111th Congress, 1st Session – – – – – – – – – – – – – House Document 111–37

THE LIST OF SITES, LOCATIONS, FACILITIES, AND ACTIVITIES DECLARED TO THE INTERNATIONAL ATOMIC ENERGY AGENCY

MESSAGE

FROM

THE PRESIDENT OF THE UNITED STATES

TRANSMITTING

A LIST OF THE SITES, LOCATIONS, FACILITIES, AND ACTIVITIES IN THE UNITED STATES DECLARED TO THE INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA), UNDER THE PROTOCOL ADDITIONAL TO THE AGREEMENT BETWEEN THE UNITED STATES OF AMERICA AND THE INTERNATIONAL ATOMIC ENERGY AGENCY FOR THE APPLICATION OF SAFEGUARDS IN THE UNITED STATES OF AMERICA, WITH ANNEXES, AS REQUIRED BY SECTION 271 OF PUBLIC LAW 109–401

MAY 6, 2009.—Message and accompanying papers referred to the Committee on Foreign Affairs and ordered to be printed

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U.S. GOVERNMENT PRINTING OFFICE

79–011 WASHINGTON : 2009

To the Congress of the United States:

I transmit herewith a list of the sites, locations, facilities, and activities in the United States that I intend to declare to the International Atomic Energy Agency (IAEA), under the Protocol Additional to the Agreement between the United States of America and the International Atomic Energy Agency for the Application of Safeguards in the United States of America, with Annexes, signed at Vienna on June 12, 1998 (the "U.S.-IAEA Additional Protocol"), and constitutes a report thereon, as required by section 271 of Public Law 109–401. In accordance with section 273 of Public Law 109–401, I hereby certify that:

(1) each site, location, facility, and activity included in the list has been examined by each department and agency with national security equities with respect to such site, location, facility, or activity; and

(2) appropriate measures have been taken to ensure that information of direct national security significance will not be compromised at any such site, location, facility, or activity in connection with an IAEA inspection.

The enclosed draft declaration lists each site, location, facility, and activity I intend to declare to the IAEA, and provides a detailed description of such sites, locations, facilities, and activities, and the provisions of the U.S.-IAEA Additional Protocol under which they would be declared. Each site, location, facility, and activity would be declared in order to meet the obligations of the United States of America with respect to these provisions.

The IAEA classification of the enclosed declaration is "Highly Confidential Safeguards Sensitive"; however, the United States regards this information as "Sensitive but Unclassified."

Nonetheless, under Public Law 109–401, information reported to, or otherwise acquired by, the United States Government under this title or under the U.S.-IAEA Additional Protocol shall be exempt from disclosure under section 552 of title 5, United States Code.

BARACK OBAMA.

THE WHITE HOUSE, *May 5, 2009.*

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
1		Reprocessing of nuclear fuel	GE Hitachi Nuclear Energy 3901 Castle Hayne Rd. Wilmington, NC 28401	Project Title: GEH GNEP Deployment Studies. Project ID: DE-PS01-07NE24448 Project level: Feasibility Study R&D Activities: Provide reports to Department of Energy on feasibility of used nuclear fuel recycling. The objective is to provide industrial prospective on closing the nuclear fuel cycle in the United States. The project started on 2007-09-27 and was completed on 2008-09-30.		C000008; BIS Location name: GE Hitachi R&D
2		Reprocessing of nuclear fuel	GE Global Research Center One Research Circle Engineering Systems Building - Room 106 Niskayuna, NY 12309.	Project Title: Global Nuclear Energy Partnership (GNEP) Deployment Studies. Project ID: 225197-1001. Project Level: Feasibility Study. R&D Activities: Assist GE Hitachi Nuclear to prepare GNEP technology development roadmap The objective is to assess the feasibility of deploying commercial reprocessing of nuclear fuel. The project started on 2008-01-01 and is scheduled to end on 2009-09-30.		C00014; BIS loation name: USEC - GE Global Research

(3)

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3		Enrichment of nuclear material	USEC Inc, Central Office Area, Centrifuge Technology Center 350 Centrifuge Way Oak Ridge, TN 37830	Project Title: Research and Development of Centrifuge Machines. Project ID: USEC, INC Development of Centrifuge Project Level: Conceptual Design. R&D Activities: Modification and improvement of tthe original Department of Energy centrifuge technology. The objective is to design and develop an economically attractive and reliable gas centrifuge. The project started in 2003 and is scheduled to end on 2009-03.		C000003; BIS location name: USEC - Main
4		Reactors	Westinghouse Electric Company, LLC, 1000 Westinghouse Drive New Stanton, PA 15672.	Project Title: Westinghouse AP1000 I&C Design Finalization Project. Project ID: DE-FC07-07ID14779. Project level: Proof of Concept: R&D Activities: Design finalization of Westinghouse AP1000 Nuclear Power Plant I&C Systems. The objective is the design finalization of Westinghouse AP1000 Nuclear Power Plant I&C Systems. The project started on 2007-06-29 and is scheduled to end on 2011-11-30.		C000036; BIS location name: Westinghouse - New Stanton

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Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
5		Reactors	Westinghouse Electric Company, LLC 600 Cranberry Woods Cranberry Township, PA 16066	Project Title: Westinghouse AP1000 I&C Design Finalization Project. Project ID: DE-FC07-07ID14779. Project Level: Proof of Concept. R&D Activities: Design finalization of Westinghouse AP1000 Power Plant I&C Systems. The objective is the design finalization of Westingthouse AP1000 Power Plant I&C Systems. The project started on 2007-06-29 and is scheduled to end on 2011-11-30.		C000037 BIS Location name: Westinghouse - Cranberry Woods
6		Reactors	Westinghouse Electric Company, LLC 250 West Kensington Dr Cranberry Business Park Cranberry Township, PA 16066	Project Title: Westinghouse AP1000 I&C Design Finalization Project. Project ID: DE-FC07-07ID14779. Project Level: Proof of Concept. R&D Activities: Design finalization of Westinghouse AP1000 Nuclear Power Plant I&C Systems. The objective is the design finalization of Westinghouse AP1000 Nuclear Power Plant I&C Systems. The project started on 2007-06-29 and is scheduled to end on 2011-11-30.		C000038; BIS location name: Westinghouse - Kensington

