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Iranian Smuggling for Military Nuclear Programs: From Shahid Hemmat Industrial Group to the Physics Research Center

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The former head of the Physics Research Center, Sayyed Abbas Shahmoradi-Zavareh, utilized a smuggling ring that existed while he was at Shahid Hammat Industrial Group to further procurements for the Physics Research Center, which telexes indicate ran a parallel military nuclear program.

On February 23, 2012, ISIS released the report, [*The Physics Research Center and Iran's Parallel Military Nuclear Program*](#), based on a set of about 1,600 telexes which contain a set of procurement data about Iran's Physics Research Center (PHRC) and its head Sayyed Abbas Shahmoradi-Zavareh. One topic in this report was a discussion of a 1988 effort to illegally procure a mass spectrometer with nuclear applications in uranium isotope separation. Iran has stated that Shahmoradi was asked to procure this spectrometer prior to the start of the PHRC when he was a manager at Shahid Hemmat Industrial Group (SHIG). This organization was a leader in Iran's effort to build ballistic missiles. Evidence in the original ISIS report suggests that SHIG was also the original location of Iran's military nuclear program.¹

Telexes about this procurement effort reveal connections among several trading companies and individuals, finally leading to the Physics Research Center. One important telex name of an entity, ALKH IR, emerged in this 1988 procurement effort. ALKH IR was linked to a German trading company involved in trying to procure both the spectrometer in 1988 and chemical weapons precursors in 1989. According to a directory of telex numbers at that time, in 1990 this telex name and number matched the company All-Pharma Co. Ltd (Tehran).² Tracking the use of the ALKH telex name leads to procurements for the Physics Research Center and its front Sharif University in 1991 and 1992. This trail reveals a smuggling network attached to SHIG that continued to aid the procurements of the PHRC, which the earlier ISIS paper provides support to the assessment that the PHRC was engaged in buying for a military nuclear program in parallel to the nuclear programs of the Atomic Energy Organization of Iran (AEOI). The telexes referenced in this report are available in a [supplement](#).

Iran's Declaration to the IAEA Remains Incomplete

In response to International Atomic Energy Agency (IAEA) questioning, Iran provided the IAEA the following information about efforts in 1988 to acquire a mass spectrometer with nuclear applications. Prior to heading the PHRC, Shahmoradi was head of the "Mechanics Workshop" at SHIG.

¹ Information from Western sources suggests that the genesis of Iran's weaponization program began in the late 1980s at SHIG. A main function of SHIG was the development of ballistic missiles, which may have been referred to as group or project 1 in procurement records. Project or group 2 may have been its nuclear complement, albeit at a very early stage of activity on nuclear efforts.

² *Jaeger and Waldmann International Telex*, published in Germany by Jaeger and Waldmann, 1990.

In 1988, the AEOI asked a dean of Sharif University of Technology for help in procuring a mass spectrometer. The dean then approached Shahmoradi at SHIG, who requested unsuccessfully a Finnegan MAT 281 mass spectrometer with specifications for nuclear applications.

This declaration appears at best only a partial picture of the procurement attempt by Shahmoradi and his purpose in acquiring a mass spectrometer. The newer information raises additional questions about whether Iran has revealed the entire story about this case and the true end use of this piece of equipment.

Shahmoradi's or SHIG's smuggling network appears to have been independent of the smuggling network used at that time by the AEOI, which has been closely analyzed by the IAEA. In an interview with the authors of this report, the former technical head of the AEOI centrifuge program in the 1980s said that while he worked on the centrifuge program he knew nothing of this parallel effort, Shahmoradi, or the PHRC. However he suspected that such a parallel military effort existed while he worked on centrifuges at the AEOI. This expert was very familiar with his own program's efforts during this time period to acquire in Europe a wide range of centrifuge-related equipment and material and even centrifuge components for a research and development program. His smuggling network could have sought its own spectrometers.

Was the AEOI the actual purchaser? An alternative possibility is that the AEOI was not the true customer. Could this procurement for a mass spectrometer have been for a parallel military gas centrifuge uranium enrichment program that was in its infancy and based at SHIG? The evidence is not sufficient to answer this question definitively, but enough information exists to question Iran's statement about its procurement of this spectrometer. In any case, the telexes reveal a smuggling network that transitioned with Shahmoradi as he moved from SHIG to PHRC. Parts of this network continued to aid PHRC's effort.

