF U.S. port prices to unaffiliated purchasers in the United States, as appropriate, based on the same methodologies in the preliminary determination with the following exceptions: we made minor corrections to certain movement charges pursuant to verification findings.

Normal Value

When the Department is investigating imports from a non-market economy ("NME"), section 773(c)(1) of the Act directs us to base NV on the NME producer's factors of production, valued in a comparable market economy that is a significant producer of comparable merchandise. Therefore, as in the preliminary determination, we calculated NV based on factors of production reported by the Kazak Joint-Stock Company of Ulba Metallurgical Plant ("Ulba"), the sole Kazakstani producer of subject merchandise.

To calculate NV, the verified per-unit factor quantities were first multiplied by Peru values; the resulting products were then summed. We then added amounts for overhead, general expenses (including interest) ("SG&A"), profit, and, packing expenses incident to placing the merchandise in condition packed and ready for shipment to the United States.

We made adjustments to the reported factors of production to reflect actual production experience for 1991 and 1993, based on verification findings.

Valuation of Factors

As in our preliminary determination, we have relied on Peru as the primary surrogate country in accordance with section 773(c)(4) of the Act. Accordingly, we have continued to calculate NV using Peru prices for the Kazakstani producer's factors of

production. We have obtained and relied on publicly-available information wherever possible.

Except as noted below, we applied surrogate values to the factors of production in the same manner as in our preliminary determination. For a complete discussion of surrogate values, see the *Calculation Memorandum*, dated January 10, 1996. Surrogate overhead was based on the experience of a silicomanganese producer in Brazil; SG&A and profit were based on the experience of an aluminum producer in Peru; and packing expenses were based on 1995 Peru import statistics data.

Kazakstan-Wide Rate

Kazakstan identified what we believe to be the only Kazakstani exporter, Kazak Joint-Stock Company of Atomic Energy and Industry ("KATEP"), and producer, Ulba, that sold beryllium to the United States during the POI. Both have responded in this investigation. We compared the respondents' sales data with U.S. import statistics for time periods including the POI and found no indication of unreported sales. Accordingly, we have based the Kazakstan-wide rate on the weighted-average of the margins calculated in this proceeding, excluding zero or de minimis margins, if any.

Verification

As provided in section 776(b) of the Act, we verified the information submitted by respondents for use in our final determination. We used standard verification procedures, including examination of relevant accounting and production records and original source documents provided by respondents.

Interested Party Comments

Comment 1: Use of Respondents' Verified Data

Petitioner argues that the discrepancies uncovered at verification between the factor information submitted and the factor information verified, as well as the discovery of information never reported, would support a decision by the Department to reject respondents' data in favor of basing the final determination on facts otherwise available (*i.e.*, the information submitted in the petition).

Respondents assert that the Department has no basis for rejecting its sales and factors of production information on the record. According to respondents, all sales and production data were submitted in a timely manner to the Department and verified. While its reported factor data was modified during verification, respondents argue

that these revisions should not be rejected as "untimely" because the revisions were a result of adjusting reported standard factor input information to reflect actual factor input information. Finally, respondents argue that even if its revised factor information was deemed untimely, the verified data should nevertheless be used as "facts otherwise available."

DOC Position

Certain minor discrepancies in respondents' reported sales and factors of production data were discovered during verification. While the Department is always concerned over such discrepancies, we did not identify any attempt to mislead the Department or to distort information on the record, nor does the record indicate that respondents did not cooperate to the best of their ability. Accordingly, such errors will be corrected individually by the Department using revised information and do not warrant an overall application of adverse facts available for the final determination. (See, *e.g.*, *Certain Corrosion-Resistant Carbon Steel Flat Products from Korea: Final Results of Antidumping Duty Administrative Review* 61 FR 18558 (April 26, 1996).) The details of these errors and steps taken to correct them are set forth in the January 10, 1997, *Final Determination Calculation Memorandum*.

Comment 2: Selection of Appropriate Surrogate Country

Petitioner argues that the Department should select Brazil as the primary surrogate country because (1) Brazil is comparable to Kazakstan in economic development and (2) Brazil is one of the few sources of the primary factor input required in the production of beryllium, beryl ore.

Respondents counter that, since the preliminary determination, no new information has been placed on the record to justify the change in the surrogate country for Kazakstan from Peru to Brazil.

DOC Position

We agree with respondents and continue to use Peru as the primary surrogate country for purposes of valuating Kazakstan's factors of production. Section 773(c)(4) of the Act requires the Department to value the NME producer's factors of production, to the extent possible, in one or more market economy countries that: (1) Are at a level of economic development comparable to that of the NME and (2) are significant producers of comparable merchandise. As noted in the

preliminary determination, Peru is at a level of economic development comparable to Kazakstan in terms of per-capita gross national product ("GNP") levels and distribution of the labor force in the varying sectors of the economy. Brazil's 1993 per-capita annual income was \$2930 versus \$1560 for Kazakstan and \$1490 for Peru. Even though Brazil is endowed with the primary material input (beryl ore) used to produce beryllium, Brazil does not produce beryllium.