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Attachments:			
Comments:			

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7		Reactors	Westinghouse Electric Company, LLC 1332 Beulah Road STC-401 Pittsburgh, PA 15235	Project Title: Experimental Investigation of Small Break LOCAs in Coupled Vessel/Containment Integral Reactors. Project ID: I-NERI 2006-001-E. Project Level: Experiment. R&D Activities: The project entails the following tasks: (1) Design a small break LOCA experimental facility for the coupled vessel/containment configuration that also allows investigation of other accident scenarios (2) Review existing QA plans and update as necessary to satisfy IRIS integral testing needs (3) Perform pre-test analyses to guide and evaluate the actual tests (4) Procure components and assemble the equipment necessary to modify, construct and commission the test facility (5)Conduct the test matrix, including shakedown tests (6) Evaluate results and prepare a comprehensive report. The objective is to verify experimentally the behavior of integral reactors during accident conditions. The Global Nuclear Energy Initiative (GNEP) includes international deployment of smaller-scale, grid-appropriate reactors with fully passive safety systems, such as the International Rector Innovative and Secure (IRIS). IRIS offers advantages over traditional passive safety features with its inherent, design-based approach to coping with small break loss-of-coolant accidents (LOCA) that does		C000043; BIS location name: Westinghouse Pittsburgh (act 1)

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Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

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				not rely on dedicated safety systems for coolant injection. The integral configuration of IRIS (without the primary loop external to reactor vessel) also precludes the possibility of a large break LOCA. The project started on 2006-05 and is scheduled to end on 2012-09. Collaborations: Ente per le Nuove Tecnologie, l'Energia e l'Ambiente (ENEA), Via Martiri di Monte Sole, 4. 40129 Bologna, Italy; Societa Informazioni ed Esperienze Termoidrauliche, Via Nino Bixio, 27, 29100 Piacenza, Italy.		

7

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Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

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8		Reactors	Westinghouse Electric Company, LLC 1332 Beulah Road STC-401, Room 2A3 and 2X9E Pittsburgh, PA 15235	Project Title: International Nuclear Energy Research Initiative IRIS Program. Project ID: DE-FC07-06ID14785. Project Level: Proof of Concept. R&D Activities: Experimental investigation and verification of the design of small break (SB) loss-of-coolant accident (LOCA) in coupled vessel/containment integral reactors. The objective is: (1) Design a small break LOCA experimental facility for the coupled vessel/containment configuration that also allows investigation of other accident scenarios. (2) Review existing QA plans and update as necessary to satisfy IRIS integral testing needs. (3) Perform pre-test analyses to guide and evaluate the actual tests. (4) Procure components and assemble the equipment necessary to modify, construct and commission the test facility. (5) Conduct the tests in the test matrix, including shakedown tests. (6) Evaluate results and prepare a comprehensive report. The project started on 2006-09-27 and is scheduled to end on 2011-09-26. Collaborations: University of Zagreb, Dept of Power Systems, Faculty of Elec England Comp, Unska 3, 10000 Zagreb, Croatia (2) University of Pisa, Italy (3) University of Polimi, Italy. (4) Societa Informatzioni ed Esperienze Termoidrauliche, Via Nino Bixio, 27, 29100 Piacenza, Italy.		C000043; BIS location name: Westinghouse Pittsburgh (Act 2)

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Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

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9		Reactors	Westinghouse Electric Company, LLC 1332 Beulah Road STC-401, Room 2A5 Pittsburgh, PA 15235	Project Title: AP1000 PRHR Outlet Line Thermal Stratification Analysis. Project ID: DE-FC07-07ID14779. Project Level: Theoretical Analysis. R&D Activities: AP1000 PRHR Outlet Line Thermal Stratification Analysis. The objective is to provide the temperature profiles for piping fatigue analysis. The project started on 2008-09-30 and is scheduled to end on 2009-01-31.		C000043; BIS location name: Westinghouse Pittsburgh (Act 3)

9

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Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

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10		Reactors	Westinghouse Electric Company, LLC 1332 Beulah Road STC-401, Room 2A18 Pittsburgh, PA 15235	Project Title: Conceptual Design Next Gen Nuclear Power Plant with Hydrogen Production Project No. 23843. Project ID: Blanket Master Contract Number 00075491 Battelle Energy Alliance, LLC. Project Level: Conceptual Design. R&D Activities and Objective: The studies to be performed under Release #1 are as follows: (1) Reactor containment, embedment depth, and building functions (2) Hydrogen alternatives (3) Composites R&D technical issues (4) Reactor parametric study and review of the recommendations for the operating conditions and configuration of the NGNP Project demonstration plant. (5) Conceptual design planning (6) Licensing specification development. The work to be performed under Release #2 is called "Component Test Facility Initial Conceptual Design Report" and it consists of the following tasks and subtasks: (1) Initial conceptual design studies (2) Technology development roadmaps and test plans (3) Test plan facility coordination and integration - Critical SSC test schedule study (4) Test loop design. The project started on 2008-05-20 and is scheduled to end on 2012-04-30. Collaborators: (1) M-Tech Industrial (Pty) Ltd., Noordbrug 2522, Republic of South		C000043 BIS Location name: Westinghouse - Pittsburgh (Act 4)

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Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

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				Africa (2) Westinghouse Electric Company South Africa, Pretoria, Republic of South Africa. 3. Pebble Bed Modular Reactor (pty) Ltd., Centurion 0046, Republic of South Africa.		

