

# Board of Governors

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## Implementation of the NPT Safeguards Agreement in the Syrian Arab Republic

*Report by the Director General*

### **A. Introduction**

1. On 2 June 2008, the Director General informed the Board of Governors that in April of that year the Agency had been provided with information alleging that an installation at the Dair Alzour site in the Syrian Arab Republic (Syria), destroyed by Israel in September 2007, had been a nuclear reactor. Satellite imagery available to the Agency showed that, by the end of October 2007, large scale clearing and levelling operations had taken place at the site which had removed or obscured the remains of the destroyed building.<sup>1</sup>

2. The Agency was provided with access to the site on 23 June 2008, at which time it was permitted to take environmental samples.<sup>2</sup> While it cannot be excluded that the destroyed building was intended for non-nuclear use, the Agency has assessed that the features of the building and the connectivity of the site to adequate pumping capacity of cooling water are similar to what may be found at nuclear reactor sites.<sup>3</sup> The Agency has also assessed that the water pumping equipment seen by it at the Dair Alzour site, and the procurement by Syria of large quantities of graphite and barium sulphate, all of which Syria has stated were acquired for civilian and non-nuclear related uses, could support the construction of a reactor (GOV/2009/36, para. 14).

3. Syria has maintained that the destroyed building was a military non-nuclear installation. The information and access provided by Syria to date has not allowed the Agency to confirm Syria's

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<sup>1</sup> GOV/OR.1206, para. 26 and GOV/2008/60, para. 16.

<sup>2</sup> GOV/2008/60, para. 4.

<sup>3</sup> GOV/2008/60, paras 10 and 11.

statements regarding the non-nuclear nature of the destroyed building or to substantiate Syria's claims regarding the procurement efforts for civilian, non-nuclear uses.

4. Analysis of the samples taken in June 2008 at the Dair Alzour site indicated the presence of particles of anthropogenic<sup>4</sup> natural uranium of a type not included in Syria's declared inventory of nuclear material. Syria has stated that the origin of these particles was the missiles used to destroy the building. The Agency has assessed that there is a low probability that the source of these particles was the use of missiles.<sup>5</sup> The presence of such particles points to the possibility of nuclear related activities at the site and adds to questions concerning the nature of the destroyed building. Syria has yet to provide a satisfactory explanation for the origin and presence of these particles. In this context, information yet to be provided by Israel might be helpful in clarifying the matter.<sup>6</sup>

5. The Agency has repeatedly requested Syria to have substantive discussions with it on the nature of the destroyed building, and to discuss relevant satellite imagery and other information available to the Agency. In a letter dated 7 January 2010, the Agency reminded Syria of its repeated requests for:

- information concerning the Dair Alzour site, the infrastructure observed at the site and certain procurement efforts which Syria has stated were related to civilian non-nuclear activities;
- access to technical documentation and any other information related to the construction of the destroyed building;
- access to locations where the debris from the destroyed building, the remains of munitions, the debris from equipment and any salvaged equipment had been and/or is now situated; and
- further access to the Dair Alzour site itself and access to three other locations allegedly functionally related to the Dair Alzour site.

6. The Agency has, on several occasions, offered to engage with Syria to establish the necessary modalities for managed access to sensitive information and locations, including the Dair Alzour site and the three other locations. Such access would enable the Agency to establish the facts and make progress in its verification, while protecting military and other information which Syria considers to be sensitive.

7. Since the time of the Agency's visit to the Dair Alzour site in June 2008, Syria has declined to have substantive discussions with the Agency, has not provided any detailed information in response to the Agency's requests and has not agreed to the Agency's requests for further access to the Dair Alzour site and access to the three other locations of interest to the Agency in connection with its investigation.

8. Syria has also maintained its position that, due to the disposal of the debris from the Dair Alzour site, it was impossible to grant the Agency's request for access to it as the Agency's request had been made more than a year after the destruction of the building. Based on the discussions held in June 2008 in Damascus and other information available to the Agency, the Agency has continued to request access to the debris from the destroyed building and any salvaged equipment from the Dair Alzour site.

9. In relation to the anthropogenic natural uranium particles found at the Miniature Neutron Source Reactor (MNSR) (GOV/2009/36, para. 17), Syria's initial explanations for the presence of the

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<sup>4</sup> "Anthropogenic" refers to material that has been produced as a result of chemical processing.

<sup>5</sup> GOV/2009/9, para. 7.

<sup>6</sup> GOV/2009/36, para. 7.

particles were that they had originated either from standard reference materials used in neutron activation analysis or from a shielded transport container. These explanations were not supported by the results of subsequent sampling carried out by the Agency at the MNSR (GOV/2009/75, para. 6). In a meeting held on 2 November 2009 in Vienna, Syria suggested that the particles may have originated from other materials present at the MNSR, specifically quantities of yellowcake produced at a pilot phosphoric acid purification plant at Homs<sup>7</sup>, previously undeclared uranyl nitrate compounds derived from the yellowcake and/or small quantities of previously undeclared imported uranyl nitrate materials (GOV/2009/75, para. 7).

