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Report – Webinar

“Youm-e-Takbeer: Celebrating Peaceful and Prosperous Nuclear Pakistan”

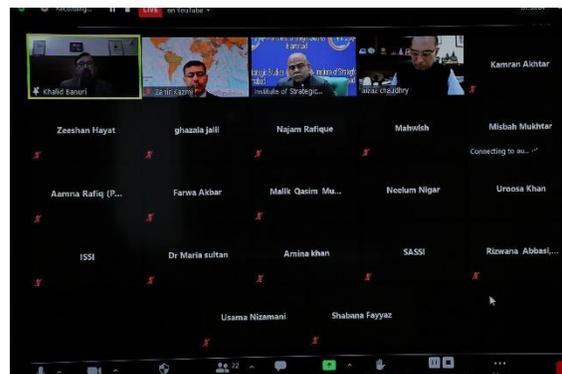
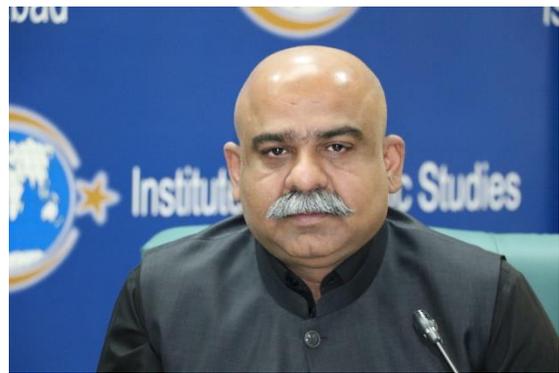
May 28, 2021



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PICTURES OF THE EVENT



The Arms Control and Disarmament Centre (ACDC) at the Institute of Strategic Studies Islamabad (ISSI) held a webinar to mark the twenty-third anniversary of Youm-e-Takbeer on May 28, 2021. The eminent speakers included Brig. Zahir Kazmi, Director General, ACDA-SPD; Mr Muhammad Kamran Akhtar, Director General, ACDIS, MOFA; Dr Rizwana Abbasi, Associate Professor, NUML; Dr Pervaiz Butt, former Chairman PAEC and Air Cdre. (Retd.) Khalid Banuri, Advisor SPD.

Introductory Remarks by Mr Malik Qasim Mustafa, Director ACDC at the ISSI

Malik Qasim Mustafa highlighted that since May 28, 1998, the Pakistani nation, every year, proudly commemorates “Youm-e-Takbeer,” as a day when Pakistan restored the balance of power in the South Asian region by conducting nuclear tests. After acquiring nuclear weapons capability, Pakistan is ensuring the security of its nation with utmost restraints and responsibility. However, over time, as the traditional notion of security is changing, Pakistan also realises that to ensure comprehensive human security, it must ensure economic security, energy security, food security, and environmental security for its masses. Pakistan is making use of peaceful nuclear technology in almost all sectors including energy, agriculture, industry, medical, environment and other related areas to bring prosperity and growth. However, to fully benefit from this technology requires resources and international cooperation in the file of peaceful nuclear technology.

Welcome Remarks by Ambassador Aizaz Ahmad Chaudhry, Director General ISSI

Ambassador Aizaz Ahmad Chaudhry in his welcome remarks said that developing nuclear weapons capability was a strategic imperative for Pakistan. He highlighted that in the aftermath of the 1998 Indian nuclear tests, there was tremendous pressure on Pakistan not to follow suit. However, the top Pakistani leadership withstood all pressure and overtly went nuclear. If Pakistan had not detonated India, with an extremist government, would be coercing Pakistan. Pakistan has always had a defensive strategy and its nuclear weapons are to ensure its security only. Now Pakistan is moving towards a comprehensive security paradigm. Thus, Pakistan is increasingly focused on the peaceful uses of nuclear technology. Pakistan is using nuclear technology to make progress in the agriculture, industry and medicine sectors.

Remarks by Brig. Zahir Kazmi

Brigadier Zahir Kazmi shared his thoughts on “Promoting Peace and Strategic Stability in South Asia.” He said that Pakistan’s tryst with nuclear technology began in May 1957. Pakistan was among the founding members of the International Atomic Energy Agency (IAEA). The month of May is significant in many ways. India irreversibly nuclearised South Asia in May 1974 once it tested a nuclear weapon after years of proliferation from technology and materials provided only for peaceful uses. Again India resumed nuclear weapons testing in May 1998 and forced Pakistan’s hand that month to follow suit. Then in 2016, India and Pakistan even applied for NSG membership in May.

