



## **Issue Brief**

### **Nuclear Developments in Myanmar**

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Interest in nuclear energy is fast gaining momentum in South Asia and its immediate neighbourhood. While India and Pakistan have proven nuclear programmes including civil and military, there is a resurgent interest in nuclear energy technology in Bangladesh and Myanmar. Bangladesh signed a memorandum of understanding (MoU) with Russia to build a nuclear power plant to meet the energy deficit.<sup>1</sup> Similarly, Myanmar aspires to develop nuclear technology and as a developing country, seeks to narrow the development gap so as not to be marginalized.<sup>2</sup> Interestingly, both Myanmar and Bangladesh are sitting over an energy lake and have large resources of offshore gas that have the potential to meet their domestic energy needs, yet have clear ambitions to develop nuclear energy.

In recent times, nuclear developments in Myanmar have attracted international attention and concern.<sup>3</sup> This is partly due to Naypyidaw's suspected linkages with Pyongyang, the latter known for nuclear proliferation, aggressive posturing, and brinkmanship strategies. It is feared that collusion between the reclusive regime in Myanmar and the authoritarian North Korean leadership is evolving and may result in the transfer of technology and technical assistance relating to WMD activities. Further, some reports suggest that North Korean flagged vessels suspected of transporting military and nuclear related cargo have in the past called at ports in Myanmar.

Although there is only circumstantial evidence to suggest that Myanmar and North Korea may be engaged in nuclear technology cooperation, it should be borne in mind that nuclear

developments in Myanmar are not an indicator that it is on the verge of building nuclear bombs. After all Myanmar has been a strong proponent of nuclear disarmament being the founding members of the 1962 Eighteen-Nation Disarmament Committee, is a signatory to the Nuclear Non-Proliferation Treaty (NPT), the Comprehensive Nuclear Test Ban Treaty (CTBT), the Biological Weapons Convention (BWC) and the Chemical Weapons Convention (CWC). Besides, it signed the Southeast Asian Nuclear Weapon Free Zone Treaty (SEANWFZ), at the Fifth ASEAN Summit held in Bangkok in December 1995 before joining the ASEAN.

However, the issue of Pyongyang suspected linkages with Naypyidaw's gain salience for India, particularly in the light of the fact that Pyongyang-Islamabad nexus was partly responsible for the development of Pakistan's nuclear and missile capability. Similarly, missile and nuclear developments in Myanmar have the potential to undermine regional stability and security due to Pakistan's nuclear brinkmanship strategy. Further, a North Korean vessel carrying WMD accessories bound for Pakistan/Libya was apprehended in an Indian port in 1999 and on August 6, 2009, the Indian Navy undertook VBSS (visit, board seize and search) operations in the Andaman Sea against a North Korean vessel in support of UN Security Council Resolution No 1874 that "strengthens arms embargo, calls for inspection of cargo vessels if states have "reasonable grounds" to believe contain prohibited items"<sup>4</sup> In the above context, Myanmar's interest in developing nuclear infrastructure merits debate and discussion.

### **Early Nuclear Developments and Stakeholders**

Before engaging in the debate over Myanmar's nuclear ambitions, it is useful to briefly discuss Naypyidaw's nuclear development plans and stakeholders that have provided it with the technological support. Myanmar's interest in nuclear technology can be traced back as early as 1960s when General Ne Win, the then leader of Myanmar, had ordered research and development in nuclear technology.<sup>5</sup> Myanmar physicists and scientists engaged in studies related to nuclear technology and the geologists conducted mining surveys. Interestingly, special aircraft fitted with uranium detection equipments conducted surveys of Upper Myanmar and Kachin state for possible uranium deposits. It is believed that these initiatives may have been prompted by a study conducted by the Imperial Japanese Army in 1940 which had

concluded that Korea and Burma had insufficient uranium to make an atomic bomb<sup>6</sup>

In the 1970s, Myanmar nominated Professor Thein Oo Po Saw to study nuclear physics in Moscow and Professor Saw developed close ties with Russian nuclear experts<sup>7</sup> Though retired now, Professor Saw is an important figure in Myanmar's nuclear programme and is an advisor to the Myanmar Academy of Technicians and Scholars. He was also associated with the Ministry of Mines and since 2000, has made several visits to Moscow to seek nuclear technology for Myanmar. Professor Saw enjoys patronage with the ruling elite particularly Professor U Thaung, Myanmar's Science and Technology Minister. Professor Thaung, an alumnus of Myanmar's Defence Service Academy had served in General Ne Win's government, and has long been associated with Myanmar's nuclear programme.

