

China's evolving nuclear export control regime

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Abstract

The Chinese nuclear industry is actively pursuing international trade under China's new "Go Global" policy. This development could strain Chinese nuclear export control systems in the coming decades. This paper investigates the evolution of the Chinese nuclear export control regime from the late 1970s to the present, describes the current state of the Chinese export control system, and investigates recent Chinese efforts to build a more robust system. It finds that although the Chinese strategic export control systems have grown tremendously since they first took shape and the capacity of the government to implement these controls has grown as well, significant improvements in both the legal basis for the controls and the capacity of institutions involved are still needed, including in how current laws define exports, in how government bodies are equipped to investigate violations, and in how violations are prosecuted. The Ministry of the Commerce is preparing a new "Export Control Law" that is expected to come into effect soon and to provide the basis for more robust controls that address many of the deficiencies identified above. The Chinese government's growing commitment to undertaking its international obligations and safeguarding the peaceful use of nuclear energy provides reason for optimism, but in the near term, the effectiveness of these corrective efforts will depend on the completion, implementation, and enforcement of the new law.

Introduction

China's nuclear industry has been under development since the 1950s. Currently, the government envisages nuclear power playing an important role in the country's energy decarbonization and in its "Go Global" policy, which entails broadened Chinese exports of goods. Early in the development of its nuclear industry, Chinese attitudes regarding international nuclear nonproliferation cooperation were detached, and Chinese policies rejected its importance. These attitudes began to shift in the late 1970s toward engagement and cooperation in response to the government's Reform and Opening-up policy and the growth in the volume of Chinese foreign trade. As part of this shift, China formulated a set of fundamental export control principles in the early 1980s and put into operation a nascent strategic export control regime. Over time, this regime has grown into a complex system of laws and regulations; executive bodies across different government agencies; approval procedures and penalties; supporting organizations; and regularly updated control lists. These updates have brought the Chinese export control system largely in line with international contemporary norms. In recent years, the Chinese government continues to identify areas of deficiency and strengthen various aspects of its strategic export control regime to fulfill its international obligations and safeguard national security and foreign trade. This paper starts with a review of the development of the Chinese system. It then examines the many levels of the current export control system and describes how it generally works. Finally, it discusses gaps in the system that practitioners have identified and describes continuing efforts to build a more effective system.

The Early Stage: Efforts Since Late 1970's to Early 1990's

After the detonation of its first atom bomb in 1964, the Chinese government articulated its "non-first-use" policy and explicitly rejected the possibility of nuclear weapons cooperation with other countries.¹ At the same time, the government envisioned a future where nuclear weapons were prohibited and eliminated. Yet, during 1960s and most of 1970s, the Chinese government was distrustful of negotiations of arms control and nonproliferation treaties. Even after rejoining the United Nations in 1971, China repeatedly advocated rejecting arms control and nonproliferation efforts dominated by the U.S. and the Soviet governments.

As the global and domestic environments ameliorated in the late 1970s, China changed its strategy for dealing with arms control and nonproliferation issues. The government was motivated by national security reasons and a desire to support the creation of a better environment for economic development. China joined the International Atomic Energy Agency (IAEA) in 1984 and acceded to the Nuclear Non-Proliferation Treaty (NPT) in 1991. Throughout the 1980s, senior government officials held fast to the "three NOs" policy on weapons proliferation, that is, no advocating, no encouraging, and no engaging in the proliferation of nuclear weapons.² Along with these shifts, China began to develop export control policies.

Initially, the government defined three principles to guide its export of nuclear technologies and materials: only for peaceful purposes, subject to IAEA safeguards, and no transfer to any third party without China's prior consent.³ These principles laid the foundation for later legislation and the development of enforcement mechanisms.

Before the late 1970s, state-owned specialized foreign trade companies monopolized all Chinese foreign trade, and they controlled this trade through administrative means. This proved effective at the time, considering the relatively low volume of trade.⁴ In 1978, Chinese international trade was valued at only \$20.6 billion, less than 1 percent of global trade.⁵ As the Chinese economy transitioned rapidly in the early 1980s, the number of private and other non-state-owned enterprises boomed, and many started to trade internationally. As of the early 1990s, more than 2,500 companies had foreign trade rights.⁶ Administrative means were no longer adequate to monitor and control new levels of trade, so the government transitioned to regulation.