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Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

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11		Reactors	Westinghouse Electric Company, LLC 1332 Beulah Road STC-401, Room 2A10 Pittsburgh, PA 15235	.Project Title: Global Nuclear Energy Partnership GNEP Deployment Studies. Project ID:Subcontract PO-002069 under Coop Agreement DE-FC01-07NE24503. Project Level: Conceptual Design. R&D Activities: (1) Prepare the Advanced Burner Reactor (ABR)/ Advance Recycling Reactor (ARR) business plan (2) Prepare ABR Technology Development Roadmap (3) Prepare the Technology Development Roadmap for the Consolidated Fuel Treatment Center (CFTC)/Nuclear Fuel Recycling Center (NFRC) (4) Prepare ABR Conceptual Design Study (5) Prepare ARR fuel fabrication facility conceptual design study (6) Prepare mixed oxide fuel (MOX) fuel fabrication facility conceptual design study (7) Assist with revisions to the light water reactor recycling center (LWRRC) business plan (8) Assist with the revisions to the Technology Development Roadmap (9) Lead the preparation of the ARR white papers (10) Assist with revisions to the MOX fuel fabrication facility conceptual design study (11) Technology development oversight. The objective is to provide scope, cost and schedule information for the initial nuclear fuel recycling center and advanced recycling reactor, with capabilities of (1)		C000043; BIS location name: Westinghouse Pittsburgh (Act 5)

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Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

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				separating light water reactor spent nuclear fuel into its reusable components and waste components, (2) reducing the volume, heat load and radio-toxicity of waste requiring geologic repository disposal, and 3) generating electricity with an advanced reactor that consumes transuranic elements as part of its fuel. The business plan, technology development roadmap and communications plan will address approaches to achieve the overall long-term GNEP goals and will be used to inform the public and key stakeholders regarding proposed options for successful GNEP implementation. The project started on 2007-10-01 and is scheduled to end on 2009-09-30. Collaborators: (1) Toshiba - IEC, 8, Shinsugita-Cho, Isogo-KU, Yokohama, 235-8523, Japan (2) Christine Brown, Mill Brook, Lorton Road, Cumbria CA139OF, Great Britain (3) Nexia Solutions Ltd., Bids and Contract Management, Risley Warrington, Cheshire, Cumbria WA3 6As, Great Brittian.		

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Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

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12		Nuclear fuel fabrication	Westinghouse Electric Company, LLC 1332 Beulah Road STC-401 Room 2A11 Pittsburgh, PA 15235	Project Title: SiCar Development. Project ID:753573. Project Level: Feasibility Study. R&D Activities and Objective: Design, fabricate and test SiC based fuel cladding. Work includes in-reactor testing of tubing samples at MIT and future tests of fueled specimens at HFIR. The project started on 2005-01 and is scheduled to end on 2028-12.		C000043; BIS location name: Westinghouse Pittsburgh (act 6)
13		Reactors	Westinghouse Electric Company, LLC 1332 Beulah Road STC-401, Room 2A10 Pittsburgh, PA 15235	Project Title: GNEP Deployment Studies. Project ID:DE-FC01-07NE24503. Project Level: Conceptual Design. R&D Activities: Conceptual design & definition of R&D programs required to produce Advanced Recycle Reactor. The objective is conceptual design of Advanced Recycle Reactor and fuel based on sodium cooled, pool type reactor. The project started on 2007-10-01 and is scheduled to end on 2009-09-30.		C000043; BIS location name: Westinghouse Pittsburgh (act 7)

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Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
14		Reactors	Westinghouse Electric Company, LLC 20 International Drive Windsor, CT 06095	Project Title: Conceptual Design Next Gen Nuclear Plant with Hydrogen Production Project No. 23843. Project ID: Blanket Master Contract Number 00075491 Battelle Energy Alliance, LLC Project Level: Conceptual Design. R&D Activities and Objective: The studies to be performed under Release #1 are as follows: (1) Reactor Containment, embedment depth, and building functions (2) Hydrogen plant alternatives (3) Composites R&D technical issues (4) Reactor parametric study and review of the recommendations for the operating conditions and configuration of the NGNP Project demonstation plant (5) Conceptual design planning (6) Licensing specification development. The work to be performed under Release #2 is called "Component Test Facility Initial Conceptual Design Report" and it consists of the following tasks and subtasks: (1) Initial conceptual design studies (2) Technology development roadmaps and test plans (3) Test plan facility coordination and integration - Critical SSC test schedule study (4) Test loop design. The project started on 2008-05-20 and is scheduled to end on 2012-04-30.		C000040; BIS location name: Westinghouse Windsor Nuclear Power Plants

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Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				Collaborators: (1) Pebble Bed Modular Reactor (Pty) Ltd., Centurion 0046, Republic of South Africa. (2) M-Tech Industrial (Pty) Ltd., Noordbrug 2522, Republic of South Africa. (3) Westinghouse Electric Company South Africa, Pretoria, Republic of South Africa.		
15		Reactors	Westinghouse Electric Company, LLC 20 International Drive Windsor, CT 06095	Project Title: Westinghouse AP1000 I&C Design Finalization Project. Project ID: DE-FC07-07ID14779. Project Level: Proof of Concept. R&D Activities and Objective: Design finalization of Westinghouse AP1000 Nuclear Power Plant I&C Systems. The project started on 2007-06-29 and is scheduled to end on 2011-11-30.		C000039; BIS location name: Westinghouse Windsor Nuclear Services
16		Reactors	Westinghouse Electric Company, LLC 4350 Northern Pike Westinghouse Energy Center Monroeville, PA 15146	Project Title: Westinghouse AP1000 I&C Design Finalization Project. Project ID:DE-FC07-07ID14779. Project Level: Proof of Concept. R&D Activities and Objective: Deisgn finalization of Westinghouse AP1000 Nuclear Power Plant I&C Systems. The project started on 2007-06-29 and is scheduled to end on 2011-11-30.		C000041; BIS location name: Westinghouse Monroeville Nuclear Services

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Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

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17		Reactors	Westinghouse Electric Company, LLC 4350 Northern Pike Westinghouse Energy Center Monroeville, PA 15146	Project Title: Westinghouse Design Engineering & Finalization Project. Project ID: DE-FC07-07ID14779. Project Level: Proof of Concept. R&D Activities and Objective: Design finalization of Westinghouse AP1000 Nuclear Power Plant. The project started on 2007-06-29 and is scheduled to end on 2011-11-30. Collaborator: Ansaldo Nucleare s.p.a., Via N. Lorenzi 8, Genoa, Italy		C000042; BIS location name: Westinghouse Monroeville Nuclear Power Plants