As discussed in the preliminary determination, none of the potential surrogate countries produces merchandise comparable to the subject merchandise. Indeed, Kazakstan and the United States are the only known producers of beryllium. Absent information on a market economy country which produces beryllium and is at a level of economic development comparable to that of Kazakstan, the Department continues to use Peru as the primary surrogate country based on its comparable level of economic development for purposes of the final determination.

Comment 3: Use of 1995 Surrogate Country Factor Data

Respondents argue that the Department must determine whether the factor values based on the 1995 UN data are broadly consistent with other measures of market value to ensure that the factor values used in the final margin calculation constitute a reasonable representation of the costs that a NME producer would face if it were to produce in a market economy. In particular, respondents identify five Peru values used in the preliminary determination which they allege to be unreasonable when compared to various broader benchmarks.

Petitioner notes that if the Department were to perform such an exercise, this analysis should be applied in a consistent manner for all direct material factors.

DOC Position

For the final determination, we have used Peru import statistics based on 1995 UN trade data as the primary source of surrogate factor values. The Department's analysis indicates, however, that several factor values derived from the 1995 Peru import statistics appear to be not reasonable. For example, the unit value based on 1995 Peru import statistics for one material factor is over twenty times the weighted-average unit value based on import statistics from the five countries identified by the Department as

appropriate surrogates for Kazakhstan (see preliminary determination).

In order to assess whether material factor values derived from the 1995 Peru import statistics are reasonable for the purpose of approximating the factor costs in Kazakhstan, we compared all 1995 Peru material values to the weighted-average unit value based on import statistics from all five appropriate surrogate countries (see June 10, 1996, *Memorandum from David Mueller, Director, Office of Policy, to Gary Taverman, Division I Director, Office of Antidumping Investigations*). Where differences between the unit value figures appeared unreasonable, we resorted to the weighted-average based on the five surrogate countries' data. (See January 10, 1996, *Calculation Memorandum* for further details).

Comment 4: Time Period for Factors of Production

Respondents state that Ulba produced the subject merchandise through 1991 and had several months of production of subject merchandise in 1993; however, Ulba ceased production of subject merchandise at the end of 1993. Respondents note that the factors of production used in 1991 differ from those used in 1993. Under these circumstances, respondents argue that the Department should use 1991 factor input data to calculate normal value because 1991 data reflects input usages applied for an entire year of uninterrupted production and, therefore, better reflects actual production experience. Respondents also contend that 1991 data be used because it is closest to the year that the subject merchandise sold during the POI was produced. In contrast, respondents argue, 1993 factor data (the last calendar year in which there was significant production) is an unreliable indicator of respondents' production process because the Kazakstani production facility was in the process of shutting down; therefore, the 1993 usages were unusually high when compared to usage rates during previous years.

Petitioner argues that the Department should use the 1993 data because these factor quantities best reflect the factors that respondents would have used if they had produced beryllium during the POI. Petitioner asserts that contemporaneity is an important factor in determining which year's factors to use. According to petitioner, the fact that production data for 1993 reflects higher usage levels in comparison to 1991 is not a result of irregular production for that year; rather, it is the particular chemistry of inputs used in any particular year that will affect input

usage. Therefore, petitioner maintains that the factors of production should be based on the production information closest in time to the POI—1993.

DOC Position

The subject merchandise sold to the United States during the POI was produced long before the POI (although the actual time period of production is unknown). Not only is it unclear when the merchandise imported during the POI was produced, there is no evidence of which factors were used. Therefore, we must choose between the two years for which we have factor information, both of which are long removed from the period of production.

Where necessary information is not available on the record, and where a respondent has cooperated to the best of its ability, Section 776 of the Act directs the Department to use non-adverse facts available in place of unavailable information. In these circumstances, we do find it significant that the 1993 period is closer in time to the POI. Therefore, we determine that the use of 1993 factor input data is appropriate in calculating normal value.

Comment 5: Overhead and SG&A

Petitioner contends that its production experience as a beryllium producer is the only reasonable basis on which to value factory overhead and SG&A for a beryllium producer. In support of this argument, petitioner notes that (1) no data exists for either factory overhead or SG&A from a Peru producer of subject merchandise and (2) the Department determined that there is no other product comparable to beryllium in terms of production processes or inputs. Given these circumstances, petitioner asserts that the only market-economy producer of beryllium available for valuing these costs is the U.S. producer (*i.e.*, petitioner).