The government released the "Temporary Provisions of Export Licensing System" in 1980 to establish an export licensing system and followed that up with "Instructions on Foreign Economic and Trade Cooperation" in 1986, which prohibited technology exports that violated the country's foreign policies and national security interests. The 1993 "Interim Provisions for the Administration of Export Commodities" contained a control list that included heavy water and other dual-use items.⁷

At the time, the China Atomic Energy Agency (CAEA)/China Nuclear Industry Corporation (the successor to the Ministry of Nuclear Industry since 1988) were directly responsible for overseeing the export of nuclear goods; the Ministry of Foreign Trade and Economic Cooperation (the former Ministry of Commerce) was responsible for controlling dual-use goods; and the General Administration of Customs was designated as the enforcement bureau. The Ministry of Foreign Affairs (MFA) played the role of an interpreter of international obligations.

The nascent export control decision procedures were complex, and their effect had limitations, especially in the early years. Export promotion was often given priority over other concerns during decision making.⁸ The China Nuclear Industry Corporation approved exports from its subsidiary companies using "ratification documents" instead of export licenses. The Ministry of Foreign Trade and Economic Cooperation and the General Administration of Customs had limited control over exports from former military industry ministries. And the MFA was not always sufficiently informed of sensitive exports. An inter-ministerial export control coordinating body, the Leading Group of Military Products Exports, was established in 1990 to tackle arms sales and sensitive product issues, but civilian nuclear-related exports were not within its scope.⁹ Many companies and individuals were not fully informed of export control restrictions, adding to the challenge.¹⁰

Establishing the System: Developments from 1994 to Early 2000's

From the mid-1990s onward, the Chinese government started to establish a more comprehensive export control system of nuclear, biological, chemical, missile and other sensitive items and technologies by adopting international standards and practices, formulating and enforcing a number of laws and regulations, and strengthening and improving the means of regulation, among other steps. Not only was the government more convinced at that time of the importance of the international nonproliferation regime for its security interests and regional stability in general, it was also committed to fulfilling its obligations as an NPT nuclear weapons state and to safeguarding the peaceful utilization of nuclear energy. The 2003 “White Paper on China’s Nonproliferation Policy,” which culminated years of planning and development succinctly described the standpoint:

China believes that given the dual-use nature of many of the materials, equipment and technologies involved in nuclear, biological, chemical and aerospace fields, it is important that all countries, in the course of implementing their non-proliferation policies, strike a proper balance between non-proliferation and international cooperation for peaceful use of the relevant high technologies. In this connection, China maintains that, while it is necessary to guarantee the rights of all countries, especially the developing nations, to utilize and share dual-use scientific and technological achievements and products for peaceful purposes subject to full compliance with the non-proliferation goal, it is also necessary to prevent any country from engaging in proliferation under the pretext of peaceful utilization.¹¹

The year 1994 marked a turning point for Chinese export control system development. During that year, the government issued the “Foreign Trade Law of the People’s Republic of China,” which generally outlined the restrictions and prohibitions of exports specified by international treaties.¹² This law formed a new basis for the development of a comprehensive legal system concerning strategic export controls covering nuclear, biological, chemical, and missile areas.¹³ The specific regulations and laws concerning nuclear exports that followed, included:

- The Regulations on Nuclear Export Control (1997, revised in 2006);
- The Regulations on the Control of Nuclear Dual-Use Items and Related Technologies Export (1998, revised in 2007);
- The Administrative Regulations on the Import and Export of Technologies (2001);
- The Administrative Regulations on Safeguards of Nuclear Import and Export and Foreign Cooperation (2002);
- Customs Law of the People’s Republic of China (1987, last revised in 2017).

The responsible authorities involved in executing these laws and regulations then established: (a) an Export Registration System, with which all exporters of sensitive items or technologies had to register; (b) a Licensing System, for approving each export of sensitive items or technologies on

a case-by-case basis; (c) an End-User and End-Use Certification, which was to be prepared by the end-user and authenticated officially, or prepared by a government department of the importing country; (d) Control Lists, covering virtually all materials and technologies included in the control lists of all international nonproliferation agreements, which were updated in a timely fashion; (e) the Principle of Nonproliferation-oriented Examination and Approval, which set the rules for the competent government department to decide on issuing an export license; (f) a Catch-all Principle that required exporters to identify potential proliferation risks and the government department qualified to assess that risk, particularly for items not contained in the relevant control list; and (g) Penalties, including criminal liabilities and administrative sanctions.¹⁴

Until the early 2000s, export control responsibilities were clearly designated to different government agencies. Nuclear exports were dominated by a few government-designated companies and were regulated by the CAEA, which became an independent organization amid a series of government reform efforts in 1998 and was then brought under the Ministry of Industry and Information Technology in 2008.¹⁵ Nuclear dual-use item exports were overseen by the Ministry of Commerce, which was reorganized from the former Ministry of Foreign Trade and Economic Cooperation in 2003, and co-reviewed by CAEA. The MFA was also involved as necessary. Export items with vital influence on national security and public interests were forwarded to the State Council and the Central Military Commission for examination and approval. The General Administration of Customs (GAC) monitored the exports and imports en route.¹⁶ After the CAEA became independent, the China Nuclear Industry Corporation, which was reorganized as China National Nuclear Corporation (CNNC) in 1999, no longer bore government export control functions.

