The United Arab Emirates Nuclear Program and Proposed U.S. Nuclear Cooperation

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April 1, 2009

Congressional Research Service
7-5700
www.crs.gov
R40344

CRS Report for Congress
Prepared for Members and Committees of Congress

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
01 APR 2009		**00-00-2009 to 00-00-2009**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
The United Arab Emirates Nuclear Program and Proposed U.S. Nuclear Cooperation	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Congressional Research Service,Library of Congress,101 Independence Ave, SE,Washington,DC,20540-7500**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**	**Same as Report (SAR)**	**19**	

Summary

The United Arab Emirates (UAE) has embarked on a program to build civilian nuclear power plants and is seeking cooperation and technical assistance from the United States and others. During 2008 and early 2009, the Bush Administration and the UAE government negotiated and signed a memorandum of understanding and a proposed bilateral agreement on peaceful nuclear cooperation pursuant to Section 123 of the Atomic Energy Act (AEA) of 1954. Then-U.S. Secretary of State Condoleezza Rice signed the proposed agreement on peaceful nuclear cooperation with the UAE on January 15, 2009.

The Obama Administration has not submitted the proposed agreement to Congress for the required review period. Under the AEA, Congress has the opportunity to review such a proposed agreement for 90 days of continuous session, after which the agreement becomes effective unless, during that time, Congress adopts a joint resolution disapproving the agreement and the resolution becomes law.

The agreement text states the intent of both governments to cooperate in a number of areas including, but not limited to, the development of the UAE's "civilian nuclear energy use in a manner that contributes to global efforts to prevent nuclear proliferation" and, "the establishment of reliable sources of nuclear fuel for future civilian light water reactors deployed" in the UAE. The agreement also states that future cooperation may encompass training, scientific exchanges, and technical assistance, including in the areas of nuclear security, infrastructure protection, and nuclear fuel and waste management.

To date, some Members of Congress have welcomed the UAE government's stated commitments not to pursue proliferation-sensitive nuclear capabilities, such as uranium enrichment or spent fuel reprocessing. Other Members have signaled their intention to weigh the proposed bilateral agreement in light of parallel and specific concerns about the UAE's cooperation with international efforts (such as sanctions) to prevent Iran from developing nuclear weapons and ballistic missiles, as well as the potential proliferation or safety risks inherent to exporting U.S. nuclear technology.

In the 111th Congress, legislation (H.R. 364) has been introduced that would require President Obama to certify that the UAE has taken a number of steps to strengthen its export controls and stem illicit trade with Iran before any agreement could come into effect or related U.S. exports of nuclear technology to the UAE could be approved. In 2007, the UAE adopted a stronger export control law, but has yet to issue implementing regulations for the law or to fully staff a national export control body to enforce it. In the interim, export control enforcement functions remain the responsibility of authorities in the UAE's individual emirates, in coordination with the national government. The U.S. State Department reports that cooperation with national- and emirate-level officials has improved since 2006, resulting in a number of joint interdiction operations.

This report provides background information on the UAE nuclear program, reviews developments to date, analyzes proposed nuclear cooperation with the United States, and discusses relevant legislative proposals and options. See also CRS Report RS21852, *The United Arab Emirates (UAE): Issues for U.S. Policy*, by Kenneth Katzman, and CRS Report RS22937, *Nuclear Cooperation with Other Countries: A Primer*, by Paul K. Kerr and Mary Beth Nikitin.

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The United Arab Emirates: Background and U.S Relations

The United Arab Emirates (UAE) is a federation of seven emirates (principalities): Abu Dhabi, Dubai, Sharjah, Ajman, Fujayrah, Umm Al Qawayn, and Ras Al Khaymah. National authority rests in the hands of a Federal Supreme Council, which is composed of the hereditary rulers of the country's constituent emirates and elects the national president from among its members. Sheikh Khalifa bin Zayed Al Nahyan, the ruler of Abu Dhabi, was elected UAE President in 2004 following the death of his father Sheikh Zayed bin Sultan Al Nahyan, who had ruled Abu Dhabi since 1966 and served as UAE President since 1971. In practice, the wealthier and more powerful emirates of Abu Dhabi and Dubai exercise the strongest influence over the country's affairs; under current convention, the ruler of oil-rich Abu Dhabi serves as the UAE President, and the ruler of the UAE's commercial hub, Dubai, serves as Vice President. The Supreme Council appoints the Prime Minister and the Council of Ministers (cabinet), which initiates legislation for ratification by the Supreme Council and the President.

The United States and the UAE have enjoyed close and cooperative relations in recent years, in spite of periodic differences with regard to political reform, the Israel-Palestinian conflict, counterterrorism, and U.S. policies regarding Iraq and Iran. Military cooperation and arms sales form a key pillar of U.S.-UAE relations. The UAE hosts frequent port calls and shore visits for U.S. naval vessels and allows the U.S. military to use Al Dhafra air base in support of a variety of missions in the U.S. Central Command (CENTCOM) area of operations. In 2007 and 2008, the Bush Administration notified Congress of over $19.4 billion in potential arms sales to the UAE, including what would be the first overseas sale of the Terminal High Altitude Air Defense system.

Bilateral trade has increased in recent years, with 2008 U.S. exports valued at almost $11 billion through September 2008, making the UAE the largest U.S. export market in the Middle East. The Bush Administration began negotiating a free trade agreement with the UAE in 2004, but did not conclude the negotiations. The United States does not import a significant amount of oil from the UAE. However, the UAE exports over 2 million barrels of oil per day, making it a key global energy producer.

