**Position Paper on the International Atomic Energy Agency**

*Topic 1: Nuclear Terrorism*

Nuclear attacks are catastrophic in nature and the wrongful perpetration of nuclear violence may lead to severe human and capital losses. In prevention of nuclear material theft and other terrorist activities, China has enforced rigorous regulation under its National Nuclear Safety Agency (NNSA)[[1]](#footnote-1). In 2014, China invited a 22-member IAEA task force to review its security measures, and the commission concluded that the review provided “confidence in the effectiveness of the Chinese safety regulatory system and the future safety of the vast expanding nuclear industry.”[[2]](#footnote-2) Most fundamentally, China identifies three areas for ensuring successful deterrence of nuclear terrorism: preventing theft of nuclear material, counteracting attacks on nuclear facility, and de-escalating state-led nuclear attacks.

The theft of nuclear material is the biggest risk to enabling terrorist, extremist, or organized crime organizations to build atomic bombs and threaten the freedom and security of the world’s population. First, measures defending against external violations must be strictly enforced, such as modern fences, intrusion detection, vaults, or delay tactics. Condensing nuclear stockpiles into less centers would render defence more cost efficient for nations. Second, defence against internal threats, as observed in the sabotage of Belgium nuclear plant in 2014[[3]](#footnote-3), could be improved with tracking of nuclear material, internal surveillance, automated production, and the ‘two-person rule’. China also observes that technological developments has brought new challenges to nuclear security, and countries should follow China’s example in developing the nuclear security Center of Excellence in 2016 to address cyber security[[4]](#footnote-4). In particular, China urges that civilian nuclear activities producing highly enriched uranium (HEU) or plutonium to adapt to production using lightly enriched uranium, in order to decrease the risk of nuclear theft[[5]](#footnote-5). In worst-case scenarios, the international community should provide a joint program to retrieve missing nuclear material by information sharing and ensure secure transportation of nuclear material.

To counteract attacks on nuclear facility, nations should establish a design basis threat (DBT) approved by IAEA, including human and natural disasters, to target specific threats. Furthermore, a contingency plan must be better outlined to prevent further theft or human loss in the event of a catastrophe, including evacuation protocol, retrieval and re-containment of nuclear material, or public education.

In addition, China identifies that state factors may threat the use of nuclear violence, as suggested by the instability of regimes such North Korea or Pakistan. China urges all nations to progress toward gradual global disarmament following the Strategic Arms Reduction Treaty (START 1), new START, or the Strategic Offensive Reduction Treaty[[6]](#footnote-6). China also sees its 2013 program of converting nuclear war-head to fuel as a pioneering example of incentivizing, effective disarmament strategy. Furthermore, diplomatic cooperation must be established or restored, in order to provide long-term incentives instead of coercion for unstable state to pursue rational nuclear decisions. Global cooperation and more transparency would further reduce risk of state-led terrorist activities.

Overall, China strives to remain vigilant in promoting security culture domestically and internationally, where policy makers and involved personnel constant realize and take responsibility for the threat of nuclear terrorism and adopt a mentality of progress and reflection. Measures to implement the fight against complacent mentality include educational workshop, and situation-based stimulations or discussions. China is excited to collaborate with the foreign governments, intergovernmental organizations, civil society, media, corporations, or academia in securing further reduction in weapon-level nuclear material worldwide, as well as eliminating terrorist actors.

*Topic 2: Nuclear Energy as an Alternate Source of Energy*

In light of environmental catastrophes threatened by increasing global carbon emission, nuclear power is explored as a sustainable alternative source of energy, and currently 2.8 trillion kilowatt-hours of electricity is generated annually through nuclear power[[7]](#footnote-7). In China, where air pollution has caused serious health and economic concerns[[8]](#footnote-8), the government has prioritized development of 35 nuclear power reactors in operation and many more under construction or in planning[[9]](#footnote-9). China aims for self-sufficiency in the nuclear fuel cycle and exporting nuclear technology in the future. However, given the volatile nature and destructive power of nuclear reactions, the risks and detriments of nuclear power must be mitigated through rigorous guidelines developed by the international community in collaborative spirit, as seen by the *Radioactive Waste Safety Standards Programme (RADWASS)* commissioned by the IAEA, the *Joint Convention on Nuclear Safety[[10]](#footnote-10)*, or Chinas own NNSA. China believes that key issues toward safer and more progressive nuclear energy harvest include more efficient mining, enrichment, and fabrication of uranium, safer nuclear power plant designs, and appropriate treatment of nuclear waste.

First, standard underground mining and in situ leaching methods must be reviewed by the IAEA or other National agencies for groundwater contamination or other environmental damages, and new techniques such as extraction of uranium from seawater may be developed to make available 4.5 billion metric tons of uranium supply[[11]](#footnote-11). To mitigate the cost of uranium enrichment and fabrication, the by-product of depleted uranium may be recycled in producing mixed oxide fuel or in diluting enriched uranium from dismantled weapons, which may then be converted to reactor fuel.

Second, fundamental improvements in the sustainability, economics, safety, reliability, and proliferation-resistance of nuclear reactors would better nuclear energy production. As a member of the Generation IV International Forum (GIF)[[12]](#footnote-12), China is committed toward the development and implementation of molten-salt fast reactors, sodium-cooled fast reactors, very high-temperature gas reactors, and other innovations[[13]](#footnote-13). In addition, the Asian Infrastructure Investment Bank (AIIB) is willing to aid any nation to engage in the Generation IV or Generation III projects. Furthermore, nuclear power plants should also be improved in terms of inspection and regulation, working conditions, defense against terrorist attack, or emergency protocols.