Toward a Robust System: Recent Endeavors and Current Status

While the government was developing its export control system and fine-tuning its implementation, challenges and complications arose, and emerging proliferation risks were revealed. The Chinese government has made continual improvements to the system, including amending laws, institutions, and industry internal control programs, and conducting additional education and training for users and officials.

Regulations and Control lists. The government has amended laws and regulations as necessitated by evolving situations and international obligations. The current system is organized in three levels: laws, regulations, and ministerial decrees. The combination addresses all the fields of concern and is intended to be in line with international standards and practices.¹⁷

The “Foreign Trade Law” and the “Customs Law” serve as the basis for export control implementation. The “Foreign Trade Law” was revised in 2004, and the “Customs Law” was last

revised in 2017. In addition, the “Criminal Law” (as revised in 2001) made the illegal manufacturing, trading, and transportation of radioactive materials a crime, and remains an important basis for upholding export controls.¹⁸

The guiding regulations for nuclear export control, “The Regulations on Nuclear Export Control” (1997) and “Regulations on the Control of Nuclear Dual-Use Items and Related Technologies Export” (1998), were revised in 2006 and 2007, respectively, reflecting new Chinese obligations after joining the Nuclear Suppliers Groups in 2004.¹⁹ The initial “Regulations on Nuclear Export Control” forbade providing assistance to nuclear facilities not under IAEA safeguards, and the 2006 revised version further requires the importing state to have comprehensive IAEA safeguards in place.²⁰ Other important amendments saw the inclusion of measures addressing intangible technology transfers (ITT), customs inquiries, company internal compliance requirements, a “catch-all” principle, the establishment of an Export Control Consulting Committee, and the authorization for the Ministry of Commerce and the GAC to seize suspicious goods.²¹

Together, the control lists of “The Regulations on Nuclear Export Control” and “The Regulations on the Control of Nuclear Dual-Use Items and Related Technologies Export” include all items and technologies set out in the control lists of the Zangger Committee and the Nuclear Supplier Groups, and are frequently updated and published. The “Nuclear Export Control List” and “Nuclear Dual-use Items and Related Technologies Export Control List” were most recently updated on 27 June 2018 and 11 December 2017, respectively.

Besides laws and regulations, there are several ministerial decrees that apply to dual-use items and technologies to be exported. These decrees essentially set out approaches to putting the export control regulations into work. The “Measures on the Administration of Export Registration for Sensitive Items and Technologies” was promulgated in 2002. In 2006, the “Measures for the Administration on Import and Export License for Dual-use Items and Technologies,” which was based on a provisional regulation published at the end of 2003, took effect.²² These measures require that a “Catalogue of Dual-Use Items and Technologies Subject to Import and Export License Administration” be issued and updated regularly. The catalogue consolidates the control lists attached to individual regulations involving nuclear, biological, chemical, and missile strategic export controls and covers all dual-use goods and technologies. Standard “HS codes” are assigned to goods involved in relevant control lists to facilitate monitoring. The catalogue is updated annually and was most recently updated on December 28, 2018. In 2009, the “Measures on General Permit for Export of Dual-Use Items and Technologies” took effect with the aim of more simplified and efficient procedures and encouraged higher levels of self-discipline and internal control among enterprises. A “general permit” is an approval document with a specified scope and validity period, based on which exporters with good records can apply licenses in a batch, compared with the basic “one-approval-one-license” approach.^{23, 24}

In response to emerging proliferation risks and in support of UN Security Council resolutions that involve sanctions against nuclear proliferators, the government has taken additional measures. In 2013, in accordance with UN Security Council Resolutions 1718, 2087, and 2094, the Ministry of Commerce and other authorities published the 236-page “List of Dual-Use Items and Technologies Banned from Export to DPRK.” As the threat from North Korea escalated in the following years and the UN Security Council issued several Resolutions, four “Additional Lists” have been announced (on June 14, 2016; January 25, 2017; February 5, 2018; and April 8, 2018, respectively) since 2016 for implementing these resolutions.²⁵

Regulatory Agencies and Duties. As part of a 2008 government restructuring, the CAEA was brought under the Ministry of Industry and Information Technology (MIIT), where it still regulates nuclear item and technology exports. The State Nuclear Security Technology Center (SNSTC) was founded in 2011 as a supporting center to CAEA in areas including nuclear security, nuclear material accounting, nuclear import/export regulation and international cooperation, and provides fundamental support in the CAEA approval procedure.