He further said that Atoms possess Janus-like character – they have two faces: Atoms carry immense power to bring light and socio-economic development in the lives but can also take the living daylights out and reverse all development and human progress. Pakistan has achieved several milestones both in atoms for peace and development and atoms for deterrence and war potential.

Talking about Pakistan’s deterrence achievements, he said that deterrence is at work – and it did not break down amid crises in past. The crisis that almost brewed to the brink in February 2019 is still fresh in our memory. Hence, deterrence was at work during that crisis as well. He emphasised that a deterrence mechanism is in place against the full spectrum of threats at strategic, operational and tactical levels, which is within the philosophy of Credible Minimum Deterrence. Among other important achievements since 1998, he talked about effective command and control which is an important tenet of deterrence. An assertive command control system remains in place 24/7 and ensures two things – one that the weapons will always be available once needed and second that these will never be used either accidentally or inadvertently.

He also talked about the challenges to Pakistan’s nuclear deterrence. He said that India continually seeks to dilute deterrence. This is visible in the dynamism in its nuclear doctrine, externally supported capabilities and force posture developments like in space and emerging technologies. Pakistan remains alive to such threats and continues to meet these upfronts.

He also talked about Pakistan's achievements in peaceful applications for socio-economic development. Pakistan's nuclear programme continues to contribute towards the socio-economic uplift of the country and is in complete sync with United Nations' seventeen Sustainable Development Goals to be met by 2030.

Pakistan peaceful nuclear programme is engaged is at work in ten areas:

1. Poverty alleviation and zero hunger (SDG 1&2): Established between 1962 and 1994: four agriculture, biotechnology and genetic engineering centres are involved in increasing the resource-use efficiency and productivity of crops. There are a staggering 125 crop varieties that these centres have produced. These centres are working in producing disease-resistant crops, pest control, management of land affected by drought, food irradiation and fertilizer production. Plant mutation breeding has helped Pakistan produce cotton in the 1980s and we earned US\$3 billion from NIAB-78 cotton mutant production. Pakistan has been offering these services to other countries also.
2. Good health and wellbeing: the PAEC has established 18 hospitals that offer cancer treatment to around 1 million patients annually. Another Cancer Hospital will soon become functional in Gilgit.
3. Quality education: the PIEAS is the No.1 university in Pakistan and is in the top 400 of the world.
4. Clean water and sanitation: the PAEC provides services in groundwater dynamics, recharge mechanism and water-logging and salinity.
5. Affordable and clean energy: The 1,100 MWe Karachi Nuclear Power Plant Unit-2 (KANUPP-2) was connected to the national grid and inaugurated on May 21, 2021. Another 1,100 MWe plant will also be operational soon – thus, giving a shot in the arm to Pakistan in terms of clean and uninterrupted baseload electricity. In the nuclear power sector, the Energy Vision envisages a building capacity to generate 8800 MWs of electricity by 2030 and 42000 MWe by the year 2050.

6. In industry innovation and infrastructure: HMC is ISO-9001 certified and the only engineering organisation in Pakistan that manufactures nuclear safety class-1 to 3 equipment. To support the industry in the country, the PAEC has set up a non-destructive testing centre that tests materials, components etc., for defects without destroying the part of the system.
7. Climate action (SDG 13): six operational nuclear power plants are contributing to global efforts for the mitigation of greenhouse gases. As of 2019 – these plants had avoided 40 million tons of CO₂ emissions, which other fossil-fuel-based plants would have emitted in producing the same amount of energy. By 2030 – up to 370 million tons of CO₂ emissions would have been avoided.
8. Life below water (SDG 14): the PAEC is assisting National Institute for Oceanography in monitoring coastal areas to assess marine pollution.
9. Life on land (SDG 15): Pakistan has around 16 million hectares of land (20 per cent of total area) affected by soil erosion. The PAEC assists in identifying erosion hotspots to reverse land degradation and restore soils.
10. Partnerships for the Goals (SDG 17): partnerships with international organisations and bilateral cooperation include the IAEA, Regional Cooperative Agreement in Asia and Asia-Pacific Region, World Association of Nuclear Operators, International Nathiagali Summer College since 1976 – Dr Abdus Salam’s initiative, CERN (European Organisation for Nuclear Research) since 1994, Synchrotron Light for Experimental Science and Applications in the Middle East (SESAME), International Foundation for Science (IFS) in Sweden – 35 years – agriculture, International Rice Research Institute (IRRI) since 2002 and International Centre for Genetic Engineering and Biotechnology (ICGEB).

Brig Kazmi emphasised that Pakistan is doing all this despite an increasingly discriminatory international exports controls regime targeted at Pakistan. He concluded by reiterating that Pakistan’s nuclear programme has made a solid impact on the socio-economic development of Pakistan and remains the backstop in deterring coercion and aggression.

