

**AFFIDAVIT OF SPECIAL AGENT CATHERINE L. DONOVAN**

I, Catherine L. Donovan, Special Agent with the United States Department of Commerce in Boston, Massachusetts, being duly sworn, depose and state:

**I. INTRODUCTION**

1. I have been a Special Agent with the United States Department of Commerce, Bureau of Industry and Security, Office of Export Enforcement for ten years. I am responsible for investigating the illegal export of commodities and technology from the United States. Before becoming a Special Agent with the Department of Commerce, I was a Special Agent with the United States Customs Service for 15 years. My responsibilities in that job included investigating the illegal import of narcotics and other commodities, the illegal export of military commodities and technology, commercial fraud, and money laundering. I have received basic training as a Customs Service agent and Export Enforcement Agent, as well as specialized training in the Export Administration Regulations and export violation investigations, among other things.

2. I submit this affidavit in support of an application for a complaint charging that, from a time unknown but no later than March 2007 and continuing to the present, QIANG HU a/k/a JOHNSON HU ("HU"), a Chinese national, willfully conspired with others known and unknown to violate the Export Administration

Regulations, 15 C.F.R. §§ 736.2(9) & 764.2, and Executive Order 13222 in violation of the International Emergency Economic Powers Act, 50 U.S.C. §1705(a) and (c), by illegally supplying U.S. origin parts to end-users in China and elsewhere in violation of U.S. export regulations and the terms of issued U.S. Department of Commerce licenses.

3. HU has been the sales manager at MKS Instruments Shanghai, Ltd. ("MKS-Shanghai") since 2008. MKS-Shanghai is the Shanghai sales office of MKS Instruments, Inc. ("MKS"), which is headquartered in Andover, Massachusetts. HU's employment gives him access to MKS manufactured parts, including export-controlled pressure-measuring sensors (manometer types 622B, 623B, 626A, 626B, 627B, 722A, and 722B), which are commonly known as pressure transducers ("pressure transducers"). Pressure transducers are export controlled because they are used in gas centrifuges to enrich uranium and produce weapons-grade uranium.

4. As described in greater detail below, there is probable cause to believe that HU and others at MKS-Shanghai, including co-conspirator #1, a salesman HU supervises, caused thousands of MKS export-controlled pressure transducers, worth over \$6.5 million, to be smuggled from the United States and delivered to unauthorized end-users using export licenses that were fraudulently obtained from the U.S. Department of Commerce. HU and co-conspirator #1 caused MKS-Andover to file false end-user

information on license applications submitted to the U.S. government using two primary means of deception.

5. First, HU and co-conspirator #1 used pre-existing licenses issued to legitimate MKS business customers to export the pressure transducers to different customers in China. HU and co-conspirator #1 also caused MKS-Andover to apply for, and obtain, export licenses in the names of legitimate MKS business customers without their knowledge for use by different customers. Once the export-controlled pressure transducers were received by MKS-Shanghai, HU and his co-conspirators caused the parts to be delivered to a middle-man, co-conspirator #2, who in turn supplied them to the actual end-users (who were not themselves named on the export license or authorized to receive the parts).

6. Second, HU and co-conspirator #1 sometimes obtained export licenses that named a "front" company of co-conspirator #2 as the end-user in order to fulfill orders placed by other companies. HU and co-conspirator #1 then used these fraudulently obtained licenses to smuggle the pressure transducers from the United States to China knowing that co-conspirator #2's company was not the ultimate consignee (or end-user) but rather would in turn deliver the parts to unauthorized end-users in China and elsewhere.

7. The information contained in this affidavit is based upon my personal involvement in the investigation, as well as on

my review of pertinent documents (including documents obtained via subpoena) and information furnished to me by other law enforcement agents, including special agents employed by the Federal Bureau of Investigation and the Department of Homeland Security, Homeland Security Investigations.

8. This affidavit is submitted for the limited purpose of establishing probable cause in support of the application for the requested criminal complaint and associated arrest warrant. It does not set forth each and every fact that I have learned during the course of this investigation.

## II. SUMMARY OF THE LAW

9. The Export Administration Regulations ("EAR"), 15 C.F.R. § 730.1, et seq., regulate the export of all "dual-use" items, i.e. items that have a military or strategic use as well as a commercial one. See 15 C.F.R. § 730.3. The EAR limit the export of goods and technology that could enhance foreign military capacities, jeopardize U.S. national security, or undermine U.S. foreign policy. The EAR place requirements on all exporters and include a list of items for which an export license is required. See 15 C.F.R. § 774.