Within the Ministry of Commerce, a new regulatory body, the “Bureau of Industry, Security, Import and Export Control” (BISIEC), was set up in 2014 by combining two former divisions. The new bureau’s six functional units include the Division of Policy Planning, the Division of Industrial Competitiveness, the Division of Security Review, the Division of Licensing, the Division of Investigation and Enforcement, and the Office for General Affairs. In addition to export licensing, the Bureau’s responsibilities cover violation investigation and administrative punishments on violators including license withdrawals and fines.

The BISIEC website provides two online functions to facilitate the export and import license application process. The first is a process for “Dual-Use Items and Technologies Import and Export Approval,” including business registration and export license approvals. The other is an “End-User and End-Use Certification” process for importers.²⁶ In recent years, the Bureau has consistently improved the license system and optimized the approval processes. According to Ministry of Commerce’s annual summaries since 2015,²⁷ a major endeavor has been increasing administrative service capabilities by perfecting the online administration platform functions to streamline application and approval management, ease the burden of exporting enterprises, and enable export control data analysis. Other efforts include inter-ministry consultation to tackle regulatory problems, inspections of General Permit holders to identify corrective measures, and pre-acceptance and pre-examination consultations to facilitate communication of potential problems. More recently,²⁸ the Ministry reported to have been enhancing law enforcement efforts against violations by setting up a formalized workflow from approval and supervision to illegal action investigation.

The MFA set up a new Non-Proliferation Division in 2014 that focuses on nonproliferation and

affairs related to export control, especially case investigation. The MFA also designated a nonproliferation coordinator, to be based in the Arms Control Department, who coordinates efforts among relevant Chinese ministries and communicates with international partners. MFA also set up nonproliferation attachés in key countries to further promote nonproliferation cooperation.²⁹

The GAC supervises the export of controlled items and technologies based on “the Customs Law” and other regulations. Its enforcement efforts include illegal export investigation and administrative penalties. Customs offices conduct monitoring and identify potential violations in accordance with risk analysis based on internal and external information. Exports questioned by customs officials concerning sensitive dual-use goods are sent to be examined by the Ministry of Commerce and the decisions to clear are made based on official responses from the Ministry. Other technical tools include chemistry tests in laboratories and nonintrusive inspection technologies.³⁰ A new system for enterprise credit management was launched by GAC in 2015 and was revised and formalized in 2018. Under this new system, enterprises with good credit records are qualified as Advanced Authorized Enterprises (equal to an international AEO qualification) and enjoy convenient customs clearance measures, while those in “the List of the Dishonest Enterprises” are subject to higher inspection rate and other more stringent control measures. The GAC List of the Dishonest Enterprises is maintained based on annual violations and annual penal sum among other factors. It contains over 6,000 names as of 2019.

Recognizing the challenges posed by the variety of government agencies involved in export controls, the Chinese government established an inter-agency export control coordination mechanism in 2004 to promote assessments and investigations of emergent violation cases by defining in detail the duties, tasks, and work procedures of relevant export control agencies. Over the years, this mechanism has been strengthened with additional supports from agencies in fields such as sea transportation, banking, and intelligence,³¹ and has provided an institutional safeguard for effective handling of such cases.³²

The Chinese export control agencies regularly seek support from research institutes and experts in relevant fields. In December 2003, the China National Export Control Expert Support System was established with 240 leading experts with a range of backgrounds.³³ The system is comprised of two groups: One includes policy experts who interpret international policies and the other includes technical experts who support export assessments and investigations.³⁴ In 2006, the CNNC Key Laboratory of Nuclear Nonproliferation and Nuclear Security was founded at the China Institute of Atomic Energy. The laboratory acts as a technical support center in the fields of nuclear security, nuclear material management, and nuclear import and export management.

Industry Compliance. Industry compliance is critical to the success of any export control regime. The Chinese government sees strict industry compliance with national export control laws and

regimes as both safeguarding national security and the public interest, and necessary to gain the trust of international partners, to exploit foreign markets, and to facilitate China's role in the global economy.³⁵ In 2007, The Ministry of Commerce published "Guidelines Regarding Setting Up Internal Export Control Programs in Dual-Use Items and Technologies Marketing Enterprises" (the Ministry of Commerce Announcement N. 69 2007). The guidelines describe the required elements of an Internal Control Program (ICP), including policy, organization, review procedures, management manual, training, and documentation. The guidelines also emphasize the need for a "catch-all" control in building an IPC. All enterprises conducting research, production and export/import are encouraged to build ICPs.

