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DATE	22 OCTOBER 2012
REPORT NO.	9342
URGENCY	
SUBJECT	IRAN/NUCLEAR/PROGRAM STATUS

MAIN POINTS

1. IRAN'S ENRICHMENT ABILITIES CONTINUE TO IMPROVE. THE QUANTITY OF MATERIAL ENRICHED TO 20% IS NOT INCREASING AT THIS STAGE AS SOME IS BEING CONVERTED TO NUCLEAR FUEL FOR TRR. IN ADDITION, IRAN IS MAKING GREAT EFFORTS TO ACTIVATE THE IR40 REACTOR (WHICH IS EXPECTED TO PRODUCE MILITARY-GRADE PLUTONIUM) AS QUICKLY AS POSSIBLE. WE ASSESS THAT THIS WILL NOT HAPPEN BEFORE MID-2014.
2. ENRICHMENT: ACTIVITY AT THE KASHAN AND QOM SITES HAS EXPANDED TO A LIMITED EXTENT ONLY, APPARENTLY BECAUSE OF A LACK OF AVAILABLE CENTRIFUGES, BUT THERE HAS BEEN A SIGNIFICANT INCREASE IN THE RATE AND EFFICIENCY OF ENRICHMENT-APPROXIMATELY 230 KG URANIUM IS ENRICHED TO 5% PER MONTH, AND APPROXIMATELY 12 KG IS ENRICHED TO 20% PER MONTH.
3. IRAN HAS THUS FAR ACCUMULATED ABOUT 5,500 KG OF URANIUM ENRICHED TO 5% (AFTER ABOUT 1,500 KG WERE ALLOCATED FOR ENRICHMENT TO 20%) AND ABOUT 100 KG ENRICHED TO 20% (AFTER 75-100 KG WERE CONVERTED INTO NUCLEAR FUEL FOR TRR).

4. BESIDES ENRICHMENT, THE ATOMIC ENERGY ORGANIZATION OF IRAN (AEOI) IS FOCUSING ITS EFFORTS ON COMPLETING THE CONSTRUCTION OF THE IR40 HEAVY WATER REACTOR IN ARAK, AND PUTTING IT INTO SERVICE DURING 2014. INDUSTRIAL PRODUCTION OF DUMMY FUEL FOR THE REACTOR AND PREPARATIONS TO PRODUCE NUCLEAR FUEL HAVE BEGUN.
5. WE UNDERSTAND THAT IRAN CONTINUES TO IMPROVE ITS ENRICHMENT ABILITIES, AND IS EVEN LIABLE TO ADVANCE THEM SIGNIFICANTLY WHEN THE ADVANCED IR2M OR IR4 CENTRIFUGES, CURRENTLY BEING RUN IN IN THE PILOT FACILITY IN NATANZ, ARE PUT INTO SERVICE.
6. EVEN THOUGH IRAN HAS ACCUMULATED ENOUGH 5% ENRICHED URANIUM FOR SEVERAL BOMBS, AND HAS ENRICHED SOME OF IT TO 20%, IT DOES NOT APPEAR TO BE READY TO ENRICH IT TO HIGHER LEVELS. IT IS ALLOCATING SOME OF IT TO PRODUCE NUCLEAR FUEL FOR THE TRR, AND THE AMOUNT OF 20% ENRICHED URANIUM IS THEREFORE NOT INCREASING.
7. WE UNDERSTAND THAT IRAN IS MAKING EFFORTS TO PUT THE IR40 INTO OPERATION AS QUICKLY AS POSSIBLE. WE ASSESS THAT THIS WILL NOT HAPPEN BEFORE MID-2014. THIS REACTOR IS EXPECTED TO PRODUCE ENOUGH MILITARY-GRADE PLUTONIUM FOR ONE BOMB PER YEAR, BUT IN THE ABSENCE OF A NUCLEAR FUEL REPROCESSING PLANT (UNKNOWN IN IRAN), THIS PLUTONIUM WILL NOT BE ABLE TO BE USED FOR WEAPONS.
8. IN THE AREA OF NUCLEAR WEAPONS, THERE IS CONTINUED R&D ACTIVITY AT SPND, UNDER THE IRANIAN DEFENSE MINISTRY, WHICH WE UNDERSTAND IS INTENDED FOR ACCUMULATING KNOWHOW AND CREATING AN ORGANIZATIONAL FRAMEWORK IT WILL BE ABLE TO MAKE USE OF TO PRODUCE NUCLEAR FUEL, WHEN THE ORDER IS GIVEN.
9. BOTTOM LINE: THOUGH IRAN AT THIS STAGE IS NOT PERFORMING THE ACTIVITY NECESSARY TO PRODUCE WEAPONS, IT IS WORKING TO CLOSE GAPS IN AREAS THAT APPEAR LEGITIMATE SUCH AS