The United Arab Emirates Nuclear Program

The government of the United Arab Emirates (UAE), like others in the Middle East, has announced plans to acquire nuclear energy production technology as a means of meeting projected national energy consumption needs.[1] Renewed global interest in nuclear power has led some experts and observers to express concern that the projected spread of nuclear technology in

[1] The governments of Turkey, Egypt, Jordan, Saudi Arabia, and Algeria have announced their intent to acquire nuclear energy production capabilities; their respective programs have moved forward in recent years with varying degrees of specificity and commitment. To date, Turkey, Jordan, and Egypt appear to have made the most progress toward their stated goals of constructing and operating domestic nuclear power plants. Like the UAE, their plans do not envision operational plants before 2015. Turkey and Egypt have active peaceful nuclear cooperation agreements with the United States pursuant to Section 123 of the Atomic Energy Act (AEA) of 1954.

coming years could contribute to nuclear proliferation. In the Middle East, added scrutiny is often applied to the motives and choices of regional actors regarding nuclear technology because of concern that Iran's nuclear program and Israel's presumed nuclear weapons may motivate other regional governments to seek nuclear technology for strategic or military purposes. Other concerns about nuclear safety relate to potential terrorist attacks or political instability, both of which have threatened some regional countries in recent years. UAE officials report that they have considered these potential risks carefully, and have announced plans and measures intended to address proliferation and security concerns.

While UAE officials stress that final decisions about the scope of the nuclear program and potential international participation have not been made, plans for the program are at an advanced stage and are awaiting final legal authorization. Policymakers and advisers in the government of Abu Dhabi, in consultation with representatives from the other six emirates, have set out an ambitious agenda for the program and are guiding its preliminary implementation. In April 2008, the UAE government issued a policy statement[2] that provides a rationale for the country's perceived need for nuclear energy and states guiding principles for the nuclear energy program. Nascent operating and regulatory bodies have been formed and are awaiting the passage of authorizing legislation to begin their formal work. The end goal of the program, according to officials and related documents, is to build and operate a "fleet" of nuclear power plants to generate electricity for the UAE, supported by advanced, indigenously-managed safety, regulatory, security agencies.

The UAE government pledged $10 million in August 2008 toward an international nuclear fuel bank proposed by the Nuclear Threat Initiative, a non-governmental organization. The bank would be administered by the International Atomic Energy Agency (IAEA),[3] which would also implement safeguards on any future UAE nuclear facilities. Mr. Hamad Al Kaabi, UAE Special Representative for International Nuclear Cooperation, explained August 7 that the contribution is part of the UAE's policy to support multilateral fuel supply efforts—a policy consistent with the country's decision to rely on foreign fuel suppliers.

Rationale

UAE officials estimate that their country must expand its power generation and transmission capacity from the current level of 16 gigawatts to 40 gigawatts by 2020 in order to meet projected demand increases, which they estimate will continue growing at a nine percent annual rate. In spite of the recent slowdown in global and domestic economic activity, representatives of the UAE nuclear program believe that the energy demand projections they are using to justify and plan the acquisition of nuclear plants remain accurate, particularly in light of planned industrial and commercial projects in energy-intensive sectors in the emirate of Abu Dhabi.[4] To date, UAE

[2] Policy of the United Arab Emirates on the Evaluation and Potential Development of Peaceful Nuclear Energy, released April 20, 2008. Available at https://pcs.enec.gov.ae/Content/Home.aspx.

[3] For more detail about the proposal, see CRS Report RL34234, *Managing the Nuclear Fuel Cycle: Policy Implications of Expanding Global Access to Nuclear Power*, by Mary Beth Nikitin, Anthony Andrews, and Mark Holt.

[4] CRS meeting with Abu Dhabi Executive Authority and Emirates Nuclear Energy Corporation representatives, Abu Dhabi, December 14, 2008. Large scale petrochemicals and aluminum production projects are already underway in Abu Dhabi's Kalifa Industrial Zone. See Chris Stanton, "Taweelah to host chemical city," *The National* (Abu Dhabi), (continued...)

officials and representative have not publicly shared economic cost and energy use analyses referred to in briefings on their nuclear program.

In arguing for nuclear energy as a solution to the country's projected energy needs, the UAE government policy statement concludes that "known volumes of natural gas that could be made available to the nation's electricity sector would be insufficient to meet future demand."[5] The UAE currently exports roughly 600 million standard cubic feet per day of natural gas to Japan under long term supply arrangements and imports roughly 2 billion cubic feet of natural gas from Qatar via the underwater Dolphin pipeline system.[6] Similarly, UAE officials believe that crude oil and diesel could be "logistically viable" sources of energy, but would impose high economic opportunity costs (as a result of lost export revenue) and environmental costs. Officials determined that coal could be a more economical solution, but would have even greater environmental costs and, as an import, also would raise concerns for the UAE about the security of supply. UAE officials believe that solar and wind energy sources could supply "only 6-7% of peak electricity demand by 2020," even after "aggressive development."

Development Plans

The end goal of the program, according to officials and related documents, is to build and operate a "fleet"[7] of nuclear power plants to generate electricity for the UAE, supported by advanced, indigenously-managed safety, regulatory, and security agencies that will be developed over time and with outside assistance. The UAE government is seeking to bring its first nuclear power plant online by 2017 along with required facilities and equipment for safety, storage, and system management. Under current plans, capacity would expand thereafter to include multiple nuclear power plants. Reports suggest that the UAE is moving forward with a contract bidding and award process, with the goal of selecting a primary contractor or team in late 2009. UAE officials reportedly plan to build in contractor incentives for on-time delivery of a turnkey plant before the ambitious 2017 deadline.[8] No specific decisions have been made regarding the source of nuclear fuel for the planned nuclear reactor.

(...continued)

May 4, 2008; and, Chris Stanton and Ivan Gale, "EMAL smelter remains on schedule," *The National* (Abu Dhabi), January 13, 2009.

[5] Policy of the United Arab Emirates on the Evaluation and Potential Development of Peaceful Nuclear Energy, released April 20, 2008. Available at https://pcs.enec.gov.ae/Content/Home.aspx.