In evaluating a company's license applications, the presence of an IPC is favorably looked upon. A company with an ICP can be expected to benefit from shorter license-application-processing times and customs-clearance process times, compared with one without an ICP.³⁶ Any company applying for a General Permit for export is required to have an effective ICP, in addition to a catch-all principle, active awareness of policies and regulations, and regular reporting. For companies with a general permit, the benefits are shorter license-processing time and lower export cost. On the other hand, the export control agencies benefit from higher regulation effect and efficiency and resource focus. In this way, the adoption of general permits could cultivate awareness and self-discipline among exporting enterprises. In 2018, the Commerce Bureau of Hebei Province announced that Hebei had become the first province in which all trading businesses of dual-use goods and technologies had implemented ICPs—all of which were qualified against set criteria.

Training Programs. Since the success of nuclear export controls depends on the behaviors and coordination of different government agencies and businesses located throughout a country, the Chinese government has prioritized training programs for industry and foreign trade enterprises to improve the capacity of compliance officers, who are regarded as a critical component in the broader system. In addition to general training programs, training for officers implementing nuclear-related export controls are regularly initiated by the CAEA, the Ministry of Commerce, the China Arms Control and Disarmament Association, industry parties, such as the China National Nuclear Corporation, and others. Some of these trainings involve foreign and international organizations. For example, CAEA and the IAEA established a Joint Training Center on Nuclear Safeguards and Nuclear Security in 2006, which provides training and organizes seminars related to export controls, among a range of other topics.

The main state-owned nuclear industry enterprise, CNNC, regularly holds internal training programs with help from multiple regulatory authorities such as CAEA and the Ministry of Commerce. Direct support comes from the State Nuclear Security Technology Center. Recent training courses sponsored by CNNC involved personnel from more than 30 CNNC subsidiaries and focused on implementing the "Go Out" policy and strengthening international cooperation.³⁷

The government has also held special training workshops to help businesses deal with emerging proliferation concerns. For example, the Ministry of Commerce organized a 2006 workshop in Dalian focusing on helping businesses working with graphite-related products comply with expanded export control regulations for graphite products. The Ministry of Science and Technology also held a 2016 workshop focusing on export control issues related to nuclear fusion technology.

Challenges and New Legislation Endeavors

In 2018, Chinese companies participated in \$4.4 trillion worth of international transactions, with the volume of exports increasing to \$2.37 trillion. In total, more than 470,000 enterprises were involved in these transactions.³⁸ Despite the fact that relatively few companies are involved in the trade of sensitive goods and controlled items, the overall growth of foreign trade and the large number of companies involved increase pressures on monitoring and control systems.

This problem will be compounded by expected growth in legitimate nuclear exports over the coming decades. China's nuclear industry is expanding into overseas markets under the "Go Global" policy and promise to increase the export of large and small nuclear power reactors, nuclear fuel products, and radioactive isotopes, among others. Some of these systems involve many dual-use components, materials, and technologies from smaller businesses. China's large and diverse streams of exports and imports make it prone to be targeted by potential proliferators looking to acquire or transit sensitive items.³⁹ Orders from front companies abroad further complicate the process of end-user/end-use verification. For instance, the Ministry of Commerce has denied export licenses of variable frequency drives (VFD) in the past based on the importing country, lack of purchaser information, technical specifications and quantity of the order.⁴⁰ In this respect, as observed by some authors,⁴¹ although large companies have successfully implemented ICPs and are strongly incentivized to keep good records, many small- and medium-sized ones haven't built ICPs due to personnel and financial constraints and infrequent sensitive exports. The government agencies recognize these difficulties and sponsor outreach events to engage smaller companies to improve awareness of the controls and compliance with practices.

Some of the existing export control system's challenges relate to the disparate legal foundations of the system. The basis for China's entire strategic export control system (which includes controls relating to nuclear, chemical, and biological technologies, as well as missiles), is scattered among a diverse set of laws, regulations and ministerial decrees (some of which are out of date) that engage a wide range of government agencies. This complicated mix of strictures has led to unintentional violations and further added to regulatory burdens.