Telexes

First Enquiries

The first telex is dated on May 21, 1988 and was a request from SHIG to Finnigan Mat Ltd. It is from SHIG's department 54/02 and uses the telex name SHIG IR. SHIG asked for general catalogs of its mass spectrometers and for prompt action (telex available in the supplement but it contains no ISIS assigned telex file number). The telex is not signed by a person but instead by SHIG.³

A direct purchase from Finnigan Mat did not seem feasible, since the mass spectrometer was made in the United States and SHIG was well known as the developer of Iran's missiles. A later set of telexes describes an effort to acquire such a MAT 281 spectrometer that has the characteristics of a smuggling operation against the United States. The effort utilizes an overseas trading company to hide the true end user and circumnavigate U.S. government sanctions. The Iranian company requesting the items is identified in the telex with the abbreviation ATC, which sent the telex from an entity with the telex abbreviation of VARS IR. The telex is signed by M. Ashtari. ISIS could not identify the actual Iranian company name ACT but VARS IR is identified in a 1990 telex directory as Sanayeh Nasbe Khoshgoue (Tehran).⁴ Moreover, Mr. Ashtari could be Mojtaba Ashtari, an Iranian citizen (see below).

An enquiry from ATC, dated August 30, 1988 and signed by Ashtari, to a Swiss company identified as ICT or Inter Commerce Treuhand requested this specific type of spectrometer and 30 U.S. military panel mounted aircraft radio transceivers (see telex 587).⁵ Ashtari preferred the U.S.-origin goods but stated that equivalent

³ The post office box on the telex from SHIG is 16765-1595, whereas PHRC had the post office box 16765-463. The PHRC also used P.O. Box 16765-1831. The reason the first five digits are identical is unknown.

⁴ According to a Farsi expert, the meaning of the company name is Dry Installation Industries.

⁵ The Swiss public record has an Inter-Commerce Treuhand, Handels und Finanz GmbH, in Basel (SHAB Nr.83 vom 9.4.1979, S.1117). Wolfgang Störk und Anton Mehr were the key company officials. In *International Telex*, the telex name and number of ICT CH is for the Basel company Inter-Commerce Treuhand.

German equipment could be substituted. The stated end user was “Sepah Pasaran”, which is Iran’s Revolutionary Guard Corps (IGRC). This end user would likely cause more alarm among legitimate suppliers than if the AEOI was listed as the final recipient.

Wolfgang Störk, an official at ICT, likely a middleman, responded on September 7, 1988 to M. Ashtari (spelled as Ashtario in this telex but likely the same person) in a telex with the heading: “RE mass spectrometer system model ‘MAT 281’ for uranium hexafluoride isotope analysis” (see telex no. 1486). He stated he was willing to acquire the item but asked for an official letter stating no military or government involvement in the spectrometer, particularly warning not to mention in any papers Sepah Pasaran.

If ICT is the Swiss company Inter-commerce Treuhand, Handels and Finanz, as appears likely, it was implicated in an illicit purchase of ammonium perchlorate from a U.S. supplier in 1988.⁶ This chemical is used in rocket fuel.

Rheineisen

A few months later on October 10, 1988 a German company Rheineisen Chemical Products GmbH, a trading company in Düsseldorf sent a telex to the attention of Shahmoradi at the Ministry of Sepah, S.H. Industrial Group, which is likely SHIG (no telex file number but see appendix or supplement). Rheineisen sent the message to telex ALKH IR instead of SHIG IR. It is a proforma invoice (P/I) for the “UF6 mass spectrometer MAT 281” with a price of 1,423,200 (no currency given). The telex is a long list of parts for the spectrometer, spare parts, and site preparation equipment. A P/I would normally precede the opening of a letter of credit. So, this telex would be used by Shahmoradi to establish a letter of credit to pay for the spectrometer. Rheineisen specified that delivery would be nine months after placing the order and shipment would be from Bremen, Germany. The telex states that the “origin” is Switzerland, although it is unclear what that means in this case. The spectrometer from Finnigan Mat was originally of U.S. origin. Or was ICT still involved in arranging the order for the spectrometer? Had it falsely told the supplier that the final destination was Switzerland? Many questions remain unanswered, including whether the MAT 281 was eventually delivered, contrary to Iran’s declaration to the IAEA.

An executive of Rheineisen Chemical was Mojtaba Ashtari, an Iranian citizen and likely the same person who contacted ICT from the telex name VARS representing the company ACT. He appeared prominently in 1989 media reports speaking on behalf of Rheineisen after the U.S. government notified the German government that Rheineisen was brokering the sale of 257 tonnes of thionyl chloride, a precursor for mustard gas, from an Indian company to Iran.⁷ Rheineisen reportedly signed the contract, worth over \$350,000, on June 1, 1989 with Vezarate Defa, which the Associated Press identified as an Iranian state-owned industrial organization.⁸ Vezarate Defa means Defense Ministry in Persian. One unanswered question is whether the telex name, VARS IR, which Ashtari used to contact ICT, is somehow related to this military organization (telex 587).