[6] One economic press report suggested that the UAE may be paying as little as $1.25/million BTU of natural gas. *Middle East Economic Digest*, "UAE purchases gas from Dolphin pipeline at reduced rate," May 16, 2008. For more information on the pipeline, see http://www.oxy.com/Our_Businesses/oil_and_gas/Pages/og_mena_dolphin.aspx.

[7] Correspondence between CH2M Hill and U.S. Department of Energy, National Nuclear Security Administration, June 2008.

[8] CRS meeting with Abu Dhabi Executive Authority and Emirates Nuclear Energy Corporation representatives, Abu Dhabi, December 14, 2008.

Current Infrastructure and Regulatory Regime

The UAE currently has no nuclear material under IAEA safeguards. It signed the NPT in 1995 and completed a small quantities protocol in 2003, which applies to non-nuclear weapons states that do not have significant nuclear programs or nuclear material. The UAE also has undertaken Technical Cooperation projects with the Agency, some of which are directly related to nuclear electricity generation. For example, a project begun in 1977 advised the government "on the establishment of a nuclear energy administration." A 1984 project focused on uranium exploration. More recently, a Technical Cooperation project approved in 2005 was designed to assess the "technical and economic feasibility" of a nuclear power and desalination plant. Active IAEA Technical Cooperation projects with the UAE focus on human resources development for atomic energy, feasibility studies for waste management, environmental monitoring, and nuclear accident early warning preparedness and response.[9]

A draft national law authorizing the program has not yet been adopted by the Federal Supreme Council. The draft law reportedly would prohibit domestic enrichment or reprocessing. UAE government representatives report that the UAE has sought and received input on its draft nuclear law from the United States, United Kingdom, Japan, Korea, and France.[10] A nuclear energy policy advisory board reportedly has been formed, and UAE officials report that its members, though unnamed, include leading international nuclear energy industry officials.[11]

Some limited consulting and contracting between U.S. firms and the UAE related to the UAE's proposed nuclear program has already taken place. In August 2008, Virginia's Thorium Power Ltd. signed two consulting and advisory services contracts related to the establishment of the Abu Dhabi-based Emirates Nuclear Energy Corporation (ENEC)[12] and the planned UAE Federal Authority for Nuclear Regulation (FANR). In October 2008, ENEC announced that Colorado's CH2M Hill, Inc. was selected for a ten-year contract as the managing agent for the evaluation and design stage of the nuclear energy program. Pennsylvania-based Rizzo and Associates Inc., has been hired to survey potential nuclear plant sites in the UAE. The contracts were signed with the government of Abu Dhabi.

Proposed U.S.-UAE Cooperation

Emirates Nuclear Energy Corporation (ENEC) officials have expressed interest in establishing joint ventures with U.S. firms for the design, construction, and operation of nuclear power plants. ENEC also is seeking to sign contracts for the specialized training of operations, security, and regulatory personnel in order to expand the indigenous human capital base within the UAE for independent management of planned nuclear facilities. During 2008 and early 2009, the Bush

[9] See IAEA-Technical Cooperation, National and Regional Asia and the Pacific Projects query page at http://www-tc.iaea.org/tcweb/tcprogramme/recipients/eastasiapacific/query/default.asp.

[10] CRS analyst interview with UAE official, Washington, DC, March 6, 2009.

[11] UAE Minister of Foreign Affairs Shaykh Abdullah bin Zayed Al Nahyan, "Why Go Nuclear?" *Bulletin of the Atomic Scientists*, September/October 2008; and, CRS meeting with Abu Dhabi Executive Authority and Emirates Nuclear Energy Corporation representatives, Abu Dhabi, December 14, 2008.

[12] See ENEC homepage at https://pcs.enec.gov.ae/Content/Home.aspx.

Administration and the UAE government negotiated and signed a Memorandum of Understanding (MOU) (see below) and a proposed bilateral agreement on peaceful nuclear cooperation pursuant to Section 123 of the Atomic Energy Act (AEA) of 1954.

Memorandum of Understanding

On April 21, 2008, the United States and the UAE signed a MOU "Concerning Cooperation in Peaceful Uses of Nuclear Energy." The MOU states that the two countries "intend to cooperate, subject to their respective national laws," in a variety of nuclear activities. The MOU is a statement of intent regarding future cooperation, but is not legally binding. Although such memoranda are not prerequisites for concluding future nuclear cooperation agreements, the State Department has argued that they are useful tools for cooperating with countries which are interested in the responsible use of nuclear energy because they create opportunities to solicit specific commitments with regard to safeguards and technology choices. An April 21, 2008 State Department press release described the U.S.-UAE MOU as a "tangible expression of the United States' desire to cooperate with states in the Middle East, and elsewhere, that want to develop peaceful nuclear power in a manner consistent with the highest standards of safety, security and nonproliferation." A similar MOU was concluded with Saudi Arabia in May 2008.

Proposed Bilateral Agreement Pursuant to Section 123 of the Atomic Energy Act of 1954

On January 15, 2009, then-Secretary of State Condoleezza Rice and UAE Foreign Minister Abdullah bin Zayed Al Nahyan signed the text of a proposed bilateral agreement on peaceful nuclear cooperation.[13] Under the Atomic Energy Act of 1954 (AEA), all significant nuclear cooperation with other countries requires a peaceful nuclear cooperation agreement. Such agreements, which require congressional approval, are "framework" agreements which set the terms of reference and provide authorization for cooperation. The AEA includes requirements for an agreement's content, presidential determinations, and other supporting information to be submitted to Congress, conditions affecting the implementation of an agreement once it takes effect, as well as procedures for Congress to consider and approve the agreement (see "Nuclear Cooperation Agreements, Approval Process, and Proposed Changes" below). The agreement would enter into force on the date when the two governments "exchange diplomatic notes informing each other that they have completed all applicable requirements."