17

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Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
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18		Nuclear fuel fabrication	Westinghouse Electric Company Nuclear Fuel - Columbia Site 5801 Bluff Road Columbia, SC 29209 Building A, Manufacturing Building, Administrative Office Area	Project ID: DR-07-2/ER-08-1 Project Title: SU3 LTA-2 Development & Region Design Engineering Project Time Line: Dec. 2006 (Estimated) to Dec. 2011 Project Level:Proof of Concept R&D Activities: Upgrade Lead Test Assembly (LTA)-1 Design & Develop LTA-2 Design for South Ukraine 3 reactor Project Objective: 1. Upgrade LTA-1 Design to implement Double Bulge feature, 2. Develop LTA-2 Design to incorporate P-rods that would eliminate assembly bow to prevent incomplete control rod insertion, increase fuel economy, all the while being hydraulically & mechanically compatible with the competitor core and multiple competitor fuel types Foreign Collaborators: 1. Westinghouse Electric Sweden AB European Fuel Business, SE-721 63, Vasteras, Sweden 2. NAEC "Enorgoatom", St. Vetrova 3, Kiev, Ukraine, 01032		NRC Site Reporting Code: AP-YLM Site name: Westinghouse - Columbia

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Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

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19		Nuclear fuel fabrication	Westinghouse Electric Company Nuclear Fuel - Columbia Site 5801 Bluff Road Columbia, SC 29209 Building A, Manufacturing Building, Chemical Development Laboratory	Project Number: 753573 Project Title: SiCar Development Project Time Line: 1/2005 (Estimated) to 12/2028 Project Level: Feasibility Study R&D Activities: Fabrication of fueled test specimens for in-reactor testing at HFIR Project Objective: Design, fabricate and test Silicon Carbide based fuel cladding Foreign Collaborators: INVAP, F.P. Moreno 1089 - C.C. 961, San Carlos de Bariloche, Rio Negro, Argentina		NRC Site Reporting Code: AP-YLM Site name: Westinghouse - Columbia
20		Nuclear fuel fabrication	Westinghouse Electric Company Nuclear Fule - Columbia Site 5801 Bluff Road Columbia, SC 29209 Building A, Manufacturing Building, Administrative Office Area	Project ID: DR-FC07-07D14779 Project Title: Westinghouse Design Engineering & Finalization Project Project Time Line: Dec. 2006 (Estimated) to Dec. 2011 Project Level: Proof of Concept R&D Activities: Design Finalization of Westinghouse AP1000 Fuel and core Design Project Objective: Design Finalization of AP1000 Fuel and core Design		NRC Site reporting Code: AP-YLM Site name: Westinghouse - Columbia

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21	USA-18-70	Reactors	Lawrence Livermore National Laboratory P.O.Box 808 7000 East Ave. Livermore, CA 94551 Bldg: B132 South; Room: 1755;	Title: AFCI Reactor Structural M&S; ID: LLNL-08-GS-001; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Establish feasibility of using a general purpose finite element code for detailed 3D simulation of fast reactor core structural response and to prototype code coupling approaches with neutronics and thermal-hydraulics simulation teams at Argonne National Laboratory.; Application: Advanced Fuel Cycle Initiative Advanced Burner Reactor technology development; Degree of Completion: 30%; Organization Activities: Organization: LLNL Brief Description: Computer modeling activities to examine structural mechanics issues for fast spectrum reactor core designs.;		DOE-1093 (Original reference - DOE-9-1305)

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22	USA-18-67, USA-18-70	Reactors	Lawrence Livermore National Laboratory P.O.Box 808 7000 East Ave. Livermore, CA 94551 Bldg: B 132 South; Room: 1755;	Title: AFCI Fuels M&S; ID: LLNL-08-GS-002; State Relationship: Funded by DOE and performed on a DOE location; Objectives: This project involves modeling and simulation of TRU fuels in fast burner reactors as part of the AFCI infrastructure. The project includes simulation of U-Zr, Pu-Zr and U-Pu binary alloy systems to understand the physical properties using ab initio simulation tools. As well, the phase diagram of the binary alloys is being assessed using CALPHAD to make predictions of the properties of the ternary phase diagram. This includes code development effort to build a phase field modeling tool that will be capable of using the CALPHAD supplied energy information to drive the kinetics of species redistribution under the conditions anticipated in the core of the advanced burner reactor. Another part of the project deals with the simulation of Fe-Cr steels, proposed cladding materials, under conditions anticipated to exist in the advanced burner reactor. We will perform dislocation dynamics simulations that include irradiation damage obstacles and create upscaled physics-based strength models that can be used in integrated models of fuel pin performance and safety. The final part of the project is the augmentation of an LLNL finite element code to simulate the response of fuel assemblies in core of the advanced burner reactor.; Application: Advanced Burner Reactor for Advanced Fuel Cycle Initiative; Degree of Completion: 20%; Organization Activities: Organization: LLNL Brief Description: AFCI Fuels modeling of TRU fuels in fast burner reactors;		DOE-1094 (original reference DOE-9-1302/DOE-9-1305)

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23	USA-18-67, USA-18-68, USA-18-69	Conversion of nuclear material	Lawrence Livermore National Laboratory 7000 East Avenue Livermore, CA 94551 Bldg: B132S; Room: 1755; Bldg: B281; Room: 1220, 1230, 1184; Bldg: 190; Room: 1000, 1001;	Title: Ultra-deep burnup fuel for a hybrid fusion-fission concept reactor; ID: LLNL-08- NPS-001; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Ultra-deep burnup of a fusion-fission fuel involving modeling and simulations of a hybrid fusion-fission reactor, cladding materials and solid, liquid fuels and coolant. Includes design of radiation-proof materials, calculations related to disposition and waste forms, thermal hydraulics, neutronics, and systems studies.; Application: Future power production concept.; Degree of Completion: 10%; Organization Activities: Organization: LLNL Brief Description: Material studies related to design of subcritical fission blanket for a hybrid fusion-fission reactor;		DOE-1096: (original reference: DOE-9-1302, 1303, 1304) Additional fuel cycle stages: Nuclear Fuel Fabrication, Reactors, Reprocessing of Nuclear Fuel, Processing of Intermediate or High-Level Waste