10. Whether an item requires an export license depends in part on what country the item is being exported to, who the end-user is, and what the end-user intends to do with the item. The EAR therefore expressly require that an applicant for an export

license disclose the names and addresses of all parties to a transaction, id. § 748.4(b), including the applicant, purchaser, intermediate consignee(s) (if any), ultimate consignee, and end-user, id. § 748.5. If there is any doubt about which persons should be named as parties to the transaction, the applicant must disclose the names of all such persons and the functions to be performed by each. Id. §748.4(b). Certain applications must be supported by documents designed to elicit information concerning the disposition of the items intended for export. Id. § 748.9(b). Among those are applications that involve Nuclear Nonproliferation items and end-use, and those involving items destined for the PRC that are controlled to the PRC for any reason. Id. § 748(b)(2).

11. Although the EAR's authorizing statute -- the Export Administration Act, 50 U.S.C. App. §§ 2401-2420 (1988) -- expired in 1989, the EAR have been continued in full force and effect since that time through periodic reauthorizations and successive invocations of the International Emergency Economic Powers Act ("IEEPA"), 50 U.S.C. §§ 1701-1706. On August 20, 2001, President Bush issued Executive Order 13222, in which he ordered that all provisions of the EAR "remain in full force and effect" under the authority of IEEPA. Executive Order 13222 (Aug. 17, 2001). Executive Order 13222 has been extended by successive Presidential Notices, the most recent being that of

August 12, 2011, 76 Fed. Register 50661 (Aug 16, 2011).

12. To violate, attempt to violate, or conspire to violate, any portion of the EAR is a felony punishable by up to 20 years' imprisonment under IEEPA. See 50 U.S.C. § 1705 ("It shall be unlawful for a person to violate, attempt to violate, conspire to violate, or cause a violation of any license, order, regulation, or prohibition issued under this chapter. . . . A person who willfully commits, willfully attempts to commit, or willfully conspires to commit, or aids or abets in the commission of [one of these unlawful acts] . . . shall, upon conviction, be fined not more than \$1,000,000, or if a natural person, may be imprisoned for not more than twenty years, or both.")

13. The EAR make it unlawful to engage in any conduct prohibited by or contrary to, or refrain from engaging in any conduct required by, the EAR, or any order, license or authorization issued thereunder; to cause, aid, abet, solicit, attempt, or conspire to commit a violation of the EAR, or any order, license or authorization issued thereunder; or to order, buy, remove, conceal, store, use, sell, loan, dispose of, transfer, transport, finance, forward, or otherwise service, in whole or in part, any item exported or to be exported from the United States, or that is otherwise subject to the EAR, with knowledge that a violation of the EAR, or any order, license or authorization issued thereunder, has occurred. 15 C.F.R. §

764.2(a) - (e) .

14. The EAR also make it unlawful to make any false or misleading representation, statement, or certification, or falsify or conceal any material fact in connection with the preparation, submission, issuance, use, or maintenance of any export control document, or for the purpose of or in connection with effecting an export. Id. § 764.2(g). Finally, the EAR make it unlawful to engage in any transaction or take any other action with intent to evade the provisions of the EAR, or any order, license or authorization issued thereunder. Id. § 764.2(h) .

15. Additionally, Title 18, United States Code, Section 554, makes it unlawful to export or attempt to export or smuggle from the United States "any merchandise, article, or object contrary to any law or regulation of the United States. . . ."

### III. FACTS AND CIRCUMSTANCES

16. HU is a 47 year-old citizen of the PRC who lives in Shanghai, China. He graduated from the Dalian Maritime University in Dalian, China, in 1985, and from the Maastricht School of Management in The Netherlands in 2000. He is the sales manager at MKS-Shanghai, where he has worked since 2008. Co-conspirator #1 is also a resident of the PRC. He has worked as a salesman at MKS-Shanghai since 2006.

17. As a result of their employment, both HU and co-conspirator #1 had access to MKS export-controlled pressure

transducers. MKS manufactures and sells several different models of pressure transducers that are export controlled, including Manometers Types 622B, 623B, 626A, 626B, 627B, 722A, and 722B. These products are used in a wide variety of commercial applications, such as solar furnaces and vacuum manufacturing. They can also be used in gas centrifuges, which are devices for enriching uranium. More specifically, they are critical to the development of weapons grade uranium and are used to measure gas pressure of uranium hexafluoride in centrifuge cascades.