The owner of Rheineisen reportedly was an Iranian family but company officials refused to comment on its owners. An Iranian diplomat based in Germany, Said Karim Ali Sobhani, was linked to this sale and purchases of other chemicals used in chemical weapons. As a result, the German government asked him to leave the country.⁹

⁶ Michael Gordon, “Shipment of U.S. Chemical Seized on Way to Iran,” *The New York Times*, March 23, 1989.

⁷ Ferdinand Protzman, “Bonn Asserts Iran Chemical Sale Might be Illegal,” *The New York Times*, June 30, 1989.

⁸ Kevin Costelloe, “Poison Gas Scandal Could Lead to Tighter Trade Laws,” *The Associated Press*, June 29, 1989.

⁹ Ferdinand Protzman, “Bonn Acts in Iran Chemical-Sale Case,” *The New York Times*, June 28, 1989.

Rheineisen's lawyer reportedly acknowledged that the company had arranged this sale and told *The New York Times* that it had "retroactively voided" the contract.¹⁰ The 1989 media reports do not contain any information about Rheineisen's or Ashtari's efforts to obtain a mass spectrometer. Nonetheless, U.S. officials expressed skepticism about Rheineisen's claims of innocence. Based on this case and the 1988 telex to Shahmoradi, Rheineisen appears much more complicit in illegal smuggling than indicated in the 1989 media reporting.

Tracing ALKH telexes

Despite his protestations of naivety in the media, Ashtari appears to have been a procurer for Iran's chemical weapons and nuclear programs. Rheineisen was an intermediary for those efforts but was likely put out of the smuggling business in 1989. Ashtari does not appear in later telexes that are available to ISIS.

However, certain telex names and numbers do reappear. Although Rheineisen addressed the telex to SHIG, as mentioned above, it did not use SHIG's known telex name and number. Instead, the company addressed the telex to ALKH IR at telex number 213659. The SHIG telex coordinates are SHIG IR and 213795, a similar number. ALKH, or All-Pharma Co. Ltd., appears to be an Iranian trading company used or created as a front company by SHIG for more sensitive procurements.

ALKH IR appears in seven telexes (see Appendix which contains all these telexes). These telexes involve enquiries and other communications with suppliers. Moreover, the ALKH telexes contain names that can be traced to other telexes and suppliers.

The Iranian companies or entities, Ireledyn Co, Bazal, and Simia Co, all used the ALKH telex name from 1989 to 1992. Bazal shows up in several other telexes that used its own telex name BAZL IR. Both BAZL and ALKH telexes involve a F. Khamenee. Simia Corporation or Company is referenced in telexes, and one is signed by a M. Talebian. A Mr. A. Dolati of Ireledyn gives his company address as 189 Kasra Building, Iranshahr Ave., TEHRAN 15846. All but Ireledyn are in turn connected in the telexes to both Sharif University and the PHRC procurements.

Simia and Outokumpu

Mr. Telebian of Simia Co. used the ALKH telex name and number on June 26, 1991 to contact the Finnish company Outokumpu Electric, a company that sold analytical equipment for mining operations (telex 317). This telex was part of a series of communications between Outokumpu and Sharif University. This specific one addressed a facsimile from Outokumpu sent on June 13, 1991, and Telebian responded with regards to equipment called, YMET 880, for Sharif University, which he wrote was "purchased for mining group of defense ministry research center" (telex 317). Telebian was acting consistent with a trading company involved in a procurement by an Iranian buyer. Significantly, his comment shows that Sharif was buying for a military center, likely the PHRC. This directly contradicts Iran's declaration that the PHRC bought for Sharif University.

Telex 317 states that the equipment was for a mining group. Another telex suggests that it could have been intended for uranium mining. The overall purpose of the procurements from the Finnish company was described in a January 8, 1991 telex (telex 671). The purchasing manager of Sharif University wrote that the equipment was needed "because we have a project on feasibility study for U, Cu, V mines, we ought to analyse these elements" (telex 671). This telex lists the concentration ranges of these elements, including U₃O₈. The writer asks for a response and provides PHRC's facsimile and P.O. Box number, adding further evidence that the actual buyer was the PHRC and not Sharif University.

¹⁰ Ferdinand Protzman, "German Company Admits Role in Iran Chemical Sale," *The New York Times*, June 29, 1989.

Shahmoradi himself appears in a telex dated August 8, 1991 addressed to Outokumpu from Sharif University. The telex includes a copy of a facsimile signed by Shahmoradi addressed to Bank Sepah, Frankfurt Branch, requesting the extension of a letter of credit for purchases from Outokumpu. In this case, Shahmoradi would be the responsible official to pay for the item.