Additionally, petitioner argues that its overhead costs do not account for expenses incurred for certain materials used by respondents, although the Department believed these expenses were included in the petitioner's overhead rate for the preliminary determination. Finally, petitioner contends that the Department should adjust petitioner's reported overhead rate to account for capacity and utilization.

Respondents counter that the information on the record concerning petitioner's calculation of its overhead and SG&A rates confirms that the factory overhead and SG&A rates that petitioner reported are unreasonably high. According to respondents, it

appears that petitioner's calculation of its overhead and SG&A rates included line item expenses irrelevant to the production of subject merchandise. In the event that the Department decides to use petitioner's information, respondents recommend that the Department consider (1) the clerical error noted by petitioner in calculating its overhead rate and (2) the respondents' revised calculation of the SG&A rate based on petitioner's financial data for 1994 and 1995.

DOC Position

In evaluating appropriate surrogate factor rates for SG&A and overhead, it is important to note that information does not exist on overhead and SG&A figures from a beryllium producer in a country that is economically comparable to Kazakhstan. As discussed above and in the preliminary determination, the only known beryllium producer in the world, other than the Kazakstani producer, is the U.S. petitioner. The Department's regulations provide clear instructions that U.S. surrogate values are to serve only as a last resort (see 19 CFR 353.52(b)). This is true even when such values are not available from an industry producing the same merchandise (see 19 CFR 353.52(b)(1)).

Given that the only source of industry-specific overhead and SG&A rates is the petitioner, we considered the economic comparability of the surrogate country to Kazakhstan an important criterion for selecting appropriate surrogate factor data to approximate Kazakhstan's overhead and SG&A rates. While the specific processes differ, the complexity and duration of the production processes for different light metals are comparable and thus, unlikely to generate differences in overhead and SG&A between the beryllium industry and other light metals industries. Therefore, in this case, we determine that overhead and SG&A figures based on production experience of a light metal industry (*e.g.*, aluminum, silicomanganese) in an appropriate surrogate country are a reasonable approximation of Kazakhstan's overhead and SG&A costs incurred in the production of beryllium. For SG&A and profit, we applied ratios based on financial data from a Peru aluminum producer. Absent detailed overhead data from Peru, we applied an overhead ratio based on financial data from a silicomanganese producer in Brazil for the final determination. While Brazil, as noted earlier, is not among the five countries most similar to Kazakhstan in terms of economic development, we determine that it is comparable, and far

more similar to Kazakhstan than is the United States. Moreover, the regulations, at 19 CFR 353.52(b)(2), indicate that even a foreign country which is not a level of economic development comparable to the home market country is preferable to the United States as a source of surrogate value information.

Comment 6: Basket-Product-Category Import Statistics

Petitioner contends that the Department should apply product-specific world-market prices to value beryllium-containing material inputs rather than data on Peru imports under broad basket categories. Because there is no beryllium producer or beryllium industry in Peru, petitioner notes that it is highly unlikely that Peru import statistics used to value beryllium-containing material inputs in the preliminary determination contain any imports of beryllium-containing materials. Instead, petitioner recommends the use of world market prices based on U.S. import statistics which provide more representative values available for the beryllium-containing inputs.

Respondents counter that the Department should reject petitioner's alternative source of data to calculate surrogate values for beryllium-containing materials. According to respondents, the Department's policy and practice provide no justification to abandon data obtained from the primary surrogate country because some alternative country (i.e., the United States) offers more product-specific price information. Further, with respect to the U.S. Geological Survey ("USGS") data used to value beryl ore in the preliminary determination, respondents maintain that petitioner did not provide any reason to question the accuracy of this data source. Therefore, respondents recommend continued use of USGS data for valuing beryl ore in the final determination.

DOC Position

We agree, in part, with petitioner. For those beryllium-containing inputs for which we used UN import statistics based on basket product-categories in the preliminary determination, we used for the final determination 1995 import statistics from the European Union with more product-specific categories as data which more accurately reflects the values for these inputs.

With respect to the USGS value for beryl ore, the unit value based on USGS data is specific to the particular material input used in the production process. Further, there is no information on the

record to dispute the validity of this data. Therefore, we continued to rely on the USGS data for valuing beryl ore in the final determination.

Comment 7: Incorrect Surrogate Values for Certain Material Inputs

Petitioner contends that the Department incorrectly valued a certain material input using import data for a different material. For the final determination, petitioner urges the Department to use 1994 U.S. data specific to the material input in question to value the material input.

DOC Position

We agree, in part, with petitioner. Verification findings indicated that two varying types of the material in question were used in the production of beryllium from Kazakhstan. It was possible to identify product categories that correspond to each type of material input. Given that data corresponding to the materials from the primary surrogate country is available for consideration, the use of U.S. data suggested by petitioner was not required. Therefore, for the final determination, we are valuing the two material inputs based on 1995 Peru import data with corresponding product categories.