According to the proposed U.S.-UAE agreement, the two countries "intend to cooperate" in a variety of nuclear activities, including:

- Developing "requirements for grid-appropriate power reactors and fuel service arrangements;"
- Promoting the "establishment of a reliable source of nuclear fuel for future civil light water nuclear reactors;"

[13] U.S. Department of State, Office of the Spokesman. Media Note 2009/055, "U.S.-UAE Agreement for Peaceful Nuclear Cooperation (123 Agreement)," Washington, DC, January 15, 2009.

- "Civil nuclear energy training, human resource and infrastructure development;"
- Cooperating on nuclear security and nonproliferation, "including physical protection, export control and border security;"
- Developing the UAE's "civil nuclear energy use in a manner that supports global efforts to prevent nuclear proliferation, including, for example, the Global Nuclear Energy Partnership;"[14]
- Applying "radioisotopes and radiation in industry, agriculture, medicine and the environment;"
- Managing "radioactive waste and spent fuel;" and
- Identifying "uranium mining and milling resources."

According to the agreement, cooperation could include:

- "Exchange of scientific and technical information and documentation;"
- "Exchange and training of personnel;"
- "Organization of symposia and seminars;"
- "Provision of relevant technical assistance and services;"
- Transfers of "material, equipment and components."

The agreement contains a variety of provisions which are required by the AEA and are designed to ensure that the UAE's nuclear program remains exclusively for peaceful purposes. It also includes two nonproliferation provisions which are not typically found in other such U.S. nuclear cooperation agreements, such as a June 2008 U.S. agreement with Turkey.[15] Most significantly, the agreement provides the United States with the right to terminate nuclear cooperation and to require the return of any nuclear "material, equipment or components ... and any special fissionable material produced through their use" if, after the agreement's entry into force, the UAE "possesses sensitive nuclear facilities within its territory or otherwise engages in activities within its territory relating to enrichment of uranium or reprocessing of nuclear fuel."[16] The other provision requires both parties to give "due consideration ... to non-proliferation and physical protection aspects" when selecting a storage facility for special fissionable material.[17]

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[14] For more information on the Partnership, see CRS Report RL34234, *Managing the Nuclear Fuel Cycle: Policy Implications of Expanding Global Access to Nuclear Power*, by Mary Beth Nikitin, Anthony Andrews, and Mark Holt.

[15] The agreement with Turkey is the most recent nuclear cooperation agreement between the United States and a non-nuclear-weapon state to have entered into force.

[16] Uranium enrichment and reprocessing spent nuclear fuel are the dual-use nuclear activities of greatest proliferation concern. Uranium enrichment can produce low-enriched uranium for nuclear reactor fuel or highly-enriched uranium, which can be used as fissile material in nuclear weapons. Reprocessing spent nuclear fuel separates plutonium from that fuel. Plutonium can also be used as fissile material in nuclear weapons.

[17] According to the agreement text, "special fissionable material means (1) plutonium, uranium 233, or uranium enriched in the isotope 235, or (2) any other material so designated by agreement of the Parties." A similar provision is contained in a 1981 U.S. nuclear cooperation agreement with Egypt.

The agreement also allows the United States to require that any special fissionable material that has been transferred to the UAE or "used in or produced through the use of any material or equipment" transferred pursuant to the agreement be transferred to either the United States or an unspecified "third country" if Washington "considers that exceptional circumstances of concern from a nonproliferation standpoint so require." A 1981 U.S. nuclear cooperation agreement with Egypt contains a similar restriction.

It also is worth noting that an Agreed Minute to the U.S.-UAE agreement includes a provision which establishes its conditions as minimum standards for future such U.S. agreements in the Middle East. Stating that "the fields of cooperation, terms and conditions" accorded by the U.S.-UAE agreement "shall be no less favorable in scope and effect than those which may be accorded, from time to time, to any other non-nuclear-weapon State in the Middle East in a peaceful nuclear cooperation agreement," the Minute explains that, in the event that Washington concludes a more-favorable agreement with another regional government, the United States will, at the UAE's request, consult with the UAE "regarding the possibility of amending" the agreement in order to make its terms equally favorable to the new agreement.

A similar provision in the U.S.-Egypt agreement meant that the United States had to ensure that the agreement with the UAE would be at least as stringent. Since the latter agreement is more stringent, it has established a higher standard for future such U.S. agreements in the region.[18] (See the **Appendix**).

Additionally, the U.S.-UAE agreement provides a potential way for the UAE to transfer spent nuclear fuel to others countries. The Agreed Minute states that the UAE may transfer spent nuclear fuel to France or the United Kingdom for storage or reprocessing. In the past, such advance U.S. consent has been given only to Japan, Switzerland, and Norway.[19] The transferred material is to be held within EURATOM, and any separated plutonium cannot be returned to the UAE without additional U.S. consent.[20] [21] According to the agreement, approval for such UAE spent fuel transfers would be subject to several conditions, including the UAE's adherence to its declared policy of refraining from enrichment and reprocessing. The UAE may also not engage in fabricating nuclear fuel containing plutonium. Additionally, the United States can terminate an agreement regarding spent fuel transfers if Washington decides that the UAE has not met one of the relevant conditions or if the United States "considers that exceptional circumstances of concern from a non-proliferation or security standpoint so require." The agreement explains that "[s]uch circumstances include, but are not limited to, a determination ... that the approval cannot be continued without a significant increase of the risk of proliferation or without jeopardizing its national security."

[18] CRS Analyst interview with State Department official March 9, 2009.

[19] U.S. agreements with Finland and Sweden also granted such consent rights, but those agreements have been replaced by the U.S.-EURATOM agreement.

[20] Japan and Switzerland have received advance consent to take back recovered plutonium for use in their civil nuclear programs.