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Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
24	USA-2-80, USA-2-88, USA-2-119, USA-18-11, USA-18-69	Reprocessing of nuclear fuel	Argonne National Laboratory 9700 S. Cass Ave. Argonne, IL 60439 Bldg: 208; Room: A138; Bldg: 205; Room: A109, J134, X125, X141, G134, X109;	Title: Experimental Development of Separations Technologies for Civilian Spent Nuclear Fuel Treatment; ID: ANL-08-001-AFCI-EDST; State Relationship: Funded by DOE and performed on a DOE location; Objectives: The objective of this work is the development of separations technologies that will: 1. provide actinides for recycle to advanced reactor systems, and 2. provide encapsulation of fission products into durable waste forms.; Application: To simulate all processes and process streams entering, inside, and leaving a commercial fuel reprocessing facility. This will be used to optimize plant design with a reduced amount of pilot-plant testing.; Degree of Completion: 20%; Organization Activities: Organization: ANL Brief Description: This work involves the experimental development of separations technologies for the treatment of spent nuclear fuel from civilian reactors. Spent fuel from civilian reactors includes but is not limited to fuel discharged from thermal spectrum reactors (e.g., LWR, HTGR) and from fast spectrum reactors. The work comprises cold-testing, with simulant materials, separations processes for aqueous and non-aqueous (e.g., pyrochemical) systems. Techniques such as solvent extraction, ion exchange, and electrochemical methods are being developed to affect the desired actinide and fission product separations.;		DOE-1101 (original reference: DOE-1-1171, 1183, 1287 and 9-1230, 1304)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
25	USA-2-80, USA-18-68, USA-18-69	Reprocessing of nuclear fuel	Argonne National Laboratory 9700 S. Cass Ave. Argonne, IL 60439 Bldg: 208; Room: A138;	Title: Modeling of Separations Technologies for Civilian Spent Nuclear Fuel Treatment; ID: ANL-08-002-AFCI-MST; State Relationship: Funded by DOE and performed on a DOE location; Objectives: The objective of this work is the theoretical development of separations technologies and processing systems that will: 1. provide actinides for recycle to advanced reactor systems, and 2. provide encapsulation of fission products into durable waste forms.; Application: To develop all processes for separating fuel constituents in a (1) commercial fuel reprocessing facility for light-water-reactor fuel and (2) commercial fuel reprocessing facility for fast-reactor fuel. Separated constituents will eventually be disposed of as low-level and high-level waste or transmuted.; Degree of Completion: 40%; Organization Activities: Organization: ANL Brief Description: This work involves modeling and simulation of separations technologies for the treatment of spent nuclear fuel from civilian reactors. Spent fuel from civilian reactors includes but is not limited to those discharged from thermal spectrum reactors (e.g., LWR, HTGR) and from fast spectrum reactors. Modeling and simulation encompasses developing codes to understand the fundamental properties of separations systems or key components of the system (e.g., complexant performance), to design and / or evaluate engineering solutions for fuel treatment unit operations (e.g., centrifugal contactor performance), and to aide the design and optimization of future commercial fuel treatment systems		DOE-1102 (original reference:DOE 1-1171 and 9-1303, 1304)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				(e.g., plant design).;		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
26	USA-18-68, USA-18-69, USA-18-70	Reactors	Argonne National Laboratory 9700 S. Cass Ave. Argonne, IL 60439 Bldg: 208; Room: A138;	Title: Systems Analysis of Fuel Cycle Options for Civilian Nuclear Energy Systems; ID: ANL-08-003-AFCI-SA; State Relationship: Funded by DOE and performed on a DOE location; Objectives: This work comprises the theoretical evaluation of civilian nuclear fuel cycles. The objective of the work is to identify fuel cycle strategies that optimize resource utilization, provide actinides for recycle to advanced reactor systems and optimize the use of geologic storage systems for fission products and process waste.; Application: The intended application is to provide data to assist DOE on defining program direction related to fuel cycle development and to the assessment of alternate processes and systems.; Degree of Completion: 60%; Foreign Collaboration: France (F) Commissariat à l'énergie atomique (CEA) Cadarache Information exchange of data derived from systems analysis studies of single-tier and double-tier systems for advanced fuel cycle options Organization Activities: Organization: ANL Brief Description: This work involves systems analysis and advanced simulations of civilian nuclear energy systems to evaluate fuel cycle options that maximize		DOE-1103: (original reference: DOE 9-1303, 1304, 1305) Additional fuel cycle stages: Reprocessing of Nuclear Fuel