Remarks by Mr Muhammad Kamran Akhtar

Mr Muhammad Kamran Akhtar while expressing his view on “Peaceful and Prosperous Nuclear Pakistan” said that Pakistan’s nuclear weapons capability aims to ensure strategic stability while, at the same time, avoidance of an arms race. He said that the global arms control regime is supposed to be a guarantor of peace. It should be a framework of cooperation to achieve peace. Thus, it should not be discriminatory. He highlighted that there is a renewed arms race at the regional and global levels. There are also developments in Artificial Intelligence, quantum computing, cybersecurity that are increasingly impacting nuclear deterrence. Global powers are in a renewed race to achieve dominance in these fields. India is also making headway in these areas. However, Pakistan is capable of dealing with and countering these developments.

On the peaceful uses of nuclear technology, he noted that the PAEC has contributed tremendously to the agriculture, industry, environment and medical sector. As such, he said that we should not forget to thank our scientists and engineers at the PAEC and appreciate their contribution to socio-economic development. He said that states should now move beyond notions of traditional security. Pakistan has a huge peaceful nuclear programme and is ready to cooperate internationally to ensure sustainable development. Pakistan’s impeccable safety and security record, a rigorous export control regime and Pakistan’s leaps in the field of peaceful uses of nuclear technology qualifies it to be a member of NSG.

Remarks by Dr Rizwana Abbasi

Dr Rizwana Abbasi spoke on “International Cooperation for Peaceful Nuclear Technology: A Case for Pakistan.” She said that Pakistan is a founding member of the IAEA and has enjoyed a mutually beneficial collaboration with the agency on peaceful uses of nuclear energy. She emphasised the role of nuclear energy as a cost-effective, clean and sustainable option. She said that the continued reliance on fossil fuels will generate irreversible damage. The world is moving away from reliance on fossil fuels. She emphasised the need to create public awareness on the issue. She also talked about how Pakistan has harnessed nuclear technologies for better food production, irrigation, industrial use and health sectors.

She also noted that NSG will need to be cognizant of the realities of nuclear power requirements across the world and in Pakistan. Thus, Pakistan should be given the membership of the NSG so that it can fully utilise the benefits of nuclear energy. For that, she stressed the role of a national collaboration between academia, universities, public and civil society.

Remarks by Dr Pervaiz Butt

Dr Pervaiz Butt expressed his views on “Prosperity through Nuclear Power Generation in Pakistan.” He said that Pakistan’s main power generation sources are hydro, fossil fuels, wind and solar. However, nuclear energy is gradually increasing its share in the energy mix. He highlighted that the cost of generation of nuclear power is low. He said that the advantage of nuclear energy over other sources of energy is that nuclear power plants operate continuously while Hydroelectricity generation fluctuates according to water levels.

Pakistan has six nuclear power plants operating today. He said that the K-2 power plant came online in March 2021 and produces 1100 MWe. He noted that the reason for the low cost of nuclear power generation is that Pakistan has its research centres, own universities, which is a good source of manpower. Nuclear energy share in the total power mix is 7.3% in 2020. It has helped develop industry in Pakistan and it playing a role in the economic development of the country. Pakistan has been operating nuclear power plants safely for over five decades. The country, thus, has a record of safe nuclear power plant operation that qualifies it for international cooperation – Pakistan can provide expertise on the safety and security of nuclear plants. At the same time, Pakistan is a good candidate for global civil-nuclear cooperation.

Remarks by Air Cdre (Retd) Khalid Banuri

Air Cdre. (Retd.) Khalid Banuri provided a “Roadmap for Peaceful and Prosperous Nuclear Pakistan.” He highlighted three major areas that Pakistan has focused on concerning peaceful uses of nuclear technology - energy generation, food security and the health sector. He said that Pakistan’s journey in the advent of peaceful uses of nuclear technology has been a story of immense success. These achievements were made through a well thought through process, that was logically conceived and evolved, which started to give dividends soon after. He took note of the recognition early on by the PAEC that it needed to spend time, money and energy on

education, research and training in all matters nuclear as building blocks of the capability. This led to a robust human resource development vision that manifested in several experts working through their PhDs at some of the top-notch universities around the world, as well as, the establishment of the Pakistan Institute of Nuclear Science and Technology (PINSTECH) at the outskirts of Islamabad.