Comment 8: Adjustment to the Surrogate Labor Rate

Petitioner contends that the surrogate labor rate used in the preliminary determination was understated and should be adjusted to account for (1) normal hours and days worked in Peru; (2) salary bonuses mandated by law in Peru; and (3) a skilled level of labor, as used in the beryllium industry in Kazakhstan.

DOC Position

We agree with petitioner and have adjusted the labor rate used at the preliminary determination to account for (1) normal hours and days worked in Peru and (2) annual salary bonuses mandated by law. As noted in Price Waterhouse's publication, *Doing Business in Peru*, eight hours is a normal work day in Peru with a work week not exceeding 48.11 hours. In order to avoid overstating the number of hours worked per day, we based our calculation of number of hours worked per day on a six-day work week to reflect an eight-hour work day. Additionally, annual salary bonuses mandated by Peruvian law were not reflected in the labor rate used in the preliminary determination. Therefore, we are also adjusting the labor rate in the final determination to reflect this portion of labor cost.

However, we continued to use the International Labor Organization's ("ILO") earnings per day rate as the base for the labor rate because it is a labor rate for manufacturing specific to the non-ferrous basic metal industry in Peru. The Price Waterhouse "skilled" average monthly wages in Peru, recommended by petitioner as a preferable rate to the ILO rate because it is a skilled labor rate, is not specific to any industry. Further, it is not clear whether the average monthly wages are gross or net of employee contributions; it is clear from information on the record that the ILO rate reflects gross earnings (i.e., employee's contributions are included in this earnings figure). Therefore, we continued to use the ILO rate as the base labor rate for the final determination.

Comment 9: Circumstance-of-Sale Adjustments

Petitioner contends that the Department is required by the Act to adjust normal value to account for differences in circumstances of sale. In particular, petitioner argues that imputed credit expenses and the value of a price markup between the Kazakstani producer and its U.S. subsidiary should be added to NV.

Respondents counter that verification findings show that payment for the reported sale was received from the U.S. customer in advance of the payment terms agreed to in the sales contract; therefore, there is no basis on which to calculate imputed credit expenses for the reported U.S. sales transactions. Additionally, respondents assert that petitioner's request to adjust NV to account for an alleged commission payment should also be denied because there is no evidence on the record that a commission was made at arm's length.

DOC Position

We agree with respondents. Section 773 (a) (6) (C) of the Act allows NV to be increased or decreased for differences in circumstances of sale as long as "it has been established to the satisfaction of the administering authority" that such adjustments are warranted. (See, also *Notice of Final Determination: Bicycles from the PRC*, 61 FR 19031, 19032 (April 30, 1996)).

An adjustment to NV for imputed credit expense is not warranted in this case. Because such expenses are usually included in the financial statements used as the basis for calculating SG&A, it is assumed any credit expense is captured in the SG&A figure calculated under the factors of production methodology, unless demonstrated otherwise. (See, *Sulfanilic Acid from the*

PRC: Final Results and Partial Rescission of Antidumping Duty Administrative Review, 61 FR 53702, 53709 (1996) and *Final Determination of Sales at Less Than Fair Value: Helical Spring Lock Washers from the PRC*, 58 FR 48833, 48839 (1993)).

Further, the price markup reflected in sales invoice documentation between the Kazakstani producer and its U.S. subsidiary is considered an intra-company transfer and does not warrant any adjustment to NV. As respondents correctly note, the Department generally allows adjustments only for commission payments to unaffiliated parties; however, in this case, the Kazakstani producer and the U.S. subsidiary are considered to be affiliated parties for purposes of this investigation. (See, also, *Federal Mogul Corp. v. United States*, 918 F. Supp. 386, 413-414 (CIT 1996)). Therefore, no adjustment to NV for commissions is warranted because the record does not provide any information to suggest that any commission payment from the Kazakstani producer to its U.S. subsidiary was made at arm's length.

Comment 10: U.S. Sales Transactions in the Final Margin Calculation

Petitioner asserts that all U.S. sales transactions involving Kazakstani beryllium invoiced and shipped during the POI should be included in the final margin calculation. In particular, petitioner argues that the Department should continue to consider the sale of certain off-specification beryllium as part of the reported U.S. sale transaction because verification findings confirmed that the price adjustments at issue were post-sale price adjustments, rather than new sales occurring outside the POI. In support of this argument, petitioner notes that respondents stated for the record that the date of sale was unaffected by any modifications to the sale contract after shipment. Finally, petitioner argues that the Department should include the unreported U.S. sales transaction discovered at verification.

Respondents assert that the sale of the off-specification material did not meet the specifications of the sales contract within the POI but was only shipped at the same time as the POI contract's merchandise. According to respondents, because of the lengthy negotiations following the shipment of the off-specification merchandise, the final sale (and agreement to price) of this merchandise was not formally concluded until after the POI.