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				energy production and limit the amount of high level waste destined for a geologic repository. The primary emphasis of the work is evaluation of the benefits of a single-tier (fast reactor system) and double-tier (thermal / fast reactor system) approach to nuclear energy production and waste management in comparison to the current once-through fuel cycle. ANL is the lead laboratory in the DOE-NE AFCI Reactors Campaign and performs oversight and management of sodium reactor research and development work performed for DOE. ANL also provides support to the DOE-NE AFCI Fuels Campaign.;		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
27	USA-18-70	Reactors	Argonne National Laboratory 9700 S. Cass Ave. Argonne, IL 60439 Bldg: 208; Room: A138;	Title: Computational Physics of Advanced Sodium Fast Reactor Systems for Civilian Nuclear Energy Systems; ID: ANL-08-004-AFCI-CP; State Relationship: Funded by DOE and performed on a DOE location; Objectives: The objective of the work is to identify nuclear reactor designs optimized for energy production and transmutation of actinide elements.; Application: Physics modeling and simulation of civilian nuclear energy systems and sensitivity analysis for uncertainty evaluation of integral parameters relevant to core design.; Degree of Completion: 60%; Organization Activities: Organization: ANL Brief Description: This work involves physics modeling and simulation of civilian nuclear energy systems. The modeling and simulation work includes the conceptual design and evaluation of advanced sodium-cooled fast reactor (SFR) systems that optimize transuranic element burn-up, the uncertainty analysis of key fundamental data relevant to core design, and providing guidance to experimentalists regarding data needs (e.g., improved cross-sections) for improved core design and performance.;		DOE-1104 (original reference: DOE 9-1305)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
28	USA-2-105, USA-2-106, USA-2-107, USA-2-109, USA-18-64, USA-18-65	Reactors	Argonne National Laboratory 9700 South Cass Avenue Argonne, IL 60439 Bldg: 208; Room: A138;	Title: Development of Analysis Methods and Codes for GenIV Nuclear Energy Systems; ID: ANL-08-006-GenIV-NESM; State Relationship: Funded by DOE and performed on a DOE location; Objectives: The purpose of this activity is to advance existing nuclear reactor design and analysis tools (codes and data) so that they can be used for design analysis and licensing of the advanced Generation IV systems.; Application: The end product of the Generation IV initiative will be one or more next-generation nuclear energy systems that may be deployed around the world by 2030 or earlier. (The VHTR/NGNP is the focus of the U.S. Gen-IV program.); Degree of Completion: 60%; Foreign Collaboration: Korea, Republic of (KO) Korea Atomic Energy Research Institute Daejun, Republic of Korea ANL is involved in two International Nuclear Energy Research Initiative (I-NERI) collaboration projects with KAERI (ROK). The first, which is led by ANL in the U.S., is focused on the joint development of an advanced multi-physics simulation tool (methods and codes) for first-principle, spatially-detailed prediction of the coupled neutronic and thermo-fluid behavior in prismatic VHTRs. The second project with KAERI is led by INL on the U.S. side, and also involves ANL, one U.S. university (TAMU), and one ROK university (SNU). This project is focused on experimental and analytic studies of core bypass flow in VHTRs.		DOE-1105 (Original refernce: DOE 1-1202,1203,1204, 1206 and 9-1299, 1300)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				Specific objectives of this research are (a) to generate experimental data for the core bypass flow, (b) to assess the thermo-fluid analysis tools for their accuracy and model improvements, and (c) to identify and assess measures for the reduction of the bypass flow. Organization Activities: Organization: ANL Brief Description: Six advanced nuclear energy systems are being developed internationally under the Generation IV International Forum (GIF). The six Generation IV systems are the Very High Temperature Reactor (VHTR), the Sodium-Cooled Fast Reactor (SFR), the Gas-Cooled Fast Reactor (GFR), the Lead-Cooled Fast Reactors (LFR), the Supercritical Water-Cooled Reactor (SCWR), and the Molten-Salt Cooled Reactor (MSR). ANL is involved in the development of analysis methods and codes, and acquisition of experimental data that could be used for (1) evaluation of the Generation IV systems for the purpose of selecting the viable options based on various metrics (safety, economy, sustainability, non-proliferation and waste minimization, etc.), and for (2) the reactor physics, thermal-hydraulic and safety design and analysis and licensing of the systems. ANL also leads the U.S. efforts directed to advancement of Generation IV system evaluation methods. The evaluation methods being developed will be used for evaluating all the Generation IV systems. The design and analysis methods activities at ANL are focused primarily on the VHTR (i.e., the Next Generation Nuclear Plant, NGNP). The data acquisition activities are focused on determining the relevance of existing physics and safety experimental data and the evaluation of the need to conduct new experiments. ANL is taking the lead in evaluating the applicability of the Natural Convection Shutdown Heat Removal Test Facility for demonstrating the performance of the		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				VHTR reactor cavity cooling system (RCCS) for passive decay heat removal, and for the validation of codes for RCCS analysis. ANL is involved in national programs evaluating the performance and development of computational fluid dynamics (CFD) tools for the analysis of the advanced systems. ANL is the lead for an International Nuclear Energy Research Initiative (I-NERI) collaboration project with KAERI (ROK) on an advanced VHTR physics tool development method. The two institutions also collaborate in a project on experimental and analytic studies of core bypass flow in VHTRs.;		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
29	USA-18-64, USA-18-65	Reactors	Argonne National Laboratory 9700 South Cass Avenue Argonne, IL 60439 Bldg: 208; Room: A138;	Title: Analysis of Power Conversion for Gen IV Nuclear Energy Systems; ID: ANL-08-007-GenIV-NESPC; State Relationship: Funded by DOE and performed on a DOE location; Objectives: The objective of the project is the development of the supercritical carbon dioxide Brayton cycle power conversion system.; Application: The intended application is advanced power conversion systems for GenIV reactors.; Degree of Completion: 60%; Foreign Collaboration: Korea, Republic of (KO) Korea Atomic Energy Research Institute (KAERI) Daejon, Republic of Korea KAERI is carrying out structural analyses for structural design of sodium-cooled fast reactors at high temperatures at which creep, fatigue, and creep-fatigue must be evaluated. KAERI will also carry out seismic and buckling analyses. Korea, Republic of (KO) Seoul National University (SNU) Gwanak _ 599 Gwanak-ro, Gwanak-gu, Seoul 151-742, SNU is applying digital process management using 4+ dimensional visualization to small sodium-cooled fast reactor concepts to simulate sequences of the plant construction process to optimize the construction process. SNU is also carrying out experiments and analyses supporting the development of supercritical carbon		DOE-1106 (original reference DOE-9-1233, 1300)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				dioxide Brayton cycle power conversion. Organization Activities: Organization: ANL Brief Description: ANL is evaluating the supercritical carbon dioxide (S-CO2) Brayton cycle as an advanced power conversion system for Sodium-cooled Fast Reactors (SFRs) and Very High Temperature Reactors (VHTRs). The specific ANL efforts include performing analysis and evaluations of S-CO2 control system options and strategies, and testing of compact diffusion bonded heat exchangers under prototypical conditions with supercritical CO2 and analysis of small-scale S-CO2 components.;		