[21] CRS Analyst interviews with State Department official March 12, 2009 and former State Department official Fred McGoldrick March 10, 2009.

Nuclear Cooperation Agreements, Approval Process, and Proposed Changes

Under the Atomic Energy Act (AEA), all significant nuclear cooperation[22] with other countries requires a peaceful nuclear cooperation agreement.[23] Section 123 of the AEA specifies that proposed nuclear cooperation agreements are to include the terms, conditions, duration, nature, and scope of cooperation. It also requires that any such agreement meet a series of nonproliferation criteria and that the President submit any such agreement to the House Committee on Foreign Affairs and the Senate Committee on Foreign Relations. The Department of State is required to provide the President an unclassified Nuclear Non-Proliferation Assessment Statement (NPAS), which the President is to submit to the committees of referral along with the agreement. The State Department also is required to provide a classified annex to the NPAS, prepared in consultation with the Director of National Intelligence. The NPAS is meant to explain how a proposed agreement would meet the aforementioned nonproliferation criteria. The President also must make a written determination "that the performance of the proposed agreement will promote and will not constitute an unreasonable risk to, the common defense and security." President Bush issued such a determination November 14, 2008.[24]

Under the AEA, Congress has the opportunity to review a 123 agreement for two time periods totaling 90 days of continuous session.[25] The President must submit the text of the proposed nuclear cooperation agreement, along with required supporting documents (including the unclassified NPAS) to the House Foreign Affairs Committee and the Senate Foreign Relations Committee. The President is to consult with the committees "for a period of not less than 30 days of continuous session." After this period of consultation, the President is to submit the agreement to Congress, along with the classified annex to the NPAS and a statement of his approval of the agreement and determination that it will not damage the national security interests of the United States. This action begins the second period, which spans 60 days of continuous session. In practice, the President has submitted the agreement to Congress, along with the unclassified NPAS, its classified annex, and his approval and determination, at the beginning of the full 90-day period. The 60-day period has been considered as following immediately upon the expiration of the 30-day period. If the President has not exempted the agreement from any requirements of Section 123a., it becomes effective at the end of the 60-day period unless, during that time,

[22] Significant nuclear cooperation includes the transfer of U.S.-origin special nuclear material subject to licensing for commercial, medical, and industrial purposes. The term "special nuclear material," as well as other terms used in the statute, is defined in 42 U.S.C. §2014. "Special nuclear material" means (1) plutonium, uranium enriched in the isotopes 233 or 235, and any other material that is determined to be special nuclear material, but does not include source material, or (2) any material artificially enriched by any of the foregoing, but does not include source material.

[23] For a primer on such agreements, which are frequently referred to as "123 agreements," see CRS Report RS22937, *Nuclear Cooperation with Other Countries: A Primer*, by Paul K. Kerr and Mary Beth Nikitin.

[24] Presidential Determination No. 2009–7, November 14, 2008.

[25] When calculating periods of "continuous session" under the AEA, every calendar day is counted, including Saturdays and Sundays. Only days on which either chamber has adjourned for more than three days pursuant to the adoption of a concurrent resolution authorizing the adjournment do not count toward the total. If Congress adjourns its final session *sine die*, continuity of session is broken, and the count must start anew when it reconvenes.

Congress adopts a joint resolution disapproving the agreement and the resolution becomes law.[26] The proposed agreement with the UAE is not an exempt agreement.

In the 110th Congress, some Members of Congress proposed several amendments to the AEA that would have changed the AEA's procedures for the negotiation and approval of peaceful nuclear cooperation agreements.[27] For example, H.R. 7316, which Representative Ileana Ros-Lehtinen introduced in December 2008, would have required Congress to enact a joint resolution of approval before any peaceful nuclear cooperation agreement could become effective. As noted above, such agreements currently become effective unless Congress enacts a joint resolution of disapproval. The bill also proposed adding a section to the AEA which would have required the President to keep the House Foreign Affairs Committee and the Senate Foreign Relations Committee "fully and currently informed of any initiative or negotiations relating to a new or amended agreement for peaceful nuclear cooperation ...prior to the President's announcement of such initiative or negotiations." The proposed section also would have mandated periodic Presidential consultation with the committees about the progress of negotiations concerning such agreements. In the 111th Congress, H.R. 547, which Representative Ros-Lehtinen introduced January 15, 2009, contains the same language.

Issues for Congress

Although the final text of the proposed U.S.-UAE nuclear agreement was agreed in early November 2008, the Bush Administration, reportedly at the UAE's request, did not submit the agreement to the 110th Congress.[28] As of March 9, 2009, the Obama Administration had not submitted the agreement to Congress to begin the consultation periods required under the AEA. State Department officials said the same day said that the Administration's policy on the agreement is under review.[29] To date, some Members of Congress have welcomed the UAE government's stated commitments to foreswear proliferation-sensitive nuclear capabilities, such as uranium enrichment or spent fuel reprocessing. Other Members have signaled their intention to evaluate the proposed bilateral agreement in light of parallel and specific concerns about the UAE's cooperation with international efforts to prevent Iran from developing nuclear weapons and the potential proliferation or safety risks inherent to exporting U.S. nuclear technology.[30] Broader diplomatic implications of the proposed agreement also are being weighed by concerned parties on all sides.

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[26] The AEA allows the President to exempt a proposed nuclear cooperation agreement from the nonproliferation criteria specified in Section 123. Such agreements have different procedures for Congressional review. Since the proposed agreement with the UAE is apparently a non-exempt agreement, those procedures are not discussed here.

[27] For additional details on these proposals, see CRS Report RS22937, *Nuclear Cooperation with Other Countries: A Primer*, by Paul K. Kerr and Mary Beth Nikitin.