10. The possibility of a link between the particles found at the MNSR and those found at the Dair Alzour site requires further sampling and analysis by the Agency. The Agency also needs to determine whether the use of the natural uranium compounds at the MNSR may be relevant to allegations concerning one of the three other locations and whether experiments may have been performed with the larger quantities of yellowcake produced at the Homs plant.<sup>8</sup>

## **B. Verification Activities**

11. On 17 November 2009, during an inspection at the MNSR, the Agency provided Syria with a letter, dated 13 November 2009, in which it listed experimental activities carried out with nuclear material which, according to open sources, had been performed in Syria and which could be of relevance in determining the origin of the particles found at the MNSR. In the letter, the Agency requested access to the persons involved in those activities and to detailed information regarding the nuclear material and equipment used in the experiments. Syria made one of the requested persons available during the inspection and discussions were held on the experimental activities. Following up on Syria's statements concerning nuclear material at the MNSR (para. 9), samples were taken from yellowcake and uranyl nitrate compounds present at the MNSR. Environmental samples were also taken from equipment and locations at the MNSR associated with experimentation involving uranium-containing materials. In a letter to the Agency dated 6 December 2009, Syria provided limited information about some of the nuclear material observed at the MNSR. However, Syria did not address the Agency's concerns regarding the origin and presence of the anthropogenic natural uranium particles found there.

12. In a letter dated 7 January 2010, the Agency requested confirmation of the quantities of nuclear material observed at the MNSR, the complete reporting of all nuclear material, detailed information regarding the use of uranium-containing nuclear material and updates to the design information.

13. In a letter dated 21 January 2010, the Agency provided Syria with the results of the samples taken during the 17 November 2009 inspection. While the results confirmed the characteristics of the material as declared by Syria, the Agency informed Syria that further clarification regarding the presence and use of anthropogenic natural uranium at the MNSR was necessary, and proposed that a meeting be held in Damascus on 8 and 9 February 2010 to discuss these issues.

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<sup>7</sup> A pilot plant for the purification of phosphoric acid was constructed and commissioned in 1997 at Homs, Syria, with the support of the United Nations Development Programme and the IAEA. Yellowcake was produced as a by-product of the purification process.

<sup>8</sup> During a July 2004 visit to the Homs phosphoric acid purification pilot plant, Agency inspectors observed some hundreds of kilograms of yellowcake.

14. In a letter dated 10 February 2010, Syria declined the Agency's request for the meeting, indicating that, in the light of the information provided in the same letter, it could be planned for a later stage. The information Syria provided does not clarify the presence and use of anthropogenic natural uranium at the MNSR. The Agency is planning an inspection at the MNSR to be performed on 23 February 2010 to verify nuclear material at the MNSR and examine relevant source documents related to the experiments indicated above.

## **C. Assessment and Next Steps**

15. Syria has not cooperated with the Agency since June 2008 in connection with the unresolved issues related to the Dair Alzour site and the other three locations allegedly functionally related to it. As a consequence, the Agency has not been able to make progress towards resolving the outstanding issues related to those sites since the previous report to the Board of Governors.

16. Syria has provided some additional information concerning the presence and use of the anthropogenic natural uranium at the MNSR. However, Syria has not yet provided a full explanation of the activities and experiments involving nuclear material conducted at the MNSR that may have been the source of the particles found there. Therefore, further clarification from Syria is necessary in order to resolve this issue and to help exclude any possible link between the particles found at the MNSR and those found at the Dair Alzour site. Additionally, Syria is required to provide complete reporting of all nuclear material in Syria and to provide the Agency with access to all relevant documentation. The Agency has requested Syria's cooperation in these respects.

17. Since the November 2009 inspection, Syria has not fully cooperated with the Agency to facilitate the resolution of the issues concerning the MNSR. Syria has also not provided design information concerning the irradiation of uranium at the MNSR or met its nuclear material reporting obligations under the Safeguards Agreement (INFCIRC/407).

18. At both the Dair Alzour and MNSR sites, the Agency has found particles of anthropogenic natural uranium. Given that Syria has no reported inventory of natural uranium, this calls into question the completeness and correctness of Syria's declarations concerning nuclear material and facilities.

19. The Director General urges Syria to engage with the Agency on the above issues so that, in accordance with its mandate under Syria's Safeguards Agreement, the Agency is able to confirm that all nuclear material in Syria is in peaceful activities. For both the Dair Alzour and the MNSR sites, given the passage of time and the possible degradation of information, the Agency requests Syria to provide prompt access to all relevant information for the verification of Syria's declarations. The Director General is ready to agree with Syria on the necessary modalities for managed access to information and locations that will enable the Agency to establish the facts and make progress in its verification, while protecting military and other information considered by Syria as sensitive.

20. The Director General also urges Syria to bring into force an Additional Protocol to its Safeguards Agreement which will facilitate the Agency's work in verifying the correctness and completeness of Syria's declarations.

21. The Director General will continue to report as appropriate.