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Alvin Chew



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SYNOPSIS

Israel and the US attacked Iran's nuclear facilities recently. The military strikes might have taken out or damaged Iran's uranium enrichment stockpile and facilities, but its nuclear ambition can only be shaped through effective nuclear diplomacy.

COMMENTARY

Iran's unwillingness to cooperate with the International Atomic Energy Agency (IAEA) under its Safeguard Agreements culminated in a series of military attacks on its nuclear facilities. Israeli and US forces struck deep into several Iranian nuclear sites, aiming to eliminate Iran's nuclear programme, which the latter has always insisted is for peaceful purposes.

On June 12, the IAEA had presented a [resolution](#), backed by 19 of its 35 governing board members, calling for Iran to comply with its safeguard obligations. Iran rejected the call, further reinforcing its defiance by pledging to build more enrichment facilities, which would bring it a step closer to developing a nuclear bomb. This paved the way for Israel to conduct a preemptive assault on Iran's nuclear facilities.

Targeted Strikes on Nuclear Facilities

On June 13, under Operation Rising Lion, Israel attacked three Iranian nuclear sites at Natanz, Isfahan and Fordow with the high-risk goal of ending Iran's controversial nuclear programme. The facilities at Natanz and Isfahan suffered extensive damage, while Fordow remained intact because of its deep underground protection. To destroy Fordow, Israel called on the US to join in the attacks. On June 22, Fordow reportedly succumbed to attacks by US B-2 Spirit bombers, which dropped GBU-57 "bunker-buster" bombs during Operation Midnight Hammer.

The air operations targeted specific nuclear front-end fuel cycle facilities that could set Iran on the pathway to nuclear weaponisation. Natanz and Fordow are both enrichment facilities and thus contain only uranium. Attacks on such facilities have little radiological fallout as natural uranium has long half-lives and is therefore weakly radioactive. Furthermore, the enrichment centrifuges' central cascade at both facilities were sited underground, with little likelihood of uranium dispersion into the atmosphere if both facilities were compromised.

Isfahan served as the primary technology research centre where most Iranian scientists worked. The site also housed fuel production facilities, and enriched uranium fuel was believed to be stored in underground tunnels. The fuel production facilities and buildings aboveground were destroyed, but radiation contamination did not spread off-site.

A research reactor in Arak was also bombed subsequently. A heavy water research reactor, it offered the possibility of nuclear weapon production via the plutonium route. However, as the reactor was under construction when Israeli missiles struck, there was no nuclear fallout.

Israel did not attack Iran's civilian nuclear power plant (NPP) at Bushehr. Any attack on an operational NPP would result in the highest catastrophic consequences equivalent to the Chernobyl or Fukushima disasters. The uranium fuel in an NPP would undergo fission, generating harmful radioactive nuclides such as Iodine-131 and Cesium-137. The atmospheric release of such radionuclides would require the immediate evacuation or sheltering of nearby populations. Neighbouring Gulf states would have also been affected.

Reactions to the Strikes

The US air strikes were well-coordinated, with Israel clearing the airspace to allow the US stealth bombers to deliver their ordnance to their targets without being detected. However, the United Nations and several countries have condemned the US air attacks on Iran. The US Congress itself was divided on the lawfulness of the operation.

Iran claimed that it had not violated the Non-Proliferation Treaty (NPT), given the inalienable right of member states to pursue the peaceful uses of nuclear energy, including the enrichment of uranium. However, it failed to provide justifications for its possession of highly enriched uranium (HEU), which is defined by the threshold level of 20 per cent purity and above, deemed capable of producing a nuclear bomb. The IAEA had assessed that Iran had more than 400 kg of HEU at 60 per cent purity, which could provide for nine nuclear bombs.

IAEA Director-General, Rafael Grossi, confirmed that Iran possessed enough materials to make a bomb but cautioned against claims that Iran was embarked on a nuclear weapons programme. Similarly, the US Director of National Intelligence, Tulsi Gabbard, did not find evidence that Iran was developing a bomb. US President Donald Trump dismissed her assessment and went ahead to support Israel in attacking Iran.

Nuclear Diplomacy is the Way to Go

There is still no confirmation on the location of Iran's HEU stockpile or whether it has been destroyed. Iran claimed the stockpile had been moved to a secure location before the strikes. The only way to verify is for the IAEA to be allowed to conduct inspections on the ground, which would require a cessation of hostilities.

Iran does not require any HEU for its civilian NPP in Bushehr, as Russia supplies the fuel. Even if it wants to enrich uranium for its NPP, the facility will only require three per cent enrichment, which is not sufficient for nuclear bomb development.

Iran is assessed to have a latent capability to develop a nuclear bomb. Still, it has probably not done so because it hopes to get the highest leverage possible at the negotiation table. Once Iran acquires the bomb, it would lose its bargaining chip at negotiations, as the only route for it is to disarm.

The 2015 Joint Comprehensive Plan of Action (JCPOA) was a landmark deal to curb Iran's nuclear programme in exchange for sanctions relief. The US defaulted on the agreement in 2018 during the first Trump administration and would need to put up an attractive offer if it is sincere in negotiating with Iran. Destroying Iran's enrichment facilities and the elimination of its top nuclear scientists will not deter it from producing a bomb in the future. Its nuclear programme started in the 1960s and will not be derailed easily.

To change Iran's nuclear ambitions, it will require agreements that will stall its progress at enrichment and subsequently persuade it to get back on the non-proliferation track, which was what the JCPOA had striven to do. Israel has estimated that the military strikes on Iran have set back its nuclear programme by two years. Had the JCPOA remained intact, Iran would have capped its enrichment limits and stockpile up to 2030.

Conclusion

Assuming that Iran had plans to acquire a nuclear bomb, the preemptive military strikes on its nuclear facilities might have hastened its resolve and the pace of its nuclear development. Iran had threatened to withdraw from the NPT after the first wave of attacks by Israel. It then expressed hopes for negotiations with the US, only to be disappointed when the latter also joined in the attacks. While we hope that the conflict will continue to de-escalate, the US should seize the opportunity to strike a deal with Iran quickly, given that the latter has kept its commitment and remains a member of the NPT.

Alvin Chew is a Senior Fellow at the S. Rajaratnam School of International Studies (RSIS), Nanyang Technological University (NTU), Singapore.

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