[28] "UAE, USA Complete Negotiations on Peaceful Nuclear Energy Agreement," Emirates News Agency, December 15, 2008; and, Mark Hibbs, "US-UAE Cooperation Pact Initialed; Approval Left to Obama, New Congress," Nucleonics Week, November 20, 2008.

[29] CRS analysts interview with State Department official, March 9, 2009.

[30] See, for example, a November 24, 2008 statement from Representative Brad Sherman and a January 15, 2009 letter from Representative Edward Markey.

Congressional Concerns

Export Control Concerns

Since 2001, the UAE has been under increased U.S. scrutiny as an alleged transshipment point for military and dual-use exports to Iran, as an alleged hub of operations for weapons proliferators,[31] and as an alleged transit zone and financial conduit for terrorists and money launderers. At present, particular attention remains focused on U.S. concerns about the UAE government's willingness and ability to halt transfers of militarily-sensitive technology to Iran. Since late 2008, some Members of Congress have claimed that the UAE has not acted sufficiently to halt transfers of militarily-sensitive technology to Iran and should not be able to conclude a nuclear cooperation agreement with the United States until the UAE government has taken additional measures against Iranian procurement activities of concern.

The United States government has stated publicly that some UAE-based entities are involved in Iranian weapons-related procurement activities. For example, an October 2008 Department of Justice fact sheet states that eight companies, five of which are based in the UAE, were charged the previous month with crimes related to their participation in exporting dual-use items to Iran. Additionally, two men were indicted in July 2008 for "participation in a conspiracy to export U.S.-made military aircraft parts to Iran" via a company based in the UAE, according to the fact sheet.[32]

Evidence also suggests that UAE-based entities are involved in procurement activities connected to Iran's nuclear and ballistic missile programs. For example, the Department of the Treasury designated two such entities under Executive Order 13382, which freezes assets under U.S. jurisdiction belonging to designated foreign entities engaged in activities related to the proliferation of Weapons of Mass Destruction (WMD). The Treasury Department designated Oriental Oil Kish in October 2007 for unspecified "proliferation activities." Oriental Oil Kish is an entity affiliated with Iran's Islamic Revolutionary Guard Corps (IRGC), a department press release said, adding that the IRGC develops and tests ballistic missiles. In September 2008, the Treasury Department similarly designated Oasis Freight Agencies as a company affiliated with the Islamic Republic of Iran Shipping Lines (IRISL). Adam Szubin, director of the department's Office of Foreign Assets Control, indicated during a September 10, 2008 press conference that IRISL has procured items for Iran's ballistic missile programs. Additionally, the Treasury Department designated two other entities located in the UAE, Melli Investment Holding International and BMIIC International General Trading Ltd., in March 2009 because of their ties to Iran's Bank Melli, which, according to a March 3 Treasury Department statement, has been involved in procurement activities and other forms of support for Iran's nuclear and missile programs.

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[31] In connection with revelations of illicit sales of nuclear technology to Iran, Libya, and North Korea by Pakistan's nuclear scientist A.Q. Khan, Dubai was named as a key transfer point for Khan's shipments of nuclear components. For more detail, see CRS Report RL32745, *Pakistan's Nuclear Proliferation Activities and the Recommendations of the 9/11 Commission: U.S. Policy Constraints and Options*.

[32] "Fact Sheet: Major U.S. Export Enforcement Prosecutions During Past Two Years," U.S. Department of Justice, October 28, 2008.

Concerns about suspicious transfers to Iran prompted U.S. action in 2007 to encourage the UAE to improve its national export control system. In February 2007, the U.S. Department of Commerce released an advanced notice of proposed rule-making that would have created a new export control designation known as "Country Group C" that would have established license requirements on exports and re-exports to countries that represent a diversion or transshipment risk for goods subject to the Export Administration Regulations.[33] Although no countries were mentioned in the notice, the proposal was widely considered to be directed at the UAE. [34]

In August 2007, the UAE adopted a stronger national export control law, but, as of February 2009, the government had yet to issue implementing regulations for the law or to fully staff a national export control body to enforce it. In the interim, export control enforcement functions remain the responsibility of authorities in the UAE's individual emirates, and are carried out in coordination with the national government. An existing office within the UAE government may assume the responsibilities previously set out for the planned "National Commission for Commodities Subject to Import, Export, and Re-export Controls."[35]

In the interim, U.S. cooperation with national and emirate level officials appears to be strong. A bilateral nonproliferation working group meets annually to review and discuss nonproliferation issues of shared concern. In a September 2008 letter to then-U.S. Secretary of Commerce Carlos Gutierrez, UAE Ambassador to the United States Yousef Al Otaiba detailed six joint and unilateral interdictions on Iran-bound ships completed since June 2008.[36] The letter further stated that "the UAE fully supports and has vigorously enforced United Nations resolutions barring the shipment of sensitive materials and technologies to Iran." The UAE also has "closed dozens of international and local companies involved in the transshipment of dual-use and controlled materials," according to the letter, which also highlighted the government's participation in several U.S. security initiatives, including the Container Security Initiative, the Proliferation Security Initiative, and the Department of Energy Megaports Initiative. UAE officials report they remain committed to fully implementing the 2007 law at the national level, including clarifying roles and responsibilities for export control enforcement.[37]

As of March 3, 2009, the U.S. government had designated approximately 107 non-UAE companies, based in Iran and elsewhere, under Executive Order 13382, though not necessarily for exports to Iran. Moreover, the UAE is not Tehran's only supplier of suspicious goods; Iran has used a network based in Malaysia for procuring dual-use items.

The United Kingdom's Export Control Organization has also named two entities located in the UAE, Mileace and Tammam Trading, as possibly being involved in procurement activities for Iran's WMD programs. [38]

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[33] "Country Group C: Destinations of Diversion Control," Advanced Notice of Proposed Rulemaking, 72 Federal Register 8315, February 26, 2007.