Additionally, respondents argue that the unreported U.S. sale discovered at verification constitutes a sample

shipment of insignificant quantity of merchandise outside of the scope of the investigation (i.e., not characterized as ingot, billet, powder, lump, chunk, blank, or other semi-finished form). Therefore, respondents recommend the Department to disregard this sale for purposes of the final margin calculation.

DOC Position

We agree with petitioner and continue to include the reported sales of off-specification merchandise with post-sale price adjustments in the final margin calculation. Verification findings indicated that the merchandise in question was sold pursuant to the sales contract and invoice issued during the POI.

With respect to the unreported sale discovered at verification, respondents are correct in characterizing this sale as a transaction of insignificant quantity. Therefore, we have excluded this transaction from the final margin calculation.

Comment 11: Verified International Freight and Customs Expenses

For the final determination, petitioner asserts that the Department should adjust export price for (1) line item expenses omitted from reported international freight charge and (2) under-reported Customs duties payments.

DOC Position

We agree with petitioner and used the verified international freight and Customs duties charges in the final margin calculation.

Comment 12: Inflation Adjustment for Non-Contemporaneous Data

Respondents maintain that in the preliminary determination the Department erred in converting 1994 values to 1995 values by multiplying U.S. dollar-denominated prices by foreign currency inflation rates without adjusting for changes in the value of the foreign currency relative to the U.S. dollar. Respondents argue that, where appropriate, the Department should account for both foreign currency inflation and exchange rate fluctuations.

DOC Position

We agree with respondents and, where appropriate, adjusted factor values to account for both foreign currency inflation and exchange rate fluctuations between the U.S. dollar and the foreign currency.

Continuation of Suspension of Liquidation

In accordance with section 733(d)(1) and 735(c)(4)(B) of the Act, we are directing the Customs Service to continue to suspend liquidation of all entries of beryllium from Kazakstan, that are entered, or withdrawn from warehouse for consumption, on or after August 28, 1996 (the date of publication of the preliminary determination in the Federal Register). The Customs Service shall continue to require a cash deposit or posting of a bond equal to the estimated amount by which the normal value exceeds the export price as shown below. These suspension of liquidation instructions will remain in effect until further notice.

The weighted-average dumping margins are as follows:

Manufacturer/producer/exporter	Margin percentage
Ulba Metallurgical Plant/KATEP	16.56
Kazakstan-Wide Rate	16.56

The Kazakstan-Wide rate applies to all entries of subject merchandise except for entries from exporters that are identified individually above.

ITC Notification

In accordance with section 735(d) of the Act, we have notified the International Trade Commission ("ITC") of our determination. As our final determination is affirmative, the ITC will, within 45 days, determine whether these imports are materially injuring, or threaten material injury to, the U.S. industry. If the ITC determines that material injury, or threat of material injury does not exist, the proceeding will be terminated and all securities posted will be refunded or canceled. If the ITC determines that such injury does exist, the Department will issue an antidumping duty order directing Customs officials to assess antidumping duties on all imports of the subject merchandise entered for consumption on or after the effective date of the suspension of liquidation.

This determination is published pursuant to section 735(d) of the Act.

Dated: January 10, 1997.

Robert LaRussa,

Acting Assistant Secretary for Import Administration.

[FR Doc. 97-1258 Filed 1-16-97; 8:45 am]

BILLING CODE 3510-DS-P

APPENDIX B

WITNESSES APPEARING AT THE PUBLIC HEARING

CALENDAR OF PUBLIC HEARINGS

Those listed below appeared as witnesses at the United States International Trade Commission's hearing:

Subject : BERYLLIUM METAL AND HIGH-BERYLLIUM
ALLOYS FROM KAZAKSTAN

Investigation No. : 731-TA-746 (Final)

Date and Time : January 22, 1997 - 9:30 a.m.

Sessions were held in connection with the investigation in the main hearing room, 500 E Street, SW, Washington, DC.

In Support of the Imposition of Antidumping Duties:

Stewart and Stewart
Washington, DC
on behalf of

Brush Wellman, Inc.

Gordon Harnett, President and Chief Executive Officer

Michael Anderson, Vice President, Beryllium Products

Carl Cramer, Vice President, Finance, and Chief Financial Officer

Robert J. Rozek, Senior Vice President

Hugh D. Hanes, Vice President, Government Affairs

Lawrence H. Ryczek, Director of Business Development, Beryllium Products

Bill Halm, Accounting Manager, Beryllium Products

Tom Parsonage, Director, Market Development

Terence P. Stewart)
James R. Cannon)--OF COUNSEL
Patrick J. McDonough)

In Opposition to the Imposition of Antidumping Duties:

Shearman & Sterling
Washington, DC
on behalf of

Kazakh State Atomic Energy Industrial Corp. (“ KATEP”)
Ulba Metallurgical Kombinat (“ ULBA”)

Robert E. Quinn, President, Nuclear Metals Inc.