In 1993, Outokumpu is contacted directly by the PHRC (telex 1261). In the telex, the purchasing manager of PHRC refers to Outokumpu's facsimile to Simia Corporation and provides the answer to the question in that facsimile.

In summary, these telexes link Simia directly to ALKH and the PHRC. A telex acknowledges that Simia was aware that Sharif University bought equipment for a uranium mining project at a military center. Other telexes use the message numbering system for PHRC's Department 5 which is related to uranium exploration and mining (telexes 644 and 1261).¹¹

These connections show that the ALKH telex was used in contacting SHIG in 1988 and the trading company Simia two years later. Simia and ALKH appear to be elements of a military-based smuggling operation.

Bazel and Air Products

Several telexes concern Bazel acting as some type of intermediary for entities associated with ALKH and the PHRC, again suggesting a network of entities procuring for a military purpose. The original ISIS report on the PHRC discusses Sharif University's unsuccessful attempt to procure fluorine gas from Air Products and that Sharif University was buying for the PHRC, despite Iranian denials to the IAEA, as discussed in the earlier report.

One telex, dated January 7, 1991, is from Air Products to Mr. Khamenee at Bazel with the telex coordinates ALKH. It is a copy of a telex sent to the Purchasing Department of Sharif University (telex 670). Air Products evidently had this telex number and knew to copy certain messages to it. The topic of this telex is a decision to reduce the cost of goods and a request for an official end use letter. The next telex to Khamenee at Bazel is on June 18, 1991 and is again a copy of a telex sent to Sharif University (telex 298). The telex name is now BAZL IR, which likely means that Khamenee obtained a new telex number in the name of his company (see supplement). This telex notified Sharif of a decision by British authorities to impose a condition on the export application and asked for confirmation that Sharif would accept this condition.

On December 1, 1991, Bazel, using BAZL IR, telexed Air Products asking if Air Products had finalized the letter of credit and confirming that the end user can meet the condition on the export application (telex 376). Then on January 27, 1992, Air Products sent Bazel, at ALKH IR, a copy of a telex notifying Sharif University that the British government had denied the export license for the fluorine gas (telex 1195). Why Air Products did not use the BAZL IR telex number is unknown.

In summary, Air Products telexed Khamenee at Bazel and ALKH to inform him about its telexes to Sharif University. There are many telexes between Air Products and Sharif University during this period. It may be that Air Products was seeking the assistance of Khamenee to help with specific problems in the sale. But who did Khamenee represent? Khamenee was connected to Shahmoradi through the telex name ALKH. Given that Sharif University was acting as a purchasing front for the PHRC, Khamenee may have been representing PHRC's interests in making this purchase from Air Products and seeking a commission from the sale of the goods.

Bazel and Heinrich Kuebler AG, Switzerland

¹¹ See ISIS, [The Physics Research Center and Iran's Parallel Military Nuclear Program](#), February 23, 2012.

Khamanee and Bazel were involved in an order from Sharif University to Heinrich Kuebler AG in Switzerland, which is a leading manufacturer of liquid level measuring systems. The order for level sensing equipment appeared to have gone well, and Khamanee appears to have received updates on the status of the order. Khamanee appeared first in a telex from Kuebler on January 29, 1991 to Sharif University, mentioning a copy telexed to Khamanee. This telex confirmed the proforma invoice (telex 154). Evidently, Khamanee later confirmed an amendment to a letter of credit (telex 214). The goods were shipped by air on May 5, 1991 (telex 3). Then, problems seemed to have developed. Several subsequent telexes from Kuebler concerned Sharif University's lack of payment for the goods (telexes 276, 42, 285, and 68).

Several months later, in early 1992, the PHRC made a direct order to Kuebler for goods that had a message number signifying Department 8, heavy water production (telex 1064). Kuebler sent a proforma invoice for mass flow meters in late February 1992 (telex 1438). The next telexes are in September and October of 1992 from PHRC to Kuebler that state that it had not yet heard Kuebler's reply and was awaiting a response (telexes 1120 and 1074). Khamanee did not appear in these telexes, which were all sent to or received at the PHRC's telex. Perhaps, Kuebler connected Sharif University with the PHRC and decided not to do business with it based on the difficulty of getting paid. Or the management received a warning from its government not to do business with the PHRC.

Bazel and Elga

The PHRC sent via Sharif University's telex an order to Elga that mentioned both Khamanee and Bazel. The telex directory identified this company as Elga Products Ltd (High Wycombe, Buckinghamshire UK). The telexes involving Elga show the PHRC's use of Sharif University as a front and that Bazel is an Iranian trading company. However, the scarcity of telexes makes understanding the sale impossible.