[34] *Inside U.S. Trade*, "UAE Drafts New Export Control Law With U.S. Help," Vol. 25, No. 11, March 16, 2007.

[35] CRS analyst conversation with UAE official, Abu Dhabi, December 15, 2008, and Washington, DC, March 6, 2009.

[36] Letter from UAE Ambassador to the United States Yousef Al Otaiba to U.S. Secretary of Commerce Carlos Guitierrez, September 17, 2008.

[37] CRS analyst conversation with UAE official, Abu Dhabi, December 15, 2008, and Washington, DC, March 6, 2009.

[38] "Iran List - WMD End-Use Control: Licence Applications for Iran," February 26, 2009. Available at (continued...)

Nonproliferation Concerns

The most proliferation-sensitive part of a nuclear power program is the capability to produce fuel for nuclear reactors, either by enriching uranium or reprocessing spent nuclear fuel to obtain plutonium. Low-enriched uranium is used as fuel for nuclear reactors. Both highly-enriched uranium and plutonium can be used as fuel in some types of nuclear reactors but are also used as fissile material in nuclear weapons. The dual-use nature of nuclear fuel facilities frequently generates concern that ostensibly peaceful facilities may aid nuclear weapons programs.

The April MOU states that the UAE has agreed to the policy commitments described earlier in its April 2008 policy statement, which are designed to boost confidence that the state's nuclear program is exclusively for peaceful purposes. For example, the statement indicates that the UAE will forgo "domestic enrichment and reprocessing capabilities in favor of long-term commitments of the secure external supply of nuclear fuel." Moreover, as noted above, the nuclear cooperation agreement's text states that the United States can end nuclear cooperation with the UAE if it acquires enrichment or reprocessing facilities. Without such capabilities, a nuclear program poses little proliferation risk. IAEA Director-General Mohamed ElBaradei explained in an August 2007 interview:

> One nuclear reactor by itself means nothing, you are still far from having an atom bomb. I am more worried when a country has a plant for industrial-scale uranium enrichment…In this case it can make a nuclear bomb within a few months. [39]

The UAE's draft nuclear law currently under consideration also reportedly contains a prohibition on domestic enrichment and reprocessing.[40]

As a party to the nuclear Nonproliferation Treaty (NPT), any future UAE nuclear facilities would be subject to IAEA safeguards.[41] Additionally, the UAE agreed to conclude an Additional Protocol to its safeguards agreement. Such protocols give IAEA officials greater access to an NPT state's nuclear-related facilities and information. The IAEA Board of Governors approved the Additional Protocol March 3. The UAE currently has a Small Quantities Protocol to its safeguards agreement, but, according to the nuclear cooperation agreement, will terminate that Protocol before the United States issues export licenses for the export of "nuclear material, equipment, components, or technology" pursuant to the cooperation agreement.[42]

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http://www.berr.gov.uk/whatwedo/europeandtrade/strategic-export-control/licensing-policy/end-use-control/page29307.html.

[39] "We're approaching the brink: PROFIL Interview with Mohamed El Baradei." *Profil*, August 8, 2007. Available at http://www.iaea.org/NewsCenter/Transcripts/2007/PROFIL3507.html.

[40] UAE representative communication to CRS, March 6, 2009.

[41] For more information about IAEA safeguards, see CRS Report RL33865, *Arms Control and Nonproliferation: A Catalog of Treaties and Agreements*, by Amy F. Woolf, Mary Beth Nikitin, and Paul K. Kerr. The UAE has had an IAEA safeguards agreement in force since 2003. The text is available at http://www.iaea.org/Publications/Documents/Infcircs/2003/infcirc622.pdf.

[42] Some NPT state-parties with small quantities of fissionable materials have concluded a Small Quantities Protocol to their IAEA safeguards agreements. Certain IAEA verification requirements are suspended for such states.

It is also worth noting that the UAE's 2008 policy statement on its nuclear program states that the government plans to rely on light-water reactors, which are considered among the most proliferation-resistant, partly because of the difficultly in producing and obtaining weapons-grade plutonium without detection. Moreover, a May 2008 International Institute for Strategic Studies report points out that "no successful nuclear-weapons program has ever relied on commercial reactors."[43] Although a civilian nuclear power program could provide cover for a country's procurement of dual-use items that could aid a nuclear weapons program, such a program would need to include some covert facilities.

Possible Diplomatic Implications

Shaping Nonproliferation Standards and Best Practices

The Bush Administration argued that nuclear cooperation with the UAE could set a useful precedent for mitigating the dangers of nuclear proliferation as an increasing number of countries consider developing nuclear power. The State Department stated in April 2008 that the UAE's choice to forgo enrichment and reprocessing "serves as a model for the economical and responsible pursuit of nuclear power." State Department spokesperson Sean McCormack made a similar argument during a December 12 press briefing, adding that the UAE's nuclear program "stands in contradistinction to the actions of Iran," which is pursuing an indigenous uranium enrichment program.[44] As noted above, the proposed U.S.-UAE agreement includes a provision which apparently intends to establish the agreement's conditions as minimum standards for future such agreements in the Middle East.

Commercial Opportunities

Licensed nuclear technology contracts with the UAE could provide commercial benefits to the U.S. nuclear industry or its international competitors. While Emirati officials have stated their strong desire for nuclear cooperation with the United States and have incorporated former U.S. government officials and U.S. contractors into their early plans and activities, the UAE also is seeking similar cooperation from other international sources. The expected value of eventual construction and management contracts is in the tens of billions of dollars. The UAE and France signed a nuclear cooperation agreement in January 2008, and the UAE has signed a memorandum of understanding with Japan concerning nuclear technology. The UAE embassy reports that their government is negotiating agreements with the United Kingdom and South Korea. On November 24, 2008, Anwar Mohammed Gargash, Minister of State for Foreign Affairs, stated that the United Kingdom is "a partner of great interest to the UAE in the pursuit of a civilian nuclear capability and bilateral relations between the UAE and the UK are set to be consolidated on this basis."[45]

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[43] *International Institute for Strategic Studies*, Nuclear Programmes in the Middle East: In the Shadow of Iran, May 2008.