18. The Secretary of Commerce has informed me that MKS pressure transducers types 622B, 623B, 626A, 626B, 627B, 722A, and 722B are controlled under Export Control Classification Number 2B230 for non-proliferation and anti-terrorism reasons. The Secretary of Commerce has further informed me that export of these items to China requires (and at all relevant times has required) an export license.

19. As noted above, HU and his associates used two primary methods to smuggle MKS export-controlled pressure transducers from the United States and sell them to customers in China that lacked the requisite license for them. First, HU and his associates used export licenses that had already been issued to MKS customers (or applied for new licenses in the names of these customers) to export the pressure transducers to China; they then caused the parts to be delivered to co-conspirator #2, who in



turn supplied them to the actual end-users (who were not themselves named on the export license or authorized to receive the parts).

20. Second, HU and co-conspirator #1 caused co-conspirator 2's front-company -- Shanghai Racy System Integration Co., Ltd. ("Racy System") -- to be identified falsely on the export license application as the end-user. HU and co-conspirator #1 accomplished this by identifying Racy System as the end-user on documents they provided to MKS-Andover, which then (unwittingly) used that false information to apply for the actual export licenses. For example, between June 2008 and September 2011, MKS-Andover applied for, and obtained, four export licenses from the U.S. Department of Commerce authorizing the sale and export of 193 MKS pressure transducers to Racy System, which is identified as the ultimate consignee (end-user). MKS-Andover submitted the applications because the applicant for an export license must be a U.S. citizen, and must be the principal party in interest with the authority to determine and control the sending of items out of the United States; but MKS-Shanghai provided the information to be included in the application. The information consisted mainly of a completed Form BIS-711 (Statement by Ultimate Consignee and Purchaser), which stated that the end-user was Racy System and that the parts would be used in medical plasma cleaning systems allegedly manufactured by

Racy System.

21. Based upon my review of documents, research, and interviews conducted by others, I believe Racy System does not in fact manufacture medical plasma cleaning systems. Among other things, neither of the two business addresses used by Racy System in correspondence with MKS-Shanghai (i.e. purchase orders and shipping documents) is large enough to store or manufacture medical plasma cleaning systems. In fact, one of the addresses appears to be an apartment while the other is no bigger than a small conference room. Accordingly, I believe that the pressure transducers purchased by Racy System allegedly for its own use were actually delivered to unauthorized end-users in China and elsewhere.

22. Despite the fact that Racy System does not appear to actually manufacture medical plasma cleaning systems, records show that during 2010 and 2011, co-conspirator #2 dba Racy System took delivery of thousands of MKS pressure transducers with a retail value exceeding \$4.5 million. Some of these were obtained pursuant to the export licenses issued in the name of Racy System. Others were obtained pursuant to export licenses issued in the names of other companies.

23. As a result of the conspiracy and illegal activities of Hu and his co-conspirators, thousands of MKS pressure transducers were smuggled from the United States and delivered to unknown and

unauthorized end-users who did not certify, as required by law, that the pressure transducers would not be used in nuclear activities or re-exported to another country.

**A. Fraudulent Export License Process**

24. Based upon my review of pertinent e-mails, HU, co-conspirator #1, and others at MKS-Shanghai developed an elaborate export license "quota" system in which they used the names and business credentials of legitimate business customers to obtain a large quota of available export licenses in order to sell pressure transducers to customers that lacked a license.

(Typically, a business applies for an export license for a precise quantity of parts (i.e., 50, 100, 200, etc.) and a single license is valid for two years.) The following e-mails illustrate this scheme. Many of these emails were written partly in Chinese and have been translated by interpreters working for or with the FBI. In all cases, my descriptions of the emails are summaries, not verbatim transcriptions, and the translations are only preliminary.

25. On October 20, 2009, HU e-mailed a Chinese customer regarding export restrictions applicable to MKS pressure transducers and how MKS-Shanghai had resolved that issue with respect to his current order. HU copied the MKS-Shanghai logistics and purchasing manager on this e-mail. HU stated in pertinent part:

MKS 622A and 226A ... manometers are export controlled products by the U.S. in order to avoid possible usage in military and other sensitive fields. Civil usage is not a problem but needs to apply for export license ahead of time.