A telex dated November 27, 1990 sent by Elga, containing a PHRC message number representing Department 2 (gas centrifuges) asks for a fax copy of proof that "your company is a government institute," where the telex number was for Sharif University (telex 624). On December 8, 1990, the PHRC, using the Sharif University telex number, sent Elga a telex answering that the institute name is "Physics Research Centre" (telex 645).

In a telex dated February 21, 1991, marked for the attention of Khamanee, Elga attempted to clarify whether Bazel was the agent for Sharif University (telex 174). Mr Sadr of DIO Dusseldorf had contacted Elga to inform them that DIO is a subsidiary of Sharif University, and it wanted to place an order for the university under a proforma invoice that had already been established. Sadr told Elga that contrary to what it had been told DIO was arranging the sale for Sharif University and that Bazel would have no involvement with this order. Thus, Sadr ordered Elga not to reserve a commission for Bazel. The letters DIO may stand for the well known Iranian Defense Industries Organization—a group of companies under Iran's military.

Again, these telexes demonstrate that Bazel was connected directly to the PHRC. In addition, one telex shows that Bazel is a trading company that works for commissions and is apparently in a competition with DIO.

In an uncommon reversal, a sender purportedly identified as Sharif University's Purchasing Department sent four telexes in mid-1992 to DIO Dusseldorf, but all four telexes were sent from the PHRC telex (telexes 987, 946, 959, and 1026). The subject is the same in all four, and the sender expresses concern about the absence of a reply to an earlier telex. Usually, the Sharif University telex is used to disguise a PHRC purchase. Perhaps, PHRC personnel were impatient, and they did not want to delay their message or a response by sending it from an intermediary's telex number.

VG Instruments, VG Elemental and Bazel

In a series of telexes involving a supplier of spectrometers, Bazel appeared as an entity that could further the sale and solve specific problems with the customer. In these telexes several related companies used a common telex, VGISOG G, to communicate with Sharif

University and the PHRC, starting in early 1991. The companies listed are VG Inorganic, VG Elemental, and VG Instruments. The telex directory lists the company as VG Isogas Ltd (Middlewich, Cheshire).

The telexes discussed an impending sale by VG Elemental of a Plasmaquad PQII mass spectrometer and a laser ablation unit to Sharif University, although a P.O. Box used by the PHRC is included in an earlier Sharif University telex. Later telexes make clear the PHRC presence in the sale. Such equipment is used to analyze the composition of solids, including nuclear samples. The laser equipment vaporizes a small sample of material from the surface of the solid.

The subject of several of the telexes is the establishment of a letter of credit and VG Elemental's need for an end user statement. To that end, VG Elemental sent a sample end user statement to Sharif University in which the buyer would commit that the equipment would not be made available for the use of military authorities, the AEOI, or "any other entity where it is known or believed that the goods will be used directly or indirectly for uranium enrichment purposes" (telex 194).

Khamenee of Bazel first appeared in a telex dated April 22, 1991, where S.J. Fraser reached out for help getting an end user statement from Sharif University. Using the ALKH telex, he wrote Khamenee on January 6, 1991 and April 11, 1991 that his company had sent the "proper form of words for an end-user statement" to the commercial manager at Sharif University's telex number (telex 218). Fraser asked Khamenee if he can "contact the end-user and emphasise the importance of sending this end-user statement" which is necessary to get an export license. Like Air Products, Fraser knew the ALKH telex number as a way to seek help on the sale. Whether a sale was made is unclear.

About a year later, on April 7, 1992, Fraser sent a telex to the PHRC telex, addressed to the Purchasing Department, concerned that his company had not heard from PHRC for "some time" (telex 1200). He referred to the same serial number of a letter of credit that had been established a year earlier when the stated customer was Sharif University (see telex 197). Thus, it appears that the PHRC was the actual customer or had become one in the meantime. In this case, Fraser offered to sell a VG 9000 Glow Discharge Spectrometer, which he said possessed exceptionally good sensitivity and resolution and was "top of the range for direct analysis of solid samples." This spectrometer can also be used to measure trace elements in solids, including nuclear samples. One week later, Fraser sent a copy of this same telex to Khamenee at Bazel, but this time he said he had earlier sent this telex to Sharif University not PHRC. Fraser apparently was confused with whom he was communicating. He sent the telex to the BAZL telex number, which could reflect that Khamenee had established his own telex by mid-1991. Again, the available telexes do not reveal the fate of the attempted sale or any responses from PHRC, Khamenee, or Sharif University.

In May 1995, Bank Tejarat Ghods in Tehran contacted B.T. London about establishing a letter of credit for an order by the PHRC from FI Elemental Analysis of Winsford, Cheshire, England of a VG Plasmaquad PQII Plus High Performance Inductively Coupled Plasma Mass Spectrometer and a laser ablation system (telex 1583). The cost was Pounds Sterling 580,407. In June 1996, PHRC contacted B.T. London and cancelled this letter of credit (telex 1330). The reason is not given.