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Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
30	USA-18-62	Reactors	Argonne National Laboratory 9700 South Cass Avenue Argonne, IL 60439 Bldg: 208; Room: A138;	Title: Initiative for Proliferation Prevention Projects; ID: ANL-08-010-IPP; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Develop a numerical computer code which models the performance of cooling water flowing through the core of a pressurized water reactor (PWR). There are economic benefits to operating the core and the exit temperature of the cooling water as hot as possible; but it is essential to prevent problems associated with burn out and other high-temperature limitations.; Application: Design and operation of PWR systems, such as the Westinghouse commercial power reactors.; Degree of Completion: 50%; Foreign Collaboration: Russia (Z) All-Russian Scientific Research Institute of Exper Sarov (formerly Arzamas-16, also known as Kremlev) Develop CFD numerical modeling of BWR coolant, with the goal of improving safety and performance of commercial power plants. Russia (Z) Sarov Labs Sarov, Nizhniy Novgorod Oblast, Russia Develop CFD numerical modeling of BWR coolant, with the goal of improving safety and performance of commercial power plants.		DOE-1107 (original reference DOE-9-1297)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				Organization Activities: Organization: ANL Brief Description: The Initiatives for Proliferation Prevention (IPP) program acts to broker cooperative r&d relationships between Former Soviet Union (FSU) scientists and US business interests, with the intention of incubating commercial business opportunities for underemployed FSU researchers who were previously engaged in weapons research. The role of Argonne staff is to create a statement of work for the FSU participants and issue a subcontract for those activities, to be performed by the FSU participants in their home laboratories (eg, in Russia or Ukraine). The staff at Argonne review reports of the research and development activities and authorize payments if the FSU work is acceptable. Currently there is one ANL-IPP project: 1 - Computational fluid dynamics (CFD) modelling of turbulent flow in PWR core cooling.;		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
31	USA-18-7	Reactors	Argonne National Laboratory 9700 South Cass Ave. Argonne, IL 60439 Bldg: 208; Room: A138;	Title: Conversion Analysis for Research Reactors; ID: ANL-08-017-RERTR-CARR; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Reduce or eliminate the use of HEU in civilian nuclear facilities worldwide by converting them to LEU fuel. This program has been ongoing for 30 years and is expected to be completed by 2018.; Application: Conversion of civilian facilities using high enriched uranium (HEU) to low enriched uranium (LEU) fuels and targets.; Degree of Completion: 50%; Foreign Collaboration: Jamaica (AJ) INT'L CENTRE FOR ENVIRONMENTAL AND NUCLEAR SCIENCE 2 Anguilla Close Mona Campus, University of the We Discussions of possible core conversion. South Africa (AZ) Nuclear Energy Corporation of South Africa P.O. Box 582 Pretoria, 0001, South Africa Discussion on conversion of Safari-1 reactor. Bulgaria (BG) INSTITUTE OF NUCLEAR RESEARCH AND NUCLEAR ENERGY		DOE-1108: (original reference DOE-9-1224) Additional fuel cycle stages: Critical Facilities

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				72 Tzarigradsko chaussee, Blvd. BG – 1784 Sofia, Design and safety analyses for Sofia replacement research reactor. Canada (CN) ATOMIC ENERGY OF CANADA LTD (AECL) Ottawa, Ontario, Canada Discussions of possible core conversion of three Slowpoke reactors. Czech Republic (CZ) NUCLEAR RESEARCH INSTITUTE (NRI) Husinec - Řež 130 250 68 Řež, Czech Republic Discussions with Nuclear Research Institute on possible core conversion. Ghana (GH) Ghana Atomic Energy Commission (GAEC) P. O. Box LG80, Legon-Accra, Ghana Design and safety analyses for conversion of MNSR reactor. Hungary (HU) KFKI ATOMIC ENERGY RESEARCH INSTITUTE 1121 Budapest, Konkoly Thege út 29-33. Design and safety analyses for conversion of BRR reactor. International Atomic Energy Agency (IA) IAEA, FUEL CYCLE AND MATERIALS SECTION Vienna, Austria IAEA established a Coordinated Research Project (CRP) to study conversion of MNSR reactors.		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				ANL has completed paperwork for a Cooperative Research Agreement to participate in the CRP. Kazakhstan (KA) KAZAKHSTAN ATOMIC ENERGY COMMITTEE (KAEC) Lisa Chaikinoi St. 4 Almaty, 480020 Discussion of regulatory requirements for core conversion. Uzbekistan (KT) INSTITUTE OF NUCLEAR PHYSICS (INP) Ulugbek, Tashkent, UZ-702132, Uzbekistan Design and safety analyses for conversion of WWR-SM reactor. Nigeria (NF) Center for Energy Research and Training (CERT) Ahmadu Bello University, Zaria Nigeria Design and safety analyses for conversion of MNSR reactor. Netherlands (NL) NUCLEAR RESEARCH AND CONSULTANCY GROUP (NRG) NRG, PO Box 25, NL-1755 ZG Petten, Netherlands No involvement in 2008 Poland (PL) INSTYTUT ENERGII ATOMOWEJ (IEA) 05-400 Otwock-Swierk, Poland Design and safety analyses for conversion of MARIA reactor.		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				Portugal (PO) INSTITUTO TECNOLOGICO E NUCLEAR (ITN) Estrada Nacional 10 2686-953 Sacavém, Portugal Conversion of Portugal's RPI reactor is completed. Current collbaration is cooperation in support of conversion of Sofia, Bulgaria, research reactor. Argentina (RA) COMISION NACIONAL DE ENERGIA ATOMICA (CNEA) Avda. del Libertador 8250 CP 1429 Ciudad Autónoma Discussion on conversion of the RA-6 reactor in Bariloche. Ukraine (RK) KIEV INSTITUTE FOR NUCLEAR RESEARCH (KINR) Prospekt Nauky 47, Kyiv, Ukraine 03680 No involvement in 2008 Vietnam, Socialist Republic of (RV) NUCLEAR RESEARCH INSTITUTE (INR) 01 Nguyen Tu Luc St., Dalat, Vietnam Design and safety analyses for conversion of DRR reactor. Turkey (TR) TURKISH ATOMIC ENERGY AUTHORITY (TAEA) Eskisehir Yolu 9 km Lodumlu 06530 Ankara Turkey No involvement in 2008		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				Kazakhstan (KA) The Institute of Nuclear Physics (INP) Ibragimova St.1 Almaty, 480082 Design and safety analyses for conversion of WWR-K reactor. France (F) AREVA-CERCA BP 1114, 26104 Romans sur Isère Cedex, France Conversion of RHF reactor in Grenoble, France, and BR2 reactor in Mol, Belgium. France (F) Institut Laue-Langevin BP 156 6, rue Jules Horowitz 38042 Grenoble Cedex Conversion of RHF reactor in Grenoble, France. France (F) Commissariat à l'Énergie Atomique (CEA) - Grenoble 38054 Grenoble Cedex France Conversio		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
32	USA-18-7	Reactors	Argonne National Laboratory 9700 South Cass Ave. Argonne, IL 60439 Bldg: 208; Room: A138;	Title: High Density LEU Fuel Irradiation Performance and Modeling for Research Reactors; ID: ANL-08-018-RERTR-HDFIPM; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Reduce or eliminate the use of HEU in research reactors by converting them to LEU fuel. This program has been ongoing for 30 years and is expected to be completed by 2018.; Application: Develop and qualify low enriched uranium fuel for use in research reactors as a replacement for high enriched uranium.; Degree of Completion: 50%; Foreign Collaboration: Australia (AS) Australian Nuclear Science and Technology Organiza Lucas Heights, New South Wales Australia Information exchange. South Africa (AZ) SOUTH AFRICAN NUCLEAR ENERGY CORPORATION (NECSA) Church Street West Extension Pelindaba PRETORIA 00 Information exchange. No modeling or PIE collaboration. We provide fuel fabrication assistance.		DOE-1109 (original reference DOE-9-1224)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Locations	General Description	Attachments	Comments
				Belgium (BL) Belgian Nuclear Research Centre (SCK-CEN) Boeretang 200 2400 Mol, Belgium Information exchange Canada (CN) ATOMIC ENERGY OF CANADA LTD (AECL) Chalk River, Ontario Canada Information exchange on behavior of unirradiated and irradiated U-Mo fuels. France (F) COMMISSARIAT A L'ENERGIE ATOMIQUE (CEA) Saclay and Cadarache Information exchange on behavior of unirradiated and irradiated U-Mo fuels. Korea, Republic of (KO) KOREA ATOMIC ENERGY RESEARCH INSTITUTE (KAERI) Daejun, Republic of Korea Information exchange on behavior of unirradiated and irradiated U-Mo fuels. Argentina (RA) COMISION NACIONAL DE ENERGIA ATOMICA (CNEA) Avda. del Libertador 8250 CP 1429 Ciudad Autónoma Information exchange on fabrication techniques for U-Mo fuels and on irradiated behaviour of U-Mo fuels.		

