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**Beyond the “Atomic Archive”**

**Making Sense of Iran’s  
Nuclear Intentions**

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# Beyond the “Atomic Archive” Making Sense of Iran’s Nuclear Intentions

In January 2018, through a clandestine operation that took place in Shorabad (a distant Tehran suburb), Israel obtained a large number of documents, which shed new light on the Iranian nuclear program. Along with more recent developments, the Archive suggests that Tehran’s weaponization efforts could be – assuming that it remains dormant – reactivated at any time.<sup>1</sup> Irrespective of the exact fate of the provisions included in the 2015 Joint Comprehensive Plan of Action (JCPOA), Tehran’s enduring nuclear weapons expertise, and probable violations of its Comprehensive Safeguards Agreement (CSA) and Nuclear Nonproliferation Treaty (NPT) legally-binding commitments leave little doubt about its persistent intentions.

## What was found

The warehouse from where the documents were taken comprised 32 large safes loaded in mobile containers. Israeli agents were able to extract information from about a third of them. Documents taken to Israel (hereafter “the Archive”) include:

- 114 folders containing more than 55,000 pages, including 8,500 handwritten documents. Some of them contain handwritten notes, including from the Mohsen Fakhrizadeh, the head of the program, and Fereydoon Abbasi-Davani, a well-known key expert (for instance on how to deceive the International Atomic Energy Agency, IAEA). Folders were divided in three color-coded categories: black (technical), green (infrastructures), and red (relations with the IAEA).
- 183 CDs and DVDs containing another 50,000 files of about a hundred pages each.

Israel believes it amounted to a fifth of the whole archive. Most of the documents in its possession are from before 2006.

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<sup>1</sup> This report was written after a series of extensive briefings by and discussions with officials received during a trip to Israel in October 2019. The author was able to see some of the original materials. Information included in this text stems also from the reports produced in 2018 and 2019 by the Institute for Science and International Security, the Belfer Center for Science and International Affairs at the Harvard Kennedy School, the Foundation for the Defense of Democracies, as well as from Ronan Bergman, « Iran’s great nuclear deception », Ynet Magazine, 23 November 2018.

The Archive was curated in 2016, after the signing of the JCPOA, and the documents hidden in Shorabad in 2017, in a non-descript location, probably, inter alia, to ensure the IAEA would not ask to inspect it. Only four or five persons knew about the whole process.

Copies of the documents in possession of the Israeli government have been given to the IAEA.<sup>2</sup> Intelligence was also shared with P5 countries. None of the recipient countries or organizations had publicly expressed any doubt about the authenticity of the documents.

## The Archive: What's New

The Archive confirms and details the scope of the Iranian parallel nuclear program, which involved the full range of activities – from mining and enriching uranium to producing operational nuclear weapons and adapting them on ballistic missiles re-entry vehicles (the Shahab-3 missile).

The most stunning finding from the Archive is the Iranian plan – dating from the turn of the century, at the time “Project 110”<sup>3</sup> was launched – to **manufacture five ten-kilotonimplosion-type, UHE-based nuclear devices** (one for hot testing<sup>4</sup> and four warheads) by early 2003. The plan was approved in 1999 by the “Supreme Council for Advanced Technologies”, a body formed in 1998 which included President Khatami, National Security Council Secretary Rouhani, Defense Minister Adm. Shamkhani, and AEOI Head Aghazadeh.

At first glance, this may suggest a limited nuclear program, similar to that of, say, South Africa. However, the Archive makes it clear that this was only an initial step, and the planned infrastructure was for a much more ambitious program. Several hundred personnel were involved in nuclear weapons research and development.

Iran wanted to move fast: it thus sought assistance from foreign experts. More than a dozen such experts, none of which coming from Western Europe, assisted its nuclear weapons program. Iran also got access to the so-called “AQ Khan” blueprints in 2003. However, by the end of 2002, Iran had already settled on an indigenous, workable implosion design, before getting those blueprints – which were nevertheless helpful for benchmarking. In addition, Iran had identified a budgetary line for possible highly enriched uranium (HEU) purchase abroad. The seized documents do not include any sign of State-level assistance: it is not known, in particular, whether there ever was nuclear weapons cooperation between Tehran and North Korea.

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<sup>2</sup> This has probably allowed the Agency to confirm the authenticity of many of them, in particular through the correspondence with IAEA officials.

<sup>3</sup> Project 110 was part of the AMAD program. Project 111 focused on the re-entry vehicle.

<sup>4</sup> The Archive makes it clear that Iran was in the process of selecting a test site (Project Midan), with five possible locations identified.

Archive documents confirm that Iran “halted”, to use the US 2007 National Intelligence Estimate expression, its weapon-related activities in 2003, mostly for fear of international reactions. However, by the end of the year the secret AMAD Project was morphed into a double-faced organization entitled SADAT (2003-2008), then PARDIS (2008-2011), then from 2011 onwards SPND for “Organization for Defensive Innovation and Research”. SPND included 70% of the AMAD personnel and was headed by Mohsen Fakrizadeh. This allowed Iran to maintain its nuclear expertise under the guise of dual-use activities (civilian and military) such as nuclear physics, 3D simulations, etc. Furthermore, and crucially, the Archive includes evidence that the SPND was also to address knowledge gaps. The SPND’s covert activities include in particular three programs, Sareb-1 (testing), Sareb-2 (warhead integration), and Sareb-3 (warhead production).