Findings

The telexes reveal evidence of a smuggling network that transitioned with Shahmoradi as he moved from SHIG to PHRC. The entities associated with ALKH in the early 1990s aided Shahmoradi's procurement network. Telexes reveal companies and telex names that were used by intermediaries to further procurements for the PHRC and its front Sharif University. The individuals involved in some of those efforts may have used or formed

other companies that engaged in illicit procurements for this network or became involved in procuring illegally for other Iranian entities.

The telexes show the interchangeability of Sharif University and the PHRC. Several show that Sharif University bought or attempted to procure for the PHRC.

These cases again reinforce that Iran needs to update and correct its declaration to the IAEA about the PHRC. Iran needs to provide more information about the PHRC and Shahmoradi and his activities earlier with SHIG. The February 12, 2012 ISIS report on the PHRC provides evidence that the PHRC was engaged in buying for a parallel military nuclear program in the 1990s. Iran should clarify the PHRC issues with the IAEA as part of an effort to start establishing confidence that Iran's nuclear programs do not have a military dimension.

Appendix: Seven Telexes Mentioning ALKH IR

NNNNNMV88213659+*IR-0140-12
 213659 ALKH IR
 8586750 RHE D
 RCP MSG 3152/2 10.10.88
 FROM:RHEINEISEN CHEMICAL PRODUCTS GMBH., DUESSELDORF
 MUENSTERSTR. 330
 D-4000 DUESSELDORF 30
 TO MINISTRY OF SEPAH, S.H. INDUSTRIAL GROUP, TEHRAN
 ATTN DR. SHAH MORADI
 SUBJ SPECTROMETER
 FLWG YR DEMAND WE ARE PLSD TO SUBMIT OUR PROFORMA-INVOICE AS
 FLWG
 PROFORMA-INVOICE NO. 00110/88
 IN SFR} PART NO. ITEM PRICE.}
 72-201 UF 6 MASS SPECTROMETER MAT 281 1.423.200,--
 CONSISTING OF
 -BASIC SYSTEM MAT 281
 -MOLECULAR BEAM ION SOURCE
 -ANALYZER SYSTEM WITH 90 GEOMETRY
 WITH 46 CM EFFECTIVE RADIUS
 -MULTICollector SYSTEM WITH
 4 FARADAY CUPS
 -TURBOMOLECULAR/ION GETTER PUMPING
 SYSTEM
 -ANALYZER AND INLET SYSTEM ELECTRONICS
 FACTORY INSTALLED OPTIONS
 INLET SYSTEMS
 57-415 INLET SYSTEM MODULE FOR 3 SAMPLES OR 121.813,--
 STANDARDS. MAXIMUM OF 3 MODULES FOR
 3 SAMPLES EACH. {EITHER PIPETTE OR
 PROCESS LINE ADAPTOR UNITS AND EITHER
 CONTROL UNIT 72-202 OR CONTROL UNIT
 72-203 ADDITIONALLY REQUIRED}
 57-417 PIPETTE ADAPTOR UNIT {MAX. 9 UNITS 6.972,--
 POSSIBLE}
 72-202 CONTROL UNIT FOR 3 OR 6 INLET PORTS 17.970,--
 72-203 CONTROL UNIT FOR 9 INLET PORTS 29.886,--
 REQUIRED ACCESSORIES
 34-646 POTENTIOMETRIC 5.414,--
 OPTIONAL ACCESSORIES
 13-655 SAMPLE/STANDARD PIPETTE UNIT 4.686,--
 02-246 PRESSURE TRANSDUCER 13.892,--
 51-582 REFREEZE DEVICE 20.862,--
 57-431 ELECTRON MULTIPLIER 28.757,--
 37-608 SYSTEM MONITOR 30.955,--
 26-634 DAC MASS SELECTOR 16.542,--
 37-875 TEST KIT 15.540,--
 49-600 ION SOURCE WITHOUT FLANGE{SPARE} 24.996,--
 RECOMMENDABLE LUMP SUM FOR SPARE PARTS AND CONSUMABLES
 {FOR ABT. 1 YEAR} 20.678,--
 SITE PREPARATION REQUIREMENTS
 52-242 COMPRESSOR 4.845,--
 04-049 THREE-PHASE-TRANSFORMER 12.5 KVA 6.588,--
 02-186 SINGLE-PHASE POWER LINE CONDITIONER 87.398,--
 7.5 KVA, 50/60 HS {3 TIMES}

TERMS AND CONDITIONS

BY IRREVOCABLE LETTER OF CREDIT, PAYABLE AT SIGHT :PAYMENT.