ENRICHMENT, REACTORS, WHICH WILL REDUCE THE TIME REQUIRED TO PRODUCE WEAPONS FROM THE TIME THE INSTRUCTION IS ACTUALLY GIVEN.

DETAILS

URANIUM ENRICHMENT TRACK

10. EXPANSION OF ACTIVITY AT THE NANTEZ AND QOM SITES HAS BEEN LIMITED (APPARENTLY DUE TO A LACK OF AVAILABLE CENTRIFUGES), BUT ENRICHMENT ACTIVITY CONTINUES TO EXPAND:
 - A. IN IRAN THERE ARE CURRENTLY 10,500 CENTRIFUGES OPERATING, AS FOLLOWS:
 - (1) ABOUT 9,000 CENTRIFUGES OPERATE AT THREE ENRICHMENT UNITS IN A BUNKER IN NATANZ AND ENRICH TO 5%.
 - (2) ABOUT 700 CENTRIFUGES OPERATE IN THE ABOVE-GROUND PILOT FACILITY IN NATANZ, OF WHICH ABOUT 350 ENRICH TO 20% AND ABOUT 350 ADVANCED CENTRIFUGES ARE CURRENTLY RUNNING AND BEING FED WITH DEPLETED URANIUM.
 - (3) ABOUT 700 CENTRIFUGES OPERATE IN QOM AND ENRICH TO 20%.
 - B. IN ADDITION, THERE ARE ANOTHER 1,000 CENTRIFUGES INSTALLED THAT HAVE NOT BEEN PUT INTO OPERATION IN THE FOURTH UNIT IN NATANZ AND OTHER CASCADES IN QOM.
 - C. IN NATANZ: IN RECENT MONTHS INSTALLATION HAS BEGUN OF CENTRIFUGES AT THE SITE. IN ADDITION, THERE HAS BEEN AN INCREASE IN ENRICHMENT TO A LOW LEVEL, FROM ABOUT 170 KG A MONTH IN FEBRUARY TO ABOUT 230 KG A MONTH IN MAY. THIS IS APPARENTLY A RESULT OF STABILIZATION OF ENRICHMENT IN THE THIRD UNIT.
 - D. IN QOM: NO NEW CENTRIFUGES HAVE BEEN PUT INTO OPERATION AT THE SITE SINCE JANUARY 2012 (ABOUT 700

ENRICHING CENTRIFUGES). APPARENTLY INSTALLATION OF CENTRIFUGES AT THE SITE HAS BEEN COMPLETED (ABOUT 2,800 CENTRIFUGES.)