Kevin Raftery, Business Unit Manager, Nuclear Metals, Inc.

Joseph Seinberg, Program Manager, Lockheed Martin Electronics and Missile Division,
Lockheed Martin Corp.

Thomas B. Wilner)
Michael J. Chapman)--OF COUNSEL
Aaron Fishman)

APPENDIX C
SUMMARY TABLES

Table C-1

Beryllium metal and high-beryllium alloys: Summary data concerning the U.S. market, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

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Table C-2

Beryllium metal: Summary data concerning the U.S. market, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

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Table C-3

High-beryllium alloys: Summary data concerning the U.S. market, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

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Table C-4

Beryllium hydroxide: Summary data concerning the U.S. market, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

APPENDIX D

ALTERNATIVE APPARENT U.S. CONSUMPTION DATA

Table D-1

Beryllium metal and high-beryllium alloys (alternative scenario): U.S. shipments of domestic product, U.S. shipments of imports from Kazakhstan, and apparent U.S. consumption, by products, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

Table D-2

All beryllium: U.S. shipments of domestic product, U.S. shipments of imports from Kazakhstan, and apparent U.S. consumption, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

Table D-3

All beryllium (alternative scenario): U.S. shipments of domestic product, U.S. shipments of imports from Kazakhstan, and apparent U.S. consumption, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

Table D-4

Beryllium metal and high-beryllium alloys: U.S. commercial shipments of domestic product, U.S. shipments of imports from Kazakhstan, and apparent U.S. commercial consumption, by products, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

Table D-5

Beryllium metal and high-beryllium alloys (alternative scenario): U.S. commercial shipments of domestic product, U.S. shipments of imports from Kazakhstan, and apparent U.S. commercial consumption, by products, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

APPENDIX E

TABLES ON HIGH-BERYLLIUM ALLOY CASTINGS

Table E-1

High-beryllium alloy castings: Summary data concerning Brush Wellman's operations, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

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Table E-2

High-beryllium alloy castings: Summary data concerning Nuclear Metals' operations, fiscal years 1993-96

* * * * *

APPENDIX F
COMPAS MODEL

Methodology

The COMPAS model is a supply and demand model that assumes that domestic and imported products are less than perfect substitutes. Such models, also known as Armington models, are relatively standard in applied trade policy analysis and are used extensively for the analysis of trade policy changes both in partial and general equilibrium. Based on the discussion in part II of this report, the staff selects a range of estimates that represent price-supply, price-demand, and product substitution relationships (i.e., elasticities of supply, demand, and substitution) in the U.S. market for beryllium metal and high-beryllium alloys. The model uses these estimates with data on market shares and Commerce's margin of dumping to analyze the likely effect on the U.S. like product industry of removing the subject imports from Kazakhstan.

Findings

The model examines different scenarios of economic effects that correspond to various combinations of the ranges of elasticities discussed in part II of this report. In addition to the elasticities, inputs into the model include the 1995 domestic market value share of *** percent and the 1995 subject imports share of *** percent for Kazakhstan (table IV-3). There are no nonsubject imports. The results in table F-1 show that in the absence of dumping the U.S. producer's share of the market in 1995 would have been between *** percent and *** percent instead of *** percent, the domestic price would have been *** percent to *** percent higher, domestic output would have been *** percent to *** percent higher, and domestic revenue would have been *** percent to *** percent higher. An additional sets of estimates for an alternative scenario is presented in table F-2. This alternative scenario excludes all of the Spindrift and *** nonpedigreed imports. The market share data for this scenario are available in appendix table D-1.

Table F-1

Beryllium metal and high-beryllium alloys: Estimated effects of LTFV imports from Kazakhstan

* * * * *

Table F-2

Beryllium metal and high-beryllium alloys: Estimated effects of LTFV imports from Kazakhstan (alternative scenario)

* * * * *

APPENDIX G
BRUSH WELLMAN SUPPLEMENTAL DATA

Table G-1
Beryllium metal and high-beryllium alloys: Shipments by Brush Wellman, by products, types, and uses, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

Table G-2
Beryllium metal: Domestic shipments by Brush Wellman, by products and by types, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

Table G-3
Average number of Brush Wellman's production and related workers producing beryllium metal and high-beryllium alloys in its Ohio plant, hours worked, wages paid to such employees, and hourly wages, productivity, and unit labor costs, by products, 1993-95, Jan.-Sept. 1995, and Jan.-Sept. 1996

* * * * *

APPENDIX H

POSTHEARING SUBMISSION BY NUCLEAR METALS



NUCLEAR METALS, INC.