Lastly, the treatment of nuclear waste could be improved through developments in re-processing techniques, where extracted plutonium from spent lightly enriched uranium (LEU) would be diluted with depleted uranium oxide through a MOX fabrication plant[[14]](#footnote-14). Alternatively, newer techniques such as fusion-fission hybrid reactors promises elimination of nuclear waste, and needs to become a research priority[[15]](#footnote-15). Regarding the long-term storage of high-level waste (HLW), China is willing to lead the initiative toward developing a global geological repository where small-user nations would especially benefit from reduction in infrastructure cost. With revenue possibly sustained through lease contracts with other nations, this facility will explore aqueous reprocessing or advanced electrometallurgical reprocessing techniques which could potentially reduce the time for radioactivity to degrade to standard level from 300,000 years to only 300 years[[16]](#footnote-16). In complement with this initiative, transportation protocols must encourage further harmonisation and reduce over-regulation in authorisation.

Overall, China believes that nuclear energy should become more transparently regulated to counter the public fear of a nuclear catastrophe. If necessary, public awareness campaigns in collaboration with IAEA or other atomic energy authorities should emphasize the safety and environmental sustainability guaranteed through nuclear power. China urges all nations to streamline the political decision making regarding nuclear power, adhere to international regulations, and collaborate on technological developments. In time, China will achieve its goal of reducing CO2 emission by 65% from 2005 levels by 2030[[17]](#footnote-17), and the world will achieve a more sustainable pattern of energy consummation.

*Topic 3: Measures to implement and enforce the nuclear program in Iran*

In the recent signing of the Joint Comprehensive Plan of Action (JCPOA) between Iran and E3/EU+3 nations, hope of nuclear non-proliferation is introduced to a nation with a turmoil history. However, challenges remain in not only the implementation of the JCPOA fraught with mistrust, but also the uncertain future beyond the decade of non-proliferation outlined in this plan. China believes that the suppression of Iran’s right to nuclear energy would only result in further antagonizing relations, and, rather, China proposes to build more incentive based instead of coercion based collaboration, in contrast with previous sanctions and restrictions imposed in Iran.

In implementing the JCPOA, the presence of IAEA bodies in Iran to assess the adherence to set standards and guidelines is essential toward establishing trust between the E3/EU+3 nations and Iran. Yet in exchange, the international community should adhere to the agreement to uplift relevant sanctions in order to show good faith toward Iran. In fact, China believes that imposing sanctions would only further antagonize the Iranian government, and under Western threat the regime is more likely to respond with irrational pursuit of nuclear weapons. The conflict resolution mechanisms outlined in the JCPOA would be most effective when two consensual, equal parties are in good faith of each other.

In the long-term, China identifies the root motivation of nuclear development in Iran as regional tensions which escalated the need for nuclear stockpile for deterrence. Even under the present JCPOA, Iran’s knowledge and technical ability enable it to pursue a nuclear program after the agreement lapses and pose further threat, and the most effective way to prevent future proliferation is to demotivate Iran addressing the root conflict. Thus, China intends to lead a regional disarmament agreement involving India, Pakistan, Iraq, Israel, and Iran which will complement the existing Western based JCPOA. Under this disarmament plan, a comprehensive set of regulatory and review initiatives will be conducted in cooperation with the IAEA, and dispute resolution would be first conducted through multilateral negotiations before being arbitrated by IAEA and the UN Security Council. This initiative may provide a beginning to establishing non-hostile relationships between currently tense countries.

In addition to demotivating Iran’s nuclear weapon development by establishing more regional stability, economic incentives instead of restrictions may further influence the Iranian leadership to commit to long-term nuclear non-proliferation. China proposes a joint investment of nuclear-energy network by E3/EU+3 nations and Iran, where for the first eight years, under which Iran has agreed to limit all uranium enrichment program, E3/EU+3 nations along with the IAEA would rigorously oversee the production of lightly enriched uranium for sole purpose of energy production, research, and other peaceful applications. Electricity revenue contributing to the economic prosperity of Iran following decades of economic sanction would incentivize the government to continue allocation of uranium sources toward energy development instead of proliferation. The joint economic effort would also become a first step toward normalization of diplomatic relations between Iran and western nations, which would further incentivize Iran to comply with international regulations such as the Non-Proliferation Treaty (NPT). In fact, China serves as a pioneer for re-establishing sustainable economic ties with Iran, as in January 2016 China has mapped out a 25-year plan during a visit of China’s leader Xi Jinping, the first diplomatic encounter following a 14-years period of isolation in Iran[[18]](#footnote-18). Bilateral trade is expected to rise to $600 billion over the next decade, as well as a plan for $50 billion in foreign direct investment[[19]](#footnote-19).

Historically, China has provided Iran with technological support toward nuclear development, as we firmly believe in collaborative instead of coercive maintenance of nuclear non-proliferation. In the future, previously established Chinese-Iranian ties render China the most effective liaison between Iran and other regional parties or Western nations. In fulfilling this role, China expects a gradual integration of Iran as a peaceful, progressive, and prosperous nation among the international community.

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