## A Unique Case

Several countries have abandoned their nuclear weapons ambitions in the past. However, **the Iranian case is unique.**

- *Sweden* abandoned its nuclear project in 1968 without having built fissile material production facilities or elaborated actual weapons designs. There was a deliberate strategy of transferring personnel and equipment resources from nuclear weapons work to the area of materials research for protection (EMP effects, etc.) and non-proliferation. Nuclear weapons research staff declined rapidly from about 300 personnel to 100 in 1972, and a few tens by the late 1980s.<sup>5</sup> Some archives were maintained by individuals due to stringent Swedish laws forbidding any destruction of official work.
- *Switzerland* had a small undeclared uranium stockpile but never went beyond theoretical studies.<sup>6</sup> Decades later, when it accessed a large cache of proliferation-sensitive documents connected to the international network known as the “AQ Khan network”, it decided its destruction under IAEA supervision.
- *Brazil* may have developed designs for nuclear weapon.<sup>7</sup> It maintained uranium enrichment facilities. There is no evidence it maintained any structured program to develop a nuclear weapons option.
- *South Africa* abandoned its nuclear arsenal in 1990. Its HEU production plant was closed and the HEU stockpile downgraded to a lower percentage of enrichment. Weapons blueprints were destroyed, some under IAEA

<sup>5</sup> Thomas Jonter, Sweden and the Bomb. The Swedish Plans to Acquire Nuclear Weapons, 1945-1972, SKI Report 01:33, September 2001.

<sup>6</sup> Jurg Stüssi-Lauterberg, Historical Outline on the Question of Swiss Nuclear Armament, 31 December 1995 (US Department of State translation).

<sup>7</sup> Brazil Nuclear Weapons Program, [www.globalsecurity.org](http://www.globalsecurity.org).

supervision. Nuclear facilities were converted to non-nuclear weapon research. A full and complete inventory of materials and facilities was compiled by the IAEA.<sup>8</sup>

- *Iraq* had maintained after 1991 some documents and small equipments hidden in scientists' homes, that could have been useful in resuming uranium enrichment activities. The Iraqi Atomic Energy Commission expanded its activities at the turn of the century. Testimonies indicated that Iraq had the intention to resume its nuclear program after the lifting of sanctions.<sup>9</sup>
- *Libya* gave the IAEA and the United States its nuclear-weapons related documentation.

None of these precedents included maintaining a curated archive, a structured organization with paid staff working on sensitive activities, undeclared nuclear sites and materials, fissile material production facilities, and actual warhead designs. And no other currently non-nuclear country is close to having the same capabilities. **Iran is almost certainly the only true state with “latent nuclear weapon capability”** – i.e. the only known country that would have the ability to built nuclear weapons in a short period of time should it decide to do so and was left alone.

## Implications And Further Developments

The Archive reveals or confirms that those analysts who thought as early as 2002-2003 that Iran had *operational* nuclear weapons intentions and was not just hedging or seeking to be a threshold State (the dominant view at the time), are vindicated.

In 2003, there were significant changes in the Iranian security environment: revelations about its secret nuclear activities had been made the year before, leading to an IAEA inquiry; evidence of the scope of the AQ Khan network was beginning to circulate; Afghanistan and Iraq had been invaded; and the Islamic Republic's archenemy, Saddam Hussein, was gone. The opening of talks with the Europeans and the decision to take reorient its nuclear-weapons related activities may have been part of the same strategic reorientation.<sup>10</sup>

The Archive contains ample evidence of Iran rewriting its nuclear history, for instance by changing documents dates in case the IAEA had one day access to them. It also

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<sup>8</sup> Michal Underco, « Birth of a norm champion : how South Africa came to support the NPT's indefinite expansion », *The Nonproliferation Review*, vol. 26, Issue 1-2, 2019.

<sup>9</sup> David Kay, Testimony on the activities of the Iraq Survey Group to the US Congress, 3 October 2003.

<sup>10</sup> The Iranian government at the time (headed by President Rouhani, who as we now know had approved the secret program) may have taken its clues from the then French ambassador to Tehran, who in 2003 advised a close friend to Rouhani to give time and funds to Iranian nuclear researchers « to archive all the data they had collected in order to protect their achievements for the future ». His interlocutor later claimed that he « conveyed [the] message... It worked ! ». François Nicoullaud, « Rouhani and the Iranian Bomb », *The New York Times*, 26 July 2013. There is no evidence that the ambassador acted on official instructions or authorization from Paris.

documents various deliberate concealment efforts, such as the dismantlement of the Parchin explosive chamber before the 2015 IAEA visit to this site.

