

Nuclear Proliferation in Southeast Asia:
Is Burma a Problem?

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Introduction

There have been persistent rumors of a Burmese nuclear program since 2001 when Burma first announced intent to buy a nuclear reactor from Russia. The deal fell through and was resurrected in 2007 but still has not been consummated. There is a small Department of Atomic Energy in Burma with a few well-known international figures. But the rumors of a nuclear program to build an indigenous reactor and nuclear weapons remained only rumors.

A number of defectors have reported on a Burmese nuclear program. The quality of their reporting varies, but many of the details overlap. Geographic sites, sometimes with different names, cluster together and appear to be the same sites from each person.^{1, 2, 3,}

⁴ In addition to these defectors there are newspaper reports and other debriefings collected by the Democratic Voice of Burma, an exile media group based in Oslo, Norway. None of these reports are highly detailed but they add to a growing body of knowledge. Other information supporting defector claims comes from Dictator Watch, and Propublica, a US public interest group.

Evidence of a Burmese Nuclear Program

In February 2010 a new defector surfaced; an insider from the Burmese missile and nuclear programs defected to Thailand. Sai Thein Win is an army major, a mechanical engineer skilled in programming precision Computer Numerically Controlled (CNC) machine tools. These kinds of machinery are used to build the high quality equipment and components of programs such as missiles or a nuclear reactor. The defector did graduate training in missile technology in Russia in the early 2000's and then returned to Burma where he worked on missiles and had some knowledge of the nuclear program. The training of several thousand young Burmese officers and others in Moscow is well-

¹ 'Burma and Nuclear Proliferation: Policies and perceptions', Regional Outlook Paper No. 12, 2007, Andrew Selth.

² Burma's Nuclear secrets, Sydney Morning Herald, 1 August 2009, Desmond Ball and Phil Thornton, <http://www.smh.com.au/world/burmax2019s-nuclear-secrets-20090731-e4fv.html>

³ The SPDC's Nuclear Weapons Program, Debriefing Notes, Private Correspondence from Natan Dotan, Propublica, USA

⁴ Interview with Burma Army Defector, February 2009, Private Correspondence from Natan Dotan, Propublica, USA

documented in many sources.⁵ Burmese who have spoken about their training all recount how they were told they were being sent abroad for training to support a Burmese missile and nuclear program.



Figure 1. Sai Win in uniform in Burma

Win explained his defection in a documentary broadcast on Al Jazeera in June 2010. He said he was ashamed to wear the Burmese Army uniform any more. He objected to working on programs to build weapons of mass destruction such as nuclear weapons and ballistic missiles. He also described a program in disorder, accomplishing little and wasting his education and career.

He is anything but an anonymous defector. He turned over his personal documents when he defected to Thailand. He later appeared in a documentary film on Al Jazeera where he spoke on camera, using his true name. After he defected his family was questioned by

⁵ Such as: Proof: Burma's military junta lied to the IAEA, DICTATOR WATCH, <http://www.dictatorwatch.org/prstudentlists.html>

the Burmese secret police.⁶ It is hard to argue about his visible bona fides. Even the Burmese regime denounced him by name as a traitor and a liar after he went public on Al Jazeera. He has made himself available for interviews by individuals and by the media.

This is in contrast with “Curveball”, the infamous source hawked by the US to push its case for war. This anonymous source, who brought no documentary intelligence whatsoever, has now finally been publicly identified as the source who snookered so many in the media and government and took the US to a disastrous war, a war in which thousands have died.

Sai Win turned over hundreds of color photos, mechanical drawings and documents to the DVB. DVB had earlier turned to the National Endowment for Democracy (NED) in January 2010 for expert analysis of a larger cache of information on tunnels, missiles, and nuclear activities. The NED team found the information on nuclear activities in Burma to be fragmentary and un-compelling. But they noted that the use of insider jargon terms and statements much more knowledgeable than normally heard from defectors to be worrisome.