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Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				Russia (Z) A.A. BOCHVAR INSTITUTE (ALL-RUSSIA RESEARCH INSTIT Moscow, Russian Federation Development, testing, and qualifying U-Mo fuels under contract with ANL. (A number of sub-contracting organizations are involved, such as RIAR, Research Institute of Atomic Reactors, and IRM, Institute of Reactor Materials.) International Atomic Energy Agency (IA) IAEA Fuel Cycle and Materials Section Vienna, Austria Information exchange Organization Activities: Organization: ANL Brief Description: Development of advanced high density low enriched uranium fuel for use in research reactors: modeling and evaluation of data generated in unirradiated and irradiated SNM (U-Mo) samples.;		

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Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
33	USA-18-10	Reactors	Argonne National Laboratory 9700 South Cass Avenue Argonne, IL 60439 Bldg: 208; Room: A138;	Title: Joint Study on Safety Testing of Advanced Concepts - Analytical development and evaluation; ID: ANL-08-019-WFO-JSSTAC; State Relationship: Performed on a DOE location; Objectives: This activity supports the development of an improved capability to plan and analyze in-reactor transient experiments on advanced nuclear fuels and materials in the Transient Reactor Test (TREAT) Facility located at the Idaho National Laboratory. It also supports the preliminary considerations of a future experiment program in TREAT, in part by evaluating key materials behaviors.; Application: The work is conducted in anticipation of the possible restart of the TREAT facility and subsequent performance of experiments in the facility. The experiments would investigate the transient behavior characteristics of advanced nuclear fuels and materials. Many of the experiments would likely be international collaborations and involve fuels of interest to the U.S. and to the international nuclear power community.; Degree of Completion: 90%; Foreign Collaboration: Japan (J) JAEA Head Office 4-49 Muramatsu, Tokai-mura, Naka-gun, JAEA's involvement is to collaborate in (a) determining the workscope, (b) planning and evaluation of experiments and materials examinations, and (c) general planning of analyses and review of analytical results.		DOE-1110 (original reference DOE-9-1228)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				Organization Activities: Organization: ANL Brief Description: The work involves preliminary experiment program planning, considerations of safety issues for advanced fuels, development and evaluation of neutronics and thermal-hydraulics software for analysis of in-reactor and laboratory experiments on nuclear fuels and materials. The tasks are focused on ceramic and metallic fuels for advanced fast reactor core designs. The codes MCNP, STAR-CD, SINDA, and COBRA-PI are being used for the analyses.;		

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Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
34	USA-18-62	Reactors	Argonne National Laboratory 9700 South Cass Avenue Argonne, IL 60439 Bldg: 212; Room: EL-208; Bldg: 212; Room: E109/IML; SubArea: Hot Cells 3 & 4, G/B #1 and #2; Bldg: 212; Room: DL-114; SubArea: Five glove boxes; Bldg: 212; Room: DL-112; Bldg: 208; Room: A138;	Title: Advanced Fuel Cladding Response to Limiting Conditions; ID: ANL-08-024-WFO-AFCR; State Relationship: Performed on a DOE location; Objectives: This program will provide the technical basis for (a) revising cladding limits in 10 CFR 50.46(b) for loss-of-coolant-accident (LOCA) analysis, and (b) upgrading NRC-NMSS Interim Staff Guidance No 11 for reviewing license applications for transport casks to carry high-burnup spent nuclear fuel.; Application: The results of these investigations will be used to confirm and/or improve LOCA acceptance criteria under which reactors are licensed to operate up to high burnup, to provide data for evaluation of SNF transport cask license applications, and to help nuclear vendors