DELOEIVERY: F.O.B. BREMEN, 9M MONTHS AFTER RECEIPT OF ORDER.

VALIDITY: TWO MONTHS FROM DATE OF ISSUANCE OF THIS P/I

ORIGIN: SWITZERLAND

REMARKS: THIS IS TO CERTIFY THAT THIS PROFORMA INVOICE IS TRUE
AND CORRECT AND THAT THE QUOTED PRICES ARE IN ACCORDANCE
WITH MARKET PRICES.

WE ALSO CONFIRM THAT THERE IS NO OTHER TRANSACTION
BETWEEN US AND THE PURCHASER IN REGARD WITH THIS
PROFORMA-INVOICE

RHEINEISEN CHEMICAL PRODUCTS GMBH

8586750 RHE D

NNNN

Telex # 1195

ý213659 ALKH IR
ý36511 AIRPRD G
REF :14904A /27/01/92. 16:21
TO :BAZAL
FROM A G BEST
SUBJECT: SHARI UNIVERSITY
TO MR KHAMANEE BAZAL CO TEHRAN
RE:K SHARIF NIVERSITY
I REGRET THAT WE HAVE HAD TO SEND THE FOLLOWING TELEX
RGDS
A BEST
CREATOR A G BEST/ CREWE/EX
FROM A G BEST/CREWE/EX
TO: SHAR (7088214474) /CRWTLX
TO PURCHASING DEPT SHARIF UNIVERSITY TEHRAN
REF L/C CH/620441/1 FLUORINE GAS
WE REGRET TO ADVISE YOU THAT WE HAVE JUST BEEN INFORMED BY THE
RESPONSIBLE GOVERNMENT DEPARTMENT THAT OUR APPLICATION FOR AN EXPORT
LICENCE FOR THIS ORDDER HAS; BEEN REFUSED .
WE MUST ADVISE YOU THEREFORE THAT WE CANNOT ACCEPT YOUR ORDER AND
SUGGEST YOU TAKE THE NECESSARY TEPS TOK CANCEL THE LETTER OF CREDIT .
AS YOU WILL APPRECIATE. THIS DECISION WAS OUTSIDE OUR CONTROL .
WE LOOK FORWARD TO BEIN OF ASSISTANCCE ON THE FUTUREE SUPPLY OF OTHER
MATERIALS .
KIND REGARDS
A.G. BEST
EXPORT MANAGER
AIR PRODUCTS PLC
CREWF
ENGLAND

Telex # 218

ý5579882193659=+ IR21 *

ý213659 ALKH IR

16:41 91-04-22 0040

ATTENTION MR KHAMENEE

FROM SIMON FRASER

ON 6 JANUARY AND AGAIN ON 11TH APRIL WE SENT BY TELEX THE PROPER
FORM OF WORDS FOR AN END-USER STATEMENT. THIS WAS SENT TO SHARIF
UNIVERSITY {TELEX NUMBER 214474} ATTENTION COMMERCIAL MANAGER .
CAN YOU PLEASE CONTACT THE END-USER AND EMPHASISE THE IMPORTANCE OF
SENDING THIS END-USER STATEMENT. WITHOUT IT WE CANNOT GET AN EXPORT
LICENCE AND WE CANNOT ACCEPT THE ORDER .

OUR FINANCIAL DIRECTOR HAS LOOKED THROUGH THE L/C AND AS A RESULT MAY
BE CONTACTING SHARIF UNIVERSITY WITH A REQUEST TO MAKE SOME CHANGES .
REGARDS

S J FRASER =

ý213659 ALKH IR

ý665532 VGISOG G *****

Telex # 317

-+057123677

ý123677 OKEL SF =*

ý123677 OKEL SF

IRAN

ý213659 ALKH IRK

26.6.1991

TO OUTOKUMPU-ELEC

FM SIMIA CO./IRAN

ORE 4458

ATTN MR.J.KAIKKONEN

THANK YR FOR YR FAX DD 13.6.91

ý1- RE YMET 880 FOR SHFT,SHARIF UNIVERSITY, WHICH IS PURCHASED
FOR MINING GROUP OF DEFENCE MINISTRY RESEARCH CENTER ,
PLS INFM US IF ANY HELP ARISED FOR SOLVING YR PROBLEMS
FM HERE .

ý2-AZAD UNIVERSITY ,MINING GROUP,OUR FAX 4331/70 IS ANOTH
CUSIOMER AND THEREFORE PLS ISSUE P/I IN 5-FOLDS BASED ON YR
SUGGESTION AND SEND SOON .