**The Iranian weapons program went well beyond what the IAEA assessed in 2015** to be “*feasibility and scientific studies*” involving just “*some*” technical competences and capabilities.<sup>11</sup> As stated by a report by Harvard University researchers who had extensive access to the files, the secret curating and storing of the Iranian documents in themselves reflected “*a desire to at least maintain the option to return to weaponization at a later date*”.<sup>12</sup> Or, to put it differently, as other recognized experts have put it, “*It is difficult to see how storing and curating an extensive nuclear weapons archive focused on developing and building missile-deliverable nuclear weapons is consistent with Iran’s pledge under the JCPOA that under no circumstances will it ever seek nuclear weapons*”.<sup>13</sup> The 2015 JCPOA has been aptly described by a key Obama administration official as a tool that « *do[es] not deny Iran nuclear-weapon latency, but rather manage and control it* ». <sup>14</sup> We now know that the expertise it gained from its program was beyond what was assessed in 2015.

There is no reason to think that Iran abandoned its nuclear weapons intentions in 2015. In fact, had Iran decided to do so, it would have been easy for Tehran to construct a plausible (or at least face-saving) narrative according to which past nuclear-weapons related research and development had not been sanctioned by the Supreme Leader, and to give the IAEA full access to its archives and personnel. Instead, Iran lied on all twelve chapters of the IAEA’s so-called Possible Military Dimensions report.

## Towards An Active Nuclear Weapons Program - Again?

As seen above, Iran has carefully maintained its nuclear weapons expertise.

Other elements of Iran’s program may still be unknown. After the April 2018 bombshell, photographic evidence shows Iran moved containers away – and possibly burned items – from another, nearby Southern Tehran suburb (Turquzabad).<sup>15</sup> This existence of this alleged atomic warehouse, which Iran claimed was a carpet cleaning factory, was revealed by Israel in September 2018. The warehouse may have hosted some undeclared nuclear material (“*15 kilograms of radioactive material*” according to the Israeli government). News agency reported that the IAEA had found traces of

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11 « Final Assessment on Past and Present Outstanding Issues Regarding Iran’s Nuclear Programme », IAEA, GOV/2015/68, 2 December 2015, p. 15.

12 Aaron Arnold et al., *The Iran Nuclear Archive : Impressions and Implications*, Belfer Center for Science and International Affairs, Harvard Kennedy School, April 2019, p. 1.

13 David Albright et al., *The Iranian Nuclear Archive : Implications and Recommendations*, ISIS/FDD, 25 February 2019, p. 3.

14 Richard Nephew, « Nuclear Latency and Iran », in Joseph F. Pilat (ed.), *Nuclear Latency and Hedging. Concepts, History and Issues*, September 2019, p. 157.

15 See David Albright & Andrea Stricker, « IAEA Visits Turquz Abad : Too Little, Too Late ? Institute for Science and International Security, 4 April 2019 ; and Ibid., « Brief Response to IISS Piece », Institute for Science and International Security, 8 April 2019.

uranium at the site. One year later, Israel announced the identification of another site, near Esfahan, where it claimed Iran had “*conducted experiments to develop nuclear weapons*”. Israeli officials suggest that they have evidence of at least three other sites hosting undeclared nuclear material. This implies that **Iran is likely to be today in violation of its NPT and CSA commitments**. Since 2017, Iran has breached the JCPOA provisions by exceeding the amount of UF<sub>6</sub> it is permitted to store; increasing its level of enrichment beyond 3.67 percent to 4.5%; and restarting some of its advanced centrifuge R&D, including new “IR-7” and “IR-9”.<sup>16</sup> In so doing, **it has already shortened the one-year breakout time, which was *de facto* codified in the JCPOA**.

**Finally, two key decision-making officials who approved the 1999 plan to manufacture nuclear weapons** (see above) **are still in power today**: then-NSC Secretary Rouhani is now President; then-Defense Minister Adm. Shamkhani is now NSC Secretary (to say nothing of ayatollah Khamenei, who could not have been kept in the dark of the 2000s plan).

In other words, **Iran in 2019 is in a good position to fully resume, should it decide to do so, an active nuclear weapons program**.

A full and in-depth verification of Section T of the JCPOA by the IAEA, including timely visits to allegedly off-limits military sites<sup>17</sup>, is essential to have a full picture of Iran’s past and current nuclear efforts and to devise the best way to handle the Iranian nuclear problem. The Agency should also report on any findings based on new information contained in the Archive.

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<sup>16</sup> In 2018 and 2019, Iran apparently attempted to import carbon fiber, a key material for advanced centrifuges. Simon Henderson & Elana DeLozier, Iran’s Nuclear Steps and the New IAEA Chief, The Washington Institute, 30 October 2019.

<sup>17</sup> Iran has declared its military sites off-limits. However, the IAEA is authorized to visit all military sites under its legally-binding Comprehensive Safeguards Agreement as well as under its implementation of the Additional Protocol. See Olli Heinonen, The IAEA’s Right and Obligation to Inspect Military Facilities in Iran, Foundation for the Defense of Democracies, 4 April 2018.

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