When the newest defector surfaced, DVB asked me to evaluate the new data. I immediately recognized a number of pieces of equipment that are almost certainly for use in a nuclear program, primarily to process uranium in a chemical plant to make uranium compounds for reactor fuel, isotope separation and reactor fuel. The complete analysis is available at this website.⁷ The combination of equipment and the program context described by the defector are consistent with a covert nuclear program to produce bombs.

It is important to note that Sai Win is a mechanical engineer with no nuclear training. He provided photographs and names of objects made for a “nuclear battalion” but he did not know what they were and did not try to explain them. He left that task for analysts. He separately described his knowledge of a nuclear program from briefings he attended and other materials.

Some of the equipment has clearly been used judging by its condition in the color photographs. It is impossible to tell if it has been used with uranium from a photo, but if it has it would be an instant violation of Burma’s Small Quantities Protocol agreement with the International Atomic Energy Agency (IAEA) under a larger safeguards agreement. In addition, other Burmese sources have reported uranium mining and the production of yellowcake, the first chemical step in moving from uranium ore to industrial compounds. Sai Win mentions that there is a yellowcake plant, near the nuclear laboratory north of Mandalay at a town called Thabeikkyin. He visited the nuclear lab on two occasions with general officers for demonstrations of nuclear technology to the top leadership of the country. At those demonstrations there was explicit description of the milestones in the military nuclear program. The source did not visit the yellowcake plant, but heard it was nearby.

⁶ http://www.irrawaddy.org/article.php?art_id=18651

⁷ Nuclear Related Activities in Burma, <http://www.dvb.no/burmas-nuclear-ambitions/burmas-nuclear-ambitions-nuclear/expert-analysis/9297>

Satellite imagery shows a military facility at Thabeikkyin that could be the nuclear lab. There is also a small ore concentration plant at Thabeikkyin that is consistent with a uranium plant, although not unique. The imagery information is consistent in locating these facilities right where the source said they would be. In particular, the head of the organization that imported the German machine tools is one Ko Ko Oo. Oo has also been identified as the head of the Burmese Department of Atomic Energy.⁸ He is seen in photographs examining a group of buildings under construction at Thabeikkyin, allegedly for the nuclear laboratory. The same buildings have been identified in satellite imagery near Thabeikkyin and exactly match factories for the nuclear program on maps provided by yet another defector.

Since the defector surfaced in 2010 other new information has been trickling in to support the allegation of a Burmese nuclear program. Propublica, a public interest group in the US, has provided us with two additional defector debriefings that they conducted in Thailand. Both mention the training of Burmese military officers in Russia in nuclear and missile technology. One of their defectors even trained with the detecting major, Sai Thein Win. These and other sources are providing corroborating information that is allowing us to map the extent of the Burmese program and the key program sites. Maps and drawing that have appeared have allowed us to match current details to satellite imagery.⁹ This in turn allows us to match actual construction progress to plans.

Wikileaks has also published several cables from the US Embassy in Rangoon. They describe reports from Burmese sources, official and otherwise about a nuclear program: reactor construction, uranium mining, mineral shipments and cooperation with DPRK.¹⁰ The cables and other cables from Washington to the field highlight US government concern about a nuclear program in Burma going back a number of years. In 2010 a US warship shadowed a DPRK ship headed for Burma until it was forced to turn back. It was suspected of carrying military equipment for missile or nuclear programs. The US government concern reaches to the highest levels.¹¹

In addition, analysts have been looking for several years at color photos and satellite images of two Burmese factories where the source worked.¹² These factories were built to house German and Swiss CNC machine tools. Germany granted export licenses for the equipment that went to these factories, and demanded follow-up end-user inspections to see how the equipment was used. For this reason, there is high consistency among

⁸ Deep Connections between Myanmar's Department of Atomic Energy and the DTVE, Andrea Scheel Stricker. January 28, 2010, <http://isis-online.org/isis-reports/detail/deep-connections-between-myanmars-department-of-technical-and-vocational-ed/33>