"" TWO PROBES AND SOURCES ""

THEY WILL USE THIS YMET BOTH IN LAB AND IN FIELD FOR ORE
PROSPECTING. THEY R AWARE OF CALIBRATIONS .

ý3-AZAD UNIV.MINING SCHOOL,SOUTHOF TEHRAN DPT.IS A SEPARATE
BRANCH AND THEY R INTERESTED TO ANALYSE ALL THE ELEMENTS IN THE
ORE AND CONCENTRATES AND THEY WILL USE YMET FOR ANALYSING THE
FOLOTATION SOLUTION IN THEIR OK-MINIPILOT PLANT TOO .

LKG FWO FOR YR URGENT ACTION TO SEND ABOVE P/I"S BY DHL .

BRGDS-SIMIA CO .

M.TALEBIAN

P =**

ý123677 OKEL SF

ý213659 ALKH IRMMMM *****

Telex # 605

NNNM888481 ***** +

IRAN

Ý213659 ALKH IR8.5.1989

M/S LEYBOLD- HERAEUS GMBH

COATING/ METALIZING DIVISION

OUR REF: 1368-02-18-1/DS

RE COATING PROCESS

- OUR COMPANY AS A CONSULTING /EXECUTOR IS INTERESTED IN STUDYING VARIOUS TYPES OF PROCESS OF MANUFACTURING OF CONTACTS USED IN RELAYS , ETC .

WE WOULD BE GRATEFUL IF YOU COULD PROVIDE US WITH YOUR LITERATURES OF EITHER ELECTROPLATING OR HIGH-VACCUM VAPORIZING PROCESSES. OUR POSTAL ADDRESS IS

Ý189 KASRA BLDG, IRANSHAHR AVE, TEHRAN 15846, IRAN .

SHOULD YOU REQUIRE ANY FURTHER INFORMATION, PLEASE DO NOT HESITATE TO CONTACT ME ON THE ABOVE ADDRESS OR TELEX NO.213659 ALKH IR - .

BEST REGARDS

D.DOLATI /MANAGING DIRECTOR

IRELEDYN CO

M

=

Ý213659 ALKH IRMMMM*****NNN

Telex # 670

88213659 +
ý36511 AIRPRD G
REF : 13091A / 07/01/91 / 17:20
TO : ALKH
FROM A G BEST
SUBJECT : SHARIF UNIVERSITY
TO: MR KHAMENEE BAZEL CO TEHRAN
WE HAVE SENT THE FOLLOWING TELEX TO SHARIF UNIVERSITY
KIND REGARDS
A.G.BEST
CREATOR A G BEST / CREWE/EX
FROM A G BEST / CREWE/EX
TO: SHFT {70088214474} / CRWTLX
TO SHARIF UNIVERSITY OF TECHNOLOGY
ATTN: PURCHASING DEPT
REF YR TLX 1207.407 DTD 3 JAN 91
OUR REF: P/I IR/91/129 DTD 5.12.90
IN ORDER TO ASSIST OUR COOPERATION
WE ARE PLEASED TO CONFIRM AS FOLLOWS
A} WE WILL REDUCE EX WORKS PRICES OF ITEMS 1+2 OF OUR PFI IR/91/129
BY 10 O/O AND EXTEND VALIDITY UNTIL END MARCH 1991 .
B} WE WILL SUPPLY FREE OF CHARGE ONE MODEL 1300 DEEP PURGE ASSEMBLY
SUITABLE FOR FITTING TO A MODEL 912 REGULATOR .
{ THE PURGING CAN BE DONE FROM YOUR NITROGEN SUPPLY {CYLINDER OR LINE
OR FROM VACUUM IF YOU HAVE VACUUM FACILITIES ON YOUR PROCESS LINE .
PLEASE ADVISE WHICH OPTION YOU WILL USE .
PLEASE NOTE THAT ALL EQUIPMENT WILL BE HELIUM LEAK TESTED AND
CERTIFIED. EQUIPMENT WILL BE CLEANED FOR FLOURINE SERVICE ALTHOUGH
YOU WILL BE REQUIRED TO PERFORM FINAL PASSIVATION ON SITE .
ADJUSTABLE BONNET VALVE IS NOT AVAILABLE ON FLOURINE REGULATORS .
PLEASE SEND YOUR OFFICIAL WRITTEN END USE LETTER AS SOON AS POSSIBLE
SO THAT WE CAN MAKE EXPORT LICENCE APPLICATION .
KIND REGARDS
A.G.BEST
EXPORT MANAGER
ý36511 AIRPRD G =

Telex # 70

-+057123677

ý123677 OKEL SF =*

ý123677 OKEL SF

IRAN

ý213659 ALKH IRK

26.6.1991

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