Armed with adequate knowledge acquisition and research facilities, three areas have focused on as part of Pakistan's pursuit of Sustainable Development Goals (SDGs). Firstly, in the context of Goal 7 for affordable and clean energy, Pakistan's Energy Security Plan 2030 envisages 5 per cent or 8,800 MWe of nuclear power generation. He said that after augmenting the experience of KANUPP 1 and subsequently Chashma 1 & 2, this plan has now grown into a somewhat ambitious over 42,000 MWs by 2050, i.e., 100 years of Pakistan's existence. Over time, not only has the Chashma Plants grown into a network of four plants, the inauguration of KANUPP 2 at Karachi is a milestone that has added 1,100 MWe to the national grid. In less than a year, K2 will be joined by its twin K3 with another 1,100 MWe. The concerns about summer load shedding would, thus, be history forever.

Second, he said that working towards the goal of zero hunger, Pakistan has created four agriculture research institutes using nuclear technology, at Tando Adam in Sindh, Peshawar in KP and Faisalabad in Punjab. Then the national institute called NIBGE was established. He said that these four institutes have helped augment crops, enhance their yields and introduced new crop varieties. NIBGE and NIAB also contribute to higher education pursuits in biology and biotechnology relevant to food security through the Pakistan Institute of Engineering and Applied Sciences (PIEAS), which is a degree awarding institute of high acclaim. Collectively, these institutes have contributed to creating farmer awareness and training, plant nutrition, water management, pest control, food decontamination and animal health. This way, the PAEC has also helped enhance the export potential at the national level.

Third, regarding the goal of good health and well-being, the PAEC continues to provide cancer diagnostics and treatment using its resources and provides free treatment to any Pakistanis who cannot afford it, which is often the case. Currently, its 18 nuclear medicine centres are operative all across the national landscape, with an additional three expected to enhance the coverage

further. Together, he emphasised, they work on raising awareness, conducting diagnostics, imaging studies, therapeutic services, radiotherapy and treatment planning. A robust teaching and training programme continues alongside the treatment efforts.

Talking about the future roadmap for a peaceful and prosperous nuclear Pakistan to contribute to growth and development in line with Sustainable Development Goals (SDGs), he made six points. One, that Pakistan's immense efforts at the national level and contribution to the international efforts in the realm of nuclear safety, spearheaded by the Pakistan Nuclear Regulatory Authority (PNRA), is well manifested and is in line with the obligations of the Nuclear Safety Convention.

Two, in the backdrop of Pakistan's contribution, articulation and implementation of a robust nuclear security programme and sustained nuclear security culture, has come to the recognition of Pakistan's Centre of Excellence for Nuclear Security (PCENS), as an institution worth emulating internationally.

Three, assuming sustained financial support, a successful, safe and secure nuclear power generation programme would add around 2200 MWs to the national grid after every three to four years, which in turn would augment through clean energy and low per-unit cost after installation, thereby helping national growth and development. He said that a corollary to this is the inclusion of enhanced and highly augmented safety incorporating lessons learnt post-Fukushima natural disasters. The nuclear energy operationalisation in Pakistan is, thus, abundantly safer than elsewhere.

Four, the excellent contribution of nuclear technology in the agriculture field can further enhance much significantly if experimental farming over larger tracts of land is facilitated. This of course would need a win-win understanding and support both by large landowners, as well as, through the national agriculture development policy.

Five, to significantly enhance the capacity of the nuclear medicine and oncology centres, he said that more support at the national, as well as, the international level is needed to acquire the often expensive machines for diagnostics and treatment. In the same vein, he added that equipment being evolved to tackle challenges posed by COVID-19.

Finally, He said that to evolve and sustain the challenge of the new and emerging technologies is a subject by itself. It not only needs technological prowess but also would include challenges related to human resources, command & Control, decision making and inadequacies related to international law.

He concluded by saying that Pakistan's work and potential in various realms of safe and secure peaceful uses of nuclear technology, in support of select SDGs suggests that while identifying various challenges, in turn, makes a case for access internationally to associated technologies for which Pakistan has the right prowess, responsible approach and a track record of safety and security, despite odds in the backdrop of a hostile neighbourhood.

Concluding Remarks by Ambassador Khalid Mahmood, Chairman BoG ISSI

Ambassador Khalid Mahmood in his concluding remarks said that Pakistan was a reluctant nuclear weapon power. Over the decades, Pakistan was an ardent advocate of nuclear non-proliferation. However, India was not interested in pursuing nuclear non-proliferation. Pakistan tried to keep South Asia weapons-free. He also emphasised the need to maintain credible nuclear deterrence in the face of emerging technologies and weapons systems. He also highlighted the importance of peaceful applications of nuclear technologies in sectors like health, agriculture and energy. For this, he said, that the credit goes to the community of scientists, engineers and researchers. It is helping in sustainable development goals, as well as, socio-economic development. He noted that the world is applying different standards for India and Pakistan. Pakistan is being denied nuclear cooperation and it increases challenges for Pakistan.