The Chinese Academy of International Trade and Economic Cooperation (CAITEC), an institute under the Ministry of Commerce, has studied the system in depth and found a number of specific

gaps in current laws and in the regulatory system.⁴² One concern is that current laws and regulations don't always assign specific agencies responsibility for specific export control system procedures or functions; instead some duties are loosely deduced from legal descriptions. Another is that export control violations are often prosecuted on the basis of criminal law, rather than administrative law (convictions can be for smuggling, illegal business operations, or divulgence of state secrets), which leads to incoherence in the severity of punitive measures. Those agencies assigned tasks also often lack the authority to detain or examine potential violators or to gather suspicious goods and evidences; they have to call the police to take certain enforcement actions. A Ministry of Commerce report notes that many enforcement officers are incapable of investigating and handling even a few suspicious cases.⁴³

There are also some important weak spots in current laws and regulations. For example, according to the CAITEC study, though officials have deemed the control of intangible technology transfers as a crucial element of the system, formalized administrative approaches and review procedures for such transfers need further improvement. Similarly, current controls for transit goods, transshipment goods and through goods need enhancing with additional institutional measures. Also, the legal definition of an "export" needs to be reinterpreted to include, say, non-cross-border trade as falling under the jurisdiction of strategic controls. The 2006 and 2007 regulations began to respond to this need by defining the scope of "export" to include exhibitions, assistance, S&T cooperation, services and "other ways of transfer", and new control measures recently initiated by the Ministry of Commerce have further broaden the scope to include more means such as leasing.⁴⁴

The export control law. In response to these challenges, the government is submitting a legislative proposal to the National People's Congress to restructure the legal underpinnings of the control system. The Ministry of Commerce led the efforts by a dozen government agencies to draft a new "Export Control Law," with the aim of safeguarding national security and interests, enhancing the current laws, and increasing compliance with international obligations. A draft of the law was published online in June 2017 for public consultation and was submitted to the State Council for review in 2018. The new law is included in the "2019 State Council Legislation Work Plan" published in May 2019.⁴⁵

According to the published draft text, the new law will form a sound foundation to address existing gaps in the current system. For instance, the draft includes a broader definition of an "export" that includes "the transfer of regulated items from Chinese citizens, legal persons and organizations to foreign citizens, legal persons, and organizations,"⁴⁶ regardless of whether the transfer happens across an international border or within national borders. This shift will reinforce the government's jurisdiction over intangible technology transfers. The draft also contains a list of trade-related criminal offenses that is longer and more comprehensive than current law. For instance, it lists license fraud, conspiracy to work with violators, and impeding strategic control investigations as crimes. The draft also stipulates heavier penalties for violations

and sets out in detail new enforcement powers for export control authorities, such as the ability to conduct field investigations, question related individuals, detain items, freeze bank accounts, etc. Other amendments to the current system include setting up a blacklist of foreign importers and end-users; the assertion of extra-territorial effects; and measures regarding transit goods, transshipment goods and through goods, etc.⁴⁷

Government agencies and related parties are also drafting new atomic energy and nonproliferation laws. The new “Draft Atomic Energy Law” passed the internal review of the Ministry of Justice recently and is likely to be introduced publicly later this year.⁴⁸ The draft law, published on September 20, 2018, focuses on encouraging civil atomic energy research and development, and includes an article on export control administration, treaty compliance, and nonproliferation. The new nonproliferation law being drafted by the Ministry of Foreign Affairs focuses on enhancing the current legal system, by expanding nonproliferation goals and defining specific duties and rights for citizens.

Conclusion

China’s nuclear export control system has undergone an important transition from an administrative mode of operations in the 1980s to the modern, regulation-based system in place today. In the 1990s, the current system took shape on the foundation of the Foreign Trade Law and other cornerstone regulations. The buildup of a comprehensive regulation system that conforms to international standards and practices followed in the early 2000s.

Early in this process, Chinese experts identified a number of areas where the system needed continued improvement. As such, the government invested significant resources to make the strategic control system more effective and efficient overall, by streamlining approval procedures, establishing ICPs in enterprises, and conducting training programs for enterprises and compliance officers. The Chinese government also learned to value international cooperation and outreach as important to strengthening the system.

In general, the Chinese commitment to nuclear nonproliferation and nuclear export controls has never been stronger. Official statements outline the importance that the Chinese government places on strategic export controls to protect national security and interests and make clear that China is willing to bear certain obligations as a responsible nuclear power to promote regional stability, and to safeguard the peaceful use of nuclear power.

Yet, the current system reveals specific failings, for instance, the lack of effective ICPs in some small- and medium-businesses and the inadequacy of enforcement capabilities in some cases. Expected increases in the number of legitimate nuclear exports during the coming decades will only compound the challenges faced by the Chinese nuclear export control system.