Till 1988, Myanmar's nuclear plans had been shaping well but were suspended soon after the military junta came to power. In 1996, Myanmar reactivated the Office of Strategic Studies to pursue nuclear infrastructure and in 1998 the Myanmar government passed the Atomic Energy Act that designated the Ministry of Science and Technology as the lead government agency for its nuclear program.<sup>8</sup> In 2001, Myanmar announced plans to acquire a nuclear research reactor and approached the IAEA. The IAEA team concluded that Myanmar did not have requisite safety standards and could not be given the approval to proceed with the development of nuclear research reactor. Reportedly, Russia responded positively to Myanmar's request and agreed to provide the necessary assistance and what followed was a stream of Myanmar nuclear scientists undergoing training in Russia.<sup>9</sup> Some reports also suggest that in 2003, two Myanmar flagged vessels had docked at Zadetkyi Kyun suspected to be carrying equipment for nuclear infrastructure brought in from Russia.<sup>10</sup>

Apparently, Myanmar approached Beijing for nuclear assistance. China had refused to assist Myanmar apparently to avoid international reaction as it was under international scrutiny due to its proliferation linkages with Pakistan. It is understood that India refused on the ground that Myanmar energy needs are best served by hydrocarbons and did not require nuclear energy. At about that time, there were reports to suggest that Myanmar had sought assistance from Pakistan, but U Khin Maung Win, Myanmar's Deputy Minister for Foreign Affairs has denied

any Pakistani involvement and observed “The Myanmar government categorically states once again that no nuclear scientists from Pakistan have been given sanctuary in Myanmar. However, Myanmar scientists had been trained by the IAEA in the application of nuclear technology for peaceful purposes.”<sup>11</sup>

### **Myanmar’s Nuclear Materials and Infrastructure**

The Myanmar government has observed that “development of nuclear power requires high technology and also is capital intensive; it is only at the stage of initiating study on nuclear energy as an ongoing programme on alternative energy sources”<sup>12</sup> Myanmar is endowed with rich mineral deposits including uranium and other radio active materials. The Myanmar Ministry of Energy has identified uranium ore deposits at Magwe, Taungdwingyi, Kyaukphygon and Paongpyin in Mogok, and Kyauksin.<sup>13</sup> Mining activity is also in progress in sites at Thabeikkyin, north of Mandalay, and southern Tenasserim Division.<sup>14</sup>

The uranium sector remains unexplored and has the potential to boost Myanmar’s economy. Given that global nuclear energy capacity could grow between 22 per cent and 44 per cent, the annual uranium requirement is expected to be of the order of 80,000 tonnes to 100,000 tonnes.<sup>15</sup> Meanwhile, the international market price of Uranium has increased from US \$10 per pound in 2003 to US \$91 in 2008 and could be an important source of revenue for Myanmar and act as a catalyst for the development of nuclear energy.

U Khin Maung Win, Myanmar’s Deputy Minister for Foreign Affairs, has noted that Myanmar’s nuclear infrastructure is being developed for peaceful purposes and meant to train scientists and to produce radioisotopes for medicine and agro-science and that “Myanmar’s interest in nuclear power is not for the wrong purpose” and the nuclear developments are well within the framework of international treaties “So, there is no need to worry about this issue.”<sup>16</sup>

In 2007, the Russian nuclear energy agency, announced its plans to help Myanmar build a 10-megawatt nuclear reactor that uses low enriched uranium for “research in nuclear physics, biotechnology, and material science” The Agency would also provide 20 percent enriched

uranium-235 fuel and train at least 300 Myanmar technicians. The Rosatom statement noted, "This agreement provides for cooperation in the design and construction in Myanmar of a Centre for Nuclear Research and it will work under the controls of the International Atomic Energy Agency (IAEA), the UN's nuclear watchdog.

### **The North Korean Connection**

After a gap of nearly two and a half decades, Myanmar and North Korea restored diplomatic ties that had been severed in 1983 as fallout of an attack on the visiting South Korean Presidential delegation. The attack, engineered by North Korean spies, resulted in eighteen South Korean officials, including four ministers killed. An apology from North Korea has resulted in resumption of diplomatic relations. It is quite plausible that China may have facilitated resumption of bilateral relations ostensibly to challenge US in Southeast Asia. As a result, Myanmar and North Korea now enjoy cordial relations that include high level visits, military exchanges and nuclear cooperation.

Myanmar has a new friend in North Korea. Today, the military regimes in North Korea and Myanmar view Washington through a common prism of hostility because they have been among "states of concern" and Myanmar as "pariah state" respectively. Further, both countries have been under "economic sanctions and harsh condemnation" from Washington.