Because your previous order(s) is small quantity, our company temporarily borrowed some quota from other customers. With the increased quantity in the future, the export license is a must.

26. On May 5, 2010, HU emailed a Chinese customer regarding a price quote for MKS Type 622B Pressure Transducers and copied co-conspirator #1 and several other MKS-Shanghai employees on the e-mail. In this e-mail, HU advised the customer that, "We informed you 2 days ago that applying for export license by US Dept of Commerce would take some time (about 4 months). In order to solve your problem of delivery cycle and unable to wait for the export license, after our internal discussion, we agree to reallocate some remaining quotas from other" customers.

27. On July 13, 2010, HU emailed a Chinese customer explaining the export license process and how he planned to use the export license issued to another company, Shanghai Liyouda Electro-Mechanical Equipment Co., Ltd. ("Liyouda"), to evade U.S. export regulations. Liyouda was copied on the e-mail. HU characterized Liyouda in the e-mail as MKS-Shanghai's "rep company." In pertinent part, HU stated in this e-mail:

Manager Peng [manager of new Chinese customer], hello. For large quantity of MKS . . . manometer, licenses from Chinese and US Dept of Commerce need to be reapplied. The cycle for such application is rather

long. We will send out the relevant document to you ASAP. . . . During the application process, . . . we will continue the supply using our rep's quota. Detailed operation steps are as follows: (A) your company will place PO [purchase order] directly with our rep company. . . .

Below is the information for our rep company:  
Company Name: Shanghai Liyouda Electro-mechanical  
Equipment Co., Ltd. . . . .

Manager . . . [manager of Liyouda], hello.  
Thank you for your great support, so MKS can keep normal business with our important customer during license applying process for the large quantity.

HU concluded the email by stating to both parties, "the export control of the [MKS pressure transducers] has caused extra trouble for all 3 sides. Please understand and provide cooperation actively." Documents obtained from MKS show that during 2010 and 2011, MKS-Shanghai sold over 2,000 pressure transducers to Liyouda. Based upon his information, my review of other documents, and my knowledge of this case as a whole, I believe Liyouda, like Racy System, was effectively a front company that HU and co-conspirator #1 used to pose as the ultimate consignee and end-user in MKS pressure transducer transactions.

28. On August 13, 2010, the MKS-Shanghai logistics and purchasing manager e-mailed the sales staff at MKS-Shanghai, including both HU and co-conspirator #1, advising the sales employees that they were facing a "severe shortage" in their available export licenses. In this e-mail, MKS-Shanghai

logistics and purchasing manager stated in pertinent part:

Hello, Everyone

Since Engineer ...<sup>1</sup> [name of co-conspirator #1] received 2 large orders, our current usable export license is in severe shortage. We have to describe the end users to the Department of Commerce if we want to repeatedly apply export licenses for existing customers. And the fact that customers don't actually buy that many makes it difficult to apply. Therefore I need your help to provide new business licenses especially from the customers listed below. If any of these end users listed below cannot get the export license, please let me know. So I won't keep them in the 'need to apply' list.

[Name of another MKS-Shanghai sales engineer], thank you for providing many business licenses, even the companies that never bought (these parts)

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[Name of Co-conspirator #1], since the quantity is really very large, as we discussed, we can use some of the quota from Hanghong, Shangyu Jingsheng and Shiva Medical (not too many), since these two companies applied with 'description' with Chinese Department of Commerce before, when it comes time for them to confirm the purchase, make sure to tell them to confirm the quantity too, otherwise it will affect us in the future ...

#### **Use of Racy System to Evade U.S. Export Laws**

29. E-mail correspondence obtained from MKS illustrates how Racy System company was used to evade U.S. export laws. These e-mails show how co-conspirator #2 posed as an MKS distributor when customers expressed a desire to obtain export-controlled products from co-conspirator #1 at MKS-Shanghai but lacked an export

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<sup>1</sup>Co-conspirator #1's name has been redacted from this e-mail.

license for those products.

30. On March 7, 2008, co-conspirator #1 emailed co-conspirator #2 and copied an individual named Gao Jing. Co-conspirator #1 addressed co-conspirator #2 first, stating, "The following customer needs MKS 72211TBA2FJ Pressure Manometer [Pressure Transducers]. Please help with the order because of license issues." Co-conspirator #1 next addressed Gao Jing, stating, "Because this product is a military product, you will need an export license from the U.S. Dept of Commerce. Therefore, this agency company [i.e. co-conspirator #2 d/b/a "Racy System"] will handle the order. Please understand."