The Chinese government appears to have the appetite to address these challenges going forward. In the short term, passage of a new Export Control Law that closes some of the gaps in existing legislation is being prioritized. This new law is expected to elevate the entire export control system within the national legal hierarchy, which should lead to greater enforcement capacity and more coherent penalties for violation. The new law will also refresh the system's overall approach and best practices, including a broader definition of "export" and measures to address other gaps in the current system.

Together, these efforts demonstrate the Chinese government's commitment to building and improving the export control regime for the sake of national security and interests and the international nonproliferation struggle. A strong Chinese nuclear export control regime should also contribute to the broader global agenda of decarbonizing the economy with nuclear and other alternative energies in the coming years.

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NOTES:

¹ See the speech by former Vice Premier and Foreign Minister Chen Yi, cited in Fan Jishe, "Nuclear Nonproliferation: China's Thinking and Practices," in L. Bin & T. Zhao ed. *Understanding Chinese Nuclear Thinking*. (Carnegie Endowment for International Peace, 2016), p.198.

² See Wang Jia, "China's View on the Road Map to Nuclear Disarmament," in L. Bin & T. Zhao ed. *Understanding Chinese Nuclear Thinking*. (Carnegie Endowment for International Peace, 2016), p.106.

³ See Permanent Mission of the People's Republic of China to the United Nations Office at Geneva and Other International Organizations in Switzerland, "China's Nuclear Export Control". 15 Apr. 2004. <http://www.china-un.ch/eng/cjkc/cjblc/cjlc/t85382.htm>

⁴ See State Council Information Office, *White Paper on China's Non-Proliferation Policy*, 2003. An English version is available at <http://www.china.org.cn/english/2003/Dec/81312.htm>

⁵ Information Office of the State Council. Foreign Trade of China. Dec. 2011. http://www.gov.cn/zwggk/2011-12/07/content_2013475.htm

⁶ See Weixing Hu, "China's nuclear export controls: policy and regulations", *The Nonproliferation Review*, Winter 1994. p.8.

⁷ See Wang Jun, "The Transform of China Nonproliferation Policies after the Cold War and Analysis of Causes", *Pacific Journal*, No. 4. 2002. p.64; also see Weixing Hu (1994). p.7.

⁸ See Yan Cong, "Evolution of China Nonproliferation Export Control (in Chinese)," *Economy*, No. 6, 2012. p. 64.

⁹ See Weixing Hu (1994). p.8.

¹⁰ See Li Genxin and Sun Jinzhong, "On China's Export Control Policy," *China International Studies*. No. 3,

2007. p.12.

¹¹ See State Council Information Office (2003).

¹² The *Foreign Trade Law* was adopted on May 12 1994, came in to force in July 1 1994, and was last revised in 2004. The full text is published at http://www.gov.cn/flfg/2005-06/27/content_9851.htm

¹³ Permanent Mission of the People's Republic of China to the United Nations Office at Geneva and Other International Organizations in Switzerland, "China's Non-Proliferation Policy – Positions and Measures," June 3, 2004. <https://www.fmprc.gov.cn/ce/cgvienna/eng/dbtyw/hplyhn/t127620.htm>.

¹⁴ See State Council Information Office (2003).

¹⁵ Re-founded in 1998 as a civilian government agency. The former COSTIND was reorganized as the People's Liberation Army General Armaments Department.

¹⁶ See State Council Information Office (2003).

¹⁷ See Cheng Hui, "Improvements of China's Export Control Legislation," *Journal of International Economic Cooperation*. No. 6, 2012, pp. 88-91.

¹⁸ See the *National Report of the People's Republic of China on the Implementation of the Treaty on the Non-Proliferation of Nuclear Weapons*, 2019, available at:

https://www.fmprc.gov.cn/web/wjb_673085/zzjg_673183/jks_674633/jksxwlb_674635/t1659431.shtml

¹⁹ See China Arm Control and Disarmament Association, "The Nonproliferation Policies and Measures of China," Nov 19, 2018. <http://www.cacda.org.cn/a/chukoukongzhi/20181119/4088.html>

²⁰ Section 3 in Article 5 of *The Regulations on Nuclear Export Control*.