[44] For additional information on Iran's enrichment program, see CRS Report RL34544, *Iran's Nuclear Program: Status*, by Paul K. Kerr.

[45] "UAE civilian nuclear program to secure 15 out of the 40 MWs by 2020: Gargash," *Emirates News Agency*, (continued...)

Bilateral Relations and UAE Cooperation in Nonproliferation Activities

As noted above, the United States and the UAE have enjoyed close and cooperative relations in recent years, in spite of periodic differences over some issues. Some observers have speculated that a failure to conclude the proposed nuclear cooperation agreement would be viewed by officials and influential figures in the UAE as an indication of a lack of faith and commitment by the United States government in the UAE, which could have negative implications for other aspects of the bilateral relationship. These fears appear to be based largely on the perceived repercussions of Dubai Ports World's failed 2006 bid to acquire and operate U.S. port terminals. However, others believe that while the Dubai Ports World incident undermined feelings of mutual trust and set back some planned commercial ties, the failed initiative did not otherwise damage U.S.-Emirati political or military relations in any tangible, lasting way.

By all accounts, Emirati authorities appear committed to moving forward with their nuclear development plans and, while they appear to strongly desire U.S. technical assistance, it seems unlikely that their plans would be curtailed or significantly undermined if the United States declined to authorize the proposed agreement. As noted above, other international parties appear willing to provide technical assistance on a commercial basis. Some observers have argued that without U.S. involvement, the UAE program could adopt technology or systems more vulnerable to proliferation or security concerns. UAE representatives state that their commitment to forego domestic enrichment or reprocessing is fundamental and would apply under cooperative arrangements with non-U.S. suppliers.

Legislative Developments in the 110th and 111th Congress

In the 110th Congress, Representative Ros-Lehtinen introduced H.R. 7316, the "Limitation on Nuclear Cooperation with the United Arab Emirates Act of 2008." The bill would have prohibited the proposed U.S.-UAE agreement from coming into effect without presidential certification that the UAE had taken specific steps to improve its export controls and to limit the transfer of certain items to Iran. As noted above, H.R. 7316 also sought to change the procedures for the negotiation and approval of peaceful nuclear cooperation agreements by amending the Atomic Energy Act. (See "Nuclear Cooperation Agreements, Approval Process, and Proposed Changes" above.)

In the 111th Congress, Representative Ros-Lehtinen has introduced two pieces of legislation to establish similar conditions on U.S.-UAE cooperation and to change negotiation and approval procedures for nuclear cooperation agreements.

- H.R. 364, the "Limitation on Nuclear Cooperation with the United Arab Emirates Act of 2009" was introduced and referred to the House Foreign Affairs Committee on January 9, 2009. The bill states that a U.S. civil nuclear cooperation agreement with the UAE may not enter into force "unless not less than 30 legislative days prior to such entry into force the President certifies" to the House Foreign Affairs Committee and the Senate Foreign Relations

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November 24, 2008.

Committee that the UAE has improved its export control system and halted UAE-based entities' transfers of technology relating to Weapons of Mass Destruction programs, particularly to Iran. The bill also requires the UAE to stop the transfer of certain conventional weapons and related components to Iran. H.R. 364 also states that, if the United States and the UAE do conclude a nuclear cooperation agreement, the United States may not grant an export license for "nuclear material, equipment, or technology" to the UAE unless the President certifies within 30 legislative days that the UAE has met the above requirements.

- H.R. 547, was introduced and referred to the House Foreign Affairs Committee January 15, 2009. It contains the language from H.R. 7316 relating to procedural changes for nuclear cooperation agreements pursuant to the Atomic Energy Act.

Appendix. Provisions in U.S Nuclear Cooperation Agreements with the UAE and Egypt Relevant to Establishing Standards for other Such Agreements

UAE

The Government of the United States of America confirms that the fields of cooperation, terms and conditions accorded by the United States of America to the United Arab Emirates for cooperation in the peaceful uses of nuclear energy shall be no less favorable in scope and effect than those which may be accorded, from time to time, to any other non-nuclear-weapon State in the Middle East in a peaceful nuclear cooperation agreement. If this is, at any time, not the case, at the request of the Government of the United Arab Emirates the Government of the United States of America will provide full details of the improved terms agreed with another non-nuclear-weapon State in the Middle East, to the extent consistent with its national legislation and regulations and any relevant agreements with such other non-nuclear weapon State, and if requested by the Government of the United Arab Emirates, will consult with the Government of the United Arab Emirates regarding the possibility of amending this Agreement so that the position described above is restored.

EGYPT

The Government of the United States confirms that fields of cooperation, terms and conditions accorded by the United States to the Arab Republic of Egypt for cooperation in the peaceful uses of nuclear energy shall be no less favorable in scope and effect than those which may be accorded by the United States to any other non-nuclear weapon state in the Middle East in a peaceful nuclear cooperation agreement. In this connection it is understood that the safeguards required by this agreement shall be no more restrictive than those which may be required in any peaceful nuclear cooperation agreement between the United States and any other state in the region. By entering into this agreement the United States confirms its recognition of the importance of the Arab Republic of Egypt's adherence to the NPT, and its longstanding support of international non-proliferation measures, including establishment of a nuclear weapon free zone in the Middle East. If any situation arises which could increase the risk of proliferation of nuclear weapons, the United States and the Arab Republic of Egypt, at the request of either, shall enter into consultations with respect thereto with a view to maintaining the objectives of the NPT.

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