31. Twenty minutes later, on March 7, 2008, co-conspirator #2 emailed Gao Jing and wrote: "Gao Jing, hello! I heard that your company wants to purchase MKS72211TBA2FJ Pressure Thin Film Manometer [Pressure Transducers]. Our company is the agent of MKS in China, and we have export license from the US Dept of Commerce. Please inform us about your quantity and contact information."

32. I have been informed by MKS that co-conspirator #2 d/b/a Racy System is not an agent of MKS in China. In addition, as explained above, while MKS-Andover did obtain export licenses for Racy System, they were obtained under false pretenses, that is, HU and co-conspirator #1 (as well as conspirator #2 on the Form 711) misrepresented to MKS-Andover the identity of the end-

user and the end-use information for the parts. MKS-Andover in turn unknowingly supplied this false information to the Department of Commerce on the export license applications for Racy System.

33. On December 5, 2008, co-conspirator #1 sent a reply e-mail to an individual named Wan Chai and copied co-conspirator #2 on this e-mail. (I have not yet been able to obtain a copy of the initial email to which the reply was sent.) The subject line of the e-mail read "Re: Urgent requirement of gauge." Co-conspirator #1 wrote: "Dear Wan Chai, my answer is 1. The goods must ship to China, because of license. . . . [Also, because] of license [requirement] Mr. [co-conspirator #2's name] will handle this case. Please contact him." Later that day, Wan Chai emailed a response to co-conspirator #1 and copied co-conspirator #2. He wrote: "Our company in UAE (Dubai) [identified in the email as Parr Lab] will release the order, but if required we will collect our goods from your office. Another option is that the order will be given by the UAE company and the delivery address will be in China." After additional e-mails discussions between Wan Chai and co-conspirator #2, Wan Chai agreed to order the parts through co-conspirator #2 at Racy System.

34. On December 6, 2008, co-conspirator #2 advised Wan Chai that he would order the parts from MKS for Parr lab and Wan Chai would "collect these goods from our company working site." Co-



conspirator #2 further advised Wan Chai in this e-mail that he would require advance payment for this order. After Wan Chai had placed the order with co-conspirator #2 at Racy System, co-conspirator #2 sent an e-mail to Wan Chai confirming co-conspirator #2 had received the order and that "Mr. [co-conspirator #1's name] will handle this case for you." Co-conspirator #1 was copied on this e-mail. Once again, I believe these emails show co-conspirator #1 and co-conspirator #2 offering to sell export-controlled goods to a third party that lacked an export license (in this case Parr Lab Technical Solutions, a UAE-based company) using an existing export license issued to Racy System or another Chinese company.

35. In 2004, the U.S. Export Control Attache in Hong Kong conducted a pre-license inspection of the Parr Lab Technical Solutions facility in Hong Kong relating to Parr Labs' requested purchase of parts that could be used in missile applications. As a result of this inspection, on April 26, 2005, the U.S. Department of Commerce identified Parr Lab Technical Solutions as an unsuitable end-user for any U.S. commodities. This negative finding was published in the Federal Register and Parr Lab Technical Solutions still remains listed on the Department of Commerce's List of Unverified (Red Flagged) End Users. Persons on this list are suspected of diverting U.S. products for nefarious purposes, including the production of weapons of mass

destruction.

**IV. CONCLUSION**

36. Based on the foregoing, I believe there is probable cause that HU has engaged with others in a conspiracy to violate the Export Administration Regulations, 15 C.F.R. §§ 736.2(9) & 764.2, and Executive Order 13222 in violation of the International Emergency Economic Powers Act, 50 U.S.C. §1705(a) and (c).

*Catherine L. Donovan*

CATHERINE L. DONOVAN  
Special Agent  
Department of Commerce  
Bureau of Industry and Security  
Office of Export Enforcement

Sworn to me and subscribed in my presence this 18<sup>th</sup> day of May, 2012.

The seal of the United States District Court for the District of Massachusetts is circular, featuring an eagle with wings spread, perched on a shield. The text "UNITED STATES DISTRICT COURT" is arched across the top, and "DISTRICT OF MASSACHUSETTS" is arched across the bottom. A signature is written across the seal.  
TIMOTHY S. [unclear]  
United States Magistrate Judge