⁹ BURMA'S NUCLEAR BATTALION, <http://www.dictatorwatch.org/>, August 28, 2010

¹⁰ Such as: <http://wikileaks.ch/cable/2004/01/04RANGOON88.html>

¹¹ <http://213.251.145.96/cable/2009/08/09STATE82013.html>

¹² <http://forden.armscontrolwonk.com/archive/2720/now-it-can-be-told-inside-bob>

photos from the companies, the Germans and the source that these are, in fact, the factories and tools in question. It is unquestionable that Major Win worked in the sites equipped by the Germans. What can be seen is that when the Germans are inspecting, the factories appear to be civilian; but when they are gone the same machine tools are being used by military personnel to make equipment for missiles and the nuclear fuel cycle.



Figure 2. The army major holding an impeller for a liquid fuelled missile made in his factory

It is heartening that experts who look at the pictures find the quality of workmanship to be poor, especially for high-tech activities such as missile and nuclear facilities. The German companies and government have commented on this issue. They point out that the equipment built by Burma using these tools does not make use of the high precision possible with these machines. We do not assert that the tools represent an export violation, only that they give us unimpeachable evidence of where activities are taking place, and detailed evidence of what is being made for use at other nuclear sites.

Burma also had plans to use unnecessarily complex processes, such as laser isotope separation to enrich uranium. All experts judge that many of these efforts will be unsuccessful and beyond Burma's reach. So the program is not an immediate military threat, unless there are big changes. These would include support from another country such as DPRK and a shift to more useful technologies such as gas centrifuges. Sai Win has also described efforts to develop gas centrifuges. This is noted in the original analysis of DVB, and Win has given more detail in subsequent interviews. Gas centrifuge technology is far simpler than LIS and Burma has a chance of eventually succeeding, still probably only with outside help.

The follow-up is obvious. Burma bought high quality German machine tools for civilian “student training” and is using them instead for military purposes. There need to be penalties from supplier nations for this act.

Burma has some very old-style agreements with the IAEA. The Burmese agreement formats are of the pre-Iraq era. Following the difficulties IAEA faced with Iraq circa 1991, the international community strengthened these agreements and asked all nations to sign the updated versions. Burma is among the holdouts that decline to sign. In Burma’s case they diplomatically and politely ignore the requests. Unfortunately, the old agreements limit IAEA to asking a few simple questions and then there is no provision for verification inspections or deep investigations. The Burmese government has already issued a strongly worded denial of the DVB story, so it is unlikely to have any more to say to IAEA.¹³ IAEA will need the full backing of the Security Council if they are to advance beyond this stage.

Burma is a member of ASEAN and a party to its Nuclear Weapons Free Zone. This commitment is in doubt. ASEAN ratified the Treaty of Bangkok to establish its NWFZ and to police it. The treaty has strong language for investigation and enforcement; stronger than the language in IAEA agreements. Western countries have become engaged in many other wars and enforcement actions in other parts of the world, and have no stomach for yet another intervention in Burma. It is up to ASEAN to police its own agreements and to nip a fledgling nuclear program in the bud.

Summary

A significant defector from Burma in 2010 was an insider in military programs and came forth after viewing a DVB broadcast about the special factories. He is military man and can describe what he saw, but he often is unable to explain much about the end use, just its name and photo. It is the job of an intelligence analyst to review the information and assess its use.

This defector source can describe a program to build nuclear weapons, driven from the top, and he can describe three sites that appear to be real and are known from other sources. His color photos match up with the tools and visits of the Germans. All in all, this defector has a very compelling tale to tell and a lot of credibility given all of the consistency in this story. In this sense, he is a modern version of Mordecai Vanunu, the Israeli technician who brought photos out of Dimona 1986 showing Israeli activities.

¹³ <http://www.dvb.no/news/burma-denies-nuclear-allegations/10232>



Figure 3. Bomb reactors built in Burma for uranium metal production. The one on the left is discolored from heating. The one on the right has an improved sealing mechanism.

All photos courtesy of the Democratic Voice of Burma