Reports also suggest that Myanmar may have approached North Korea for Chemical Weapons and their delivery systems. The US Central Intelligence Agency, during the Congressional hearings between 1988 and 1991, had asserted that Myanmar had a chemical-weapons program. In 1992, the Defense Intelligence Agency (DIA) reported Myanmar's interest in acquiring "chemical weapons and artillery for delivering chemical agents."<sup>17</sup> Further, there were reports that Myanmar may have used balloons containing chemical agents against Karen insurgents.<sup>18</sup>

Meanwhile, international attention has focused on North Korean flagged vessels that are suspected of transporting military and nuclear cargo to "rogue nations" and other unstable regimes. The suspected vessels have been intercepted on the high seas (So San, a North Korean

freighter carrying a shipment of missiles for Yemen was intercepted by a Spanish frigate in the Indian Ocean in 2002), and in ports (*MV Ku Wol San* apprehended in Kandla Port , India in 1999 with a cargo of missile related equipment bound for Libya/Pakistan) and in some cases without cargo leading to speculation that these are diversionary tactics to mislead international efforts to prevent proliferation of WMDs and related technologies. Interestingly, some of these vessels experience mechanical/engine failures or run into bad weather thus facilitating visit to friendly ports to discharge their cargo.

Significantly, North Korean flagged vessels have called at ports in Myanmar on regular basis. In November 2006, *M V Bong Hoafan* docked at Yangon port apparently seeking refuge due to inclement weather and difficult sea conditions.<sup>19</sup> According to Myanmar authorities, the vessel's cargo did not include any military related goods. In May 2007, *M V Kang Nam I* another North Korean freighter docked at Thilawa port near Yangon under similar weather conditions.<sup>20</sup> The Myanmar government again announced that the ship did not carry any suspicious cargo and was being provided assistance to make it seaworthy. Interestingly, in October 2006, *M V Kang Nam I* was shadowed by the US and Japanese naval vessels before it entered Hong Kong. The vessel was inspected at Hong Kong and found empty. The crew explained that they intended to pick up cargo of scrap metal in Taiwan. At about the same time, another North Korean freighter bound for Iran, had engine failure and drifted in Indian waters. The vessel was inspected and found empty.

In June 2009, another North Korean flagged vessel named *M V Kang Nam I* , (presumably the same vessel that was inspected in 2006) , was shadowed by US Navy ships USS John S McCain and USS McCampbell in support of UN sanctions imposed following North Korea's underground nuclear test in May 2009.<sup>21</sup> The ship was suspected of transporting military related cargo for Myanmar but Myanmar authorities had noted that they had no knowledge of *M V Kang Nam I*, instead were awaiting the arrival of *M V Dumangang* to load a cargo of 8,000 tons of rice. The North Korean ship movements were made public and most nations announced their decision to not allow it into their ports. Finally the ship had returned back to North Korea.

In August 2009, *MV Mu San* was escorted to Port Blair for investigations after it made an

unauthorised anchorage off Hut Bay in the Andaman and Nicobar Islands.<sup>22</sup> When challenged, the ship tried to run away and had to be stopped after shots had been fired by an Indian Navy ship. The Captain told the interrogators that the vessel was bound for Iraq and enroute its destination had been changed and was awaiting orders. Meanwhile the vessel had developed technical snag and on investigation it emerged that it was false.

It is intriguing that a poor country like North Korea is able to sail empty ships given that ship-operating costs are very high. It is also a coincidence that North Korean vessels have entered ports in Myanmar under similar weather conditions and nothing suspicious has been found onboard. There is much more than meets the eye and it is fair to argue that there appears to be collusion between the two sides resulting in a free flow of military or nuclear related hardware. The suspicions gain greater credence because a third party has never inspected the ships and two journalists of Myanmar origin who covered a Korean ship visit for Nippon News Network had been arrested and later released. Further, it is very difficult to ascertain the nature of the cargo thus making it difficult to arrive at definitive conclusions.

### **Concluding Remarks**

Myanmar has categorically stated that it is engaged in developing nuclear energy for peaceful purposes. It will be prudent to start bilateral discussions on safety and security of nuclear facilities and even provide assistance in training through exchange of scientists and assist in setting up a training centre in Myanmar. In fact in 1999, India conducted a training programme for scientists from Bangladesh, Myanmar, Romania, Thailand, and Vietnam at the Bhabha Atomic Research Centre (BARC).

It is true that Myanmar might not be persuaded to shelve its nuclear programme, but it will be useful to encourage Myanmar to have a dialogue with its neighbours that aims at transparency about its nuclear plans. This is sure to dispel any fears among the regional countries and reinforce the belief that Myanmar-North Korea relationship is devoid of any nuclear weapons ambitions. After all, a research reactor is a significant foundation and a starting point for developing large nuclear infrastructure and the subsequent reprocessing and accumulation of

fissile materials.

Finally, as civil nuclear programmes in the region flourish and gain greater acceptability among the countries, nuclearization of South and Southeast Asia will be inevitable. In any case, the ripple effects of nuclear developments in the periphery i.e. China, India and Japan will impact on regional nuclear order. It calls for a broader Asian dialogue on nuclear energy either under the IAEA or as an Asian initiative.

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