²¹ See Xiaoming Liu, "Upgrading to a New, Rigorous, System – Recent Developments in China's Export Controls," RUSI Occasional Paper, March 2016. pp. 3-4. Available at:

https://rusi.org/sites/default/files/201603_op_upgrading_to_a_new_rigorous_system_en.pdf

²² For the provisional regulation on license, see Ministry of Commerce webpage at

<http://www.mofcom.gov.cn/aarticle/b/f/200402/20040200176918.html>

²³ For the overall system, see Wang Xiongguang, "Legislation of China's Export Control", The 24th Asian Export Control Seminar. Feb 21-23, 2017. Available at

https://supportoffice.jp/outreach/2016/asian_ec/pdf/day1/Day1_1645_Mr.%20Wang%20Xiongguang.pdf

²⁴ For a description of general permits, see "Head of Industry Division of Ministry of Commerce interpreting Measures on General Permit for Export of Dual-Use Items and Technologies", published by Ministry of Commerce on 19 May 2019. Available at:

<http://www.mofcom.gov.cn/article/zhengcejd/bl/200905/20090506260940.shtml>

²⁵ See the announcement and lists on the website of the Ministry of Commerce at

<http://aqygzj.mofcom.gov.cn/article/glml/>

²⁶ See the website of the bureau at: <http://aqygzj.mofcom.gov.cn/>

²⁷ See State Council Information Office, Year End Summary of Ministry of Commerce Section 7. Feb 22, 2016. Available at:

<http://www.scio.gov.cn/xwfbh/xwfbh/wqfbh/33978/34188/xgbd34195/Document/1469319/1469319.htm>

²⁸ See 2016 Commercial Work Yearend Summary Part 6. Ministry of Commerce. Published online on 30 December 2016. Available at: <http://www.mofcom.gov.cn/article/ae/ai/201612/20161202436410.shtml>; 2017 Commercial Work Yearend Summary Part 17. Ministry of Commerce. Published online on 29 January 2018.

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²⁹ Xiaoming Liu (2016).

³⁰ Joint EU - China Handbook on Export Control of Dual-Use Items VOLUME 1. Federal Office for Economic Affairs and Export Control. 2017. Available at:

https://www.bafa.de/SharedDocs/Downloads/DE/Aussenwirtschaft/afk_outreach_eu_china_handbook_voll_c hn.html

³¹ Xiaoming Liu (2016).

³² See Joint EU - China Handbook on Export Control of Dual-Use Items.

³³ Interview of Liu Jieyi, head of the Department of Arms Control of MFA. *World Knowledge*. No. 24, 2003. pp. 62-63.

³⁴ Wang Yu & Zhang Yi, "China Has Established Comparatively Comprehensive Nonproliferation Export Control System," (Xinhuanet), Dec 4, 2003. <http://news.sina.com.cn/c/2003-12-04/20161258589s.shtml>

³⁵ See the Ministry of Commerce, "Announcement of the Ministry of Commerce No. 69, 2007," Aug. 29,

2007, available at <http://www.mofcom.gov.cn/aarticle/b/c/200709/20070905071676.html>

³⁶ Xiaoming Liu (2016).

³⁷ See news reports on CNNC export control training courses, one example is available at <http://www.cnn.com.cn/cnnc/300555/300558/508591/index.html>

³⁸ “Total Import and Export Value Exceeds 30 trillion RMB,” *People’s Daily Overseas Edition*. Jan. 15, 2019. Available online at: http://www.gov.cn/xinwen/2019-01/15/content_5357909.htm

³⁹ For example, see Xiaoming Liu (2016), p.12.

⁴⁰ Strengthening Technologies and Operating Capabilities and Implementing Trade Controls of Dual-Use Items and Weapons – A TEWG Workshop in Vienna. 2016. SAFEWORLD and CAITEC. Available at: <https://www.saferworld.org.uk/downloads/pubdocs/-fco-report.pdf>

⁴¹ Xiaoming Liu (2016).

⁴² See Cheng Hui (2012).

⁴³ Explanations Regarding the Drafting of Export Control Law of PRC. The Ministry of Commerce. 2017.

⁴⁴ See “Announcement of the Ministry of Commerce and General Administration of Customs No. 28 in 2017”. Available at: <http://aqygzj.mofcom.gov.cn/article/zcgz/201705/20170502582557.shtml>

⁴⁵ See the State Council General Office, 2019 State Council Legislation Work Plan, May 2019. Available at: http://www.gov.cn/zhengce/content/2019-05/11/content_5390676.htm

⁴⁶ See the Draft of Export Control Law published on the website of the Ministry of Commerce in 2017. Available at: <http://tfs.mofcom.gov.cn/article/as/201706/20170602594467.shtml>

⁴⁷ As is implied by the CAITEC study (Cheng Hui, 2012), the new law may be followed by a new, holistic regulation on export control in the future replacing the current regulations, to provide a systematic and up-to-date legislation basis for future regulators.

⁴⁸ See speech by vice director of China Atomic Energy Agency Zhang Jianhua at the China Nuclear Energy Sustainable Development Forum on Apr. 1, 2019, available at: <http://www.cnnpn.cn/article/16188.html>