January 30, 1997

Public Version

Ms. Bonnie Noreen
ITC Investigator
International Trade Commission
500 E. Street, S.W.
Washington, DC 20436

Re: Beryllium Metals and High Beryllium Alloys from Kazakhstan:
Investigation No.: 731-TA-746 (Final)

Dear Ms. Noreen:

NMI continues to oppose to the petition filed by Brush Wellman, Inc. in the matter referenced above. NMI submits the following post hearing information as requested by the commission staff.

NMI had procured vacuum cast beryllium lump from the Brush Wellman for over 20 years meeting their internal specification B-26D. This material was used in the production of [***].

In 1988 NMI received a contract from the US Air Force for the development of silicon-beryllium casting alloys. Under this contract NMI procured approximately 1,000 pounds of B-26D vacuum cast material from Brush Wellman to support the program. In 1989 through 1991 NMI had initiated an internal program to manufacture spherical beryllium powders using patented technology developed at NMI. To support this program NMI procured machined vacuum cast beryllium bars from the Brush Wellman Co. which were subsequently converted into spherical metal powders at NMI.

NMI initiated discussions with senior Brush Wellman Management on the production of spherical beryllium powders using NMI's patented technology. [***]. NMI offered Brush Wellman the chance to review the material after NMI processing and the rights to license the technology if they felt the market need would demand spherical powders. NMI had already identified applications and customers and these customers were monitoring NMI's development progress.

The first lot of Brush Wellman supplied machined vacuum cast beryllium ingots were delivered to NMI and converted into powder without any difficulties. The resultant powders were of the lowest oxide levels in powder form of any material in production. On the basis of this early development news, which we shared with Brush Wellman, Inc., NMI began to produce larger quantities of material and characterize the material through powder billet consolidation which would allow mechanical testing. Once again we shared the information with Brush Wellman and procured additional machined vacuum cast ingots. On receipt of the Brush Wellman material, every ingot delivered had severe gas porosity throughout the external and internal surfaces.



NUCLEAR METALS, INC.

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When we contacted Brush Wellman to discuss the problem we were informed that they never provided a guarantee on the internal soundness of the material and this was the only product they would guarantee. NMI had to modify our conversion process to use the material and decreased product yield by over 30% as result. The delivered ingots contained voids of over 25% due to trapped internal gas. This is a problem we had never experience in over 20 years of using the material previously and Brush Wellman would not discuss their process with NMI to identify the process variable which yielded these defects.

NMI again discussed with Brush the potential of working jointly on a program which would have ultimately lead to a license agreement on the production of spherical beryllium powders exclusively for Brush Wellman. Brush Wellman finally concluded that NMI's process did not merit any benefit to their company and opted to pursue spherical beryllium powder using an internal process which they were developing. This process represents gas atomization verses NMI's Plasma Rotating Electrode Process.

NMI had prepared a white paper of our IR&D results for the Air Force for consideration. The Air Force was extremely interested and with NMI developed a program plan worth approximately 2.5 million dollars which would have required approximately 1000 pounds of spherical beryllium powder and extensive material characterization of the powder for use in low oxide beryllium optics for defense applications. A solicitation was submitted for procurement and NMI submitted a proposal to the Air Force. NMI has discussed the requirements with Brush Wellman management and had agreed to team on the effort. NMI would manage the program and fabricate the powders and Brush Wellman would supply the input feed material in the form of B-26D vacuum cast machined bar. Brush Wellman would also provide technical support during the characterization of the material.

During the proposal stage, NMI revised its procurement instructions to state that the B-26D bars must be free of voids or holes. Brush Wellman then revised their quotation and increased the B-26D bar price by 300%. They informed NMI that they would not modify the manufacturing process and the only way they would meet our requirements would be through a costly hot isostatic pressing process which would press the bars into solid form. NMI was also advised that Brush Wellman was not submitting an individual proposal to the Air Force to produce powders. We were advised by the Air Force that NMI was the only respondent to the request and a sole source justification document was required. During the sole source justification review process the funding was removed from the program and the solicitation was delayed 8 months.

The new solicitation was released and NMI with Brush Wellman as a team mate responded for approximately 2.5 million dollars with more than 40% this amount directly funded to Brush Wellman. After we submitted our proposal we were informed that Brush Wellman had used our proposal information and submitted a response to the Air Force directly. Brush was awarded the contract for approximately 950 thousand dollars with the stipulation that the technology being developed under the contract would remain property of Brush Wellman Co. and would not be released to industry. NMI opted not to challenge the revised solicitation and agreed to pursue spherical beryllium powder manufacturing internally.



NUCLEAR METALS, INC.