11. IRAN NOW HAS ABOUT 5,500 KG OF MATERIAL ENRICHED TO 5% (AFTER ABOUT 1,500 KG WAS ALLOCATED FOR 20% ENRICHMENT) AND ABOUT 100 KG OF MATERIAL ENRICHED TO 20% (AFTER ABOUT 75-100 KG OF URANIUM ENRICHED TO 20% WAS CONVERTED INTO NUCLEAR FUEL TO OPERATE THE RESEARCH REACTOR IN TEHRAN), PRODUCED AT A RATE OF ABOUT 12 KG A MONTH (SIMILAR TO THE RATE OF USE CURRENTLY MADE OF THE MATERIAL TO PRODUCE NUCLEAR FUEL).
12. R&D OF ADVANCED CENTRIFUGES: THERE HAS BEEN AN ADVANCE IN THE STABILIZATION OF MODEL IR-2M, WHICH IS EXPECTED TO IMPROVE THE ENRICHMENT ABILITY OF THE IRANIAN CENTRIFUGES THREEFOLD. THIS IS AFTER IT HAS BEEN OPERATED IN THE R&D CASCADE IN THE PILOT FACILITY IN NATANZ, WHERE IT APPEARS THAT IR-2M IS MORE READY THAN THE IR-4 TO START INDUSTRIAL PRODUCTION.

PLUTONIUM TRACK

13. ALONG WITH THE ENRICHMENT, AEOI IS FOCUSING ITS EFFORTS ON COMPLETING THE BUILDING OF THE HEAVY WATER REACTOR IN ARAK (IR40) AND ACTIVATING IT DURING 2014. IN THIS CONTEXT:
 - A. IN APRIL 2012, INDUSTRIAL PRODUCTION WAS BEGUN OF DUMMY FUEL, INTENDED FOR TESTING THE REACTOR WITHOUT A NUCLEAR REACTION. ITS COMPLETION WILL ALLOW IRAN TO START TESTING THE REACTOR IN 2013.
 - B. IRAN IS PREPARING TO INCREASE THE RATE OF PRODUCTION OF POWDER REQUIRED TO PRODUCE NUCLEAR FUEL (UO₂) AND IN FEBRUARY 2012 PRODUCTION OF PELLETS BEGAN (THE FIRST STAGE OF PRODUCING NUCLEAR FUEL). HOWEVER, IT SEEMS THAT SPECIAL EQUIPMENT IS MISSING WHICH IS

NECESSARY FOR BEGINNING OPERATION OF THE PRODUCTION
LINE.

14. WHEN THE REACTOR BEGINS OPERATING, PRODUCTION OF PLUTONIUM WILL BEGIN AT A QUANTITY SUFFICIENT TO PRODUCE ONE BOMB A YEAR, BUT THERE WILL BE NO USE FOR THE WEAPONS AS LONG AS THERE IS NO NUCLEAR FUEL REPROCESSING PLANT.

WEAPONS

15. UNTIL 2003 THERE WAS A SET NUCLEAR PROGRAM IN IRAN FOR R&D OF NUCLEAR WEAPONS UNDER THE IRANIAN DEFENSE MINISTRY WHICH WAS CALLED THE AMAD PLAN. THE PLAN WAS REDUCED FOLLOWING EXPOSURE OF THE NUCLEAR PROGRAM AND CONCERN ABOUT MILITARY ATTACK.
16. IN 2011, MANY SCIENTISTS FROM THE AMAD PROGRAM FORMED AN ORGANIZATION CALLED SPND, ALSO UNDER THE AUSPICES OF THE DEFENSE MINISTRY. AT THE HEAD OF THE ORGANIZATION IS MOHSEN FAKHRIZADEH, FORMER HEAD OF AMAD.
17. THE ORGANIZATION WAS ESTABLISHED FOR THE PURPOSES OF PRESERVING THE TECHNOLOGICAL ABILITY AND THE JOINT ORGANIZATIONAL FRAMEWORK OF IRANIAN SCIENTISTS IN THE AREA OF R&D OF NUCLEAR WEAPONS, AND FOR THE PURPOSES OF RETAINING THE SKILLS OF THE SCIENTISTS. THIS IS ALLOW RENEWAL OF THE ACTIVITY NECESSARY TO PRODUCE WEAPONS IMMEDIATELY WHEN THE IRANIAN LEADERSHIP DECIDES TO DO SO.
18. KIND REGARDS.



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