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One year later NMI received a contract to produce spherical beryllium powders for Oak ridge National Labs under their OPTICS MODIL Program. NMI procured the input material from Brush Wellman at an increase of nearly 3 times the cost of machined ingots from the original IR&D study. NMI successfully negotiated with Brush Wellman to lower their price by approximately 20% if we would process 100 pounds of Brush Wellman supplied material at no cost for their own internal evaluation. NMI felt this would be good move for potential future sales or technology license consideration. NMI delivered both the customer and Brush Wellman materials and we received no feedback from Brush. No further work has been done at NMI on the production of spherical beryllium powder and the powder facility is in the process of decommissioning.

In 1991 NMI received an inquiry from Martin Marietta Electronics and Missiles Co., (MMEM) on the production of beryllium aluminum castings. [***].

[***].

In 1992 with the fall of the cold war NMI received information on a potential source of powder metal beryllium from Russia. [***]. During this period we purchased all of our vacuum cast beryllium material from Brush Wellman at prices in excess of \$350.00 per pound.

[***]. We purchased the entire LMEM required amount (550 pounds) from Brush Wellman since we had not fully qualified the Ulba material. We notified our intention to both Brush Wellman and [***] of developing multiple sources. We also suggested we meet to discuss the feasibility of using a lower grade input material for Beralcast®. Brush Wellman suggested a material identified as "co-melt" which would have used more scrap material during the production process. NMI procured, evaluated and accepted this material for Beralcast® use. Brush lowered the price of this material as well as the price for all vacuum cast grades to thwart the competition from Ulba.

In 1994 NMI held a meeting with Brush Wellman to discuss procurement of various grades of beryllium to support Beralcast®. [***]. NMI felt that an input material used in our casting process would generate beryllium demands which would ultimately increase the world wide beryllium demand by 2 to 3 times its current rate of 200 metric tons annual. Brush Wellman sales personnel informed NMI verbally that in order to get lower prices (at or below the Kazak material) that what has been presented we would have to enter an exclusive supply agreement which is similar to their agreement with NGK for Beryllium Hydroxide which is used in Be-Cu alloys. They also stated that a sales level below \$100.00 a pound for spot purchases would not be feasible from a market point of view since they sell 75% of the beryllium produced for Be-Cu alloys at a premium. This was even in light of the fact that with increased market demand and facility modifications lower costs were reasonably achievable. We requested a proposal from Brush Wellman which would reflect lower prices and instead received a quote for production quantities with no indications of developing a low cost, low grade supply material.



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At the same time NMI was under intense pressure to support the market place for our Beralcast® investment castings. Market interest was very high and NMI was being followed very closely by Brush Wellman with claims they also manufacture investment castings. NMI began loosing orders or pieces of orders to various customers to Brush Wellman since our prices were higher. NMI could not arbitrarily lower our prices to win orders and made a business decision that if Brush Wellman could produce products at lower prices it could not change how we quoted work to our customers. Within 9 months, the first of these lost orders was placed with NMI. NMI received customer purchased tooling which had to be shipped from Brush Wellman to NMI. These order delays made it extremely difficult for NMI to support since the customer had already expended their residual schedule time and the Beralcast® hardware was now critical to meeting their customers requirements.

During last weeks final briefing, Brush Wellman had showed the commission staff one of their Beryllium Aluminum castings which happened to be identical to one of NMI's castings. This is very deceiving since castings can look alike from a cosmetic point of view, but unless the material properties have been achieved, the material cannot be used by customers. In 1992 NMI was producing castings which looked perfect from a cosmetic point of view. It took several million dollars and 2-1/2 years to achieve the desired internal microstructures and resultant mechanical properties for customers use. We have been advised by Brush Wellman's former customers who have placed replacement orders with NMI that the reason for their change in suppliers is due to Brush Wellman's material not meeting the desired microstructures or mechanical properties.

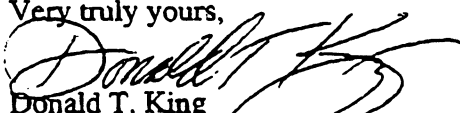
In 1995 and 1996 NMI solicited a request for pricing to both Brush Wellman and Beryllium Materials, International (BMI) for vacuum cast beryllium lump. This procurement was to support the Comanche Demonstration/Validation program. We forwarded our prices to LMEM with three options. The first (most expensive) was to purchase all material from Brush Wellman since their was no risk in the supply, second to purchase 30% from Brush Wellman and 70% from BMI to minimize the risk, or third (least expensive) to purchase the entire amount of material from BMI. LMEM discussed this with their customer, Boeing and the ultimate customer, the Army. NMI was directed to procure the entire amount from BMI which we did.

[***].

I hope this information is helpful to your staff in conducting their final assessment of the investigation. We are hopeful that from this and previous testimony that the ITC will look favorable and deny any trade sanctions in favor of Brush Wellman.

Please do not hesitate to call me directly if you have any questions.

Very truly yours,


Donald T. King
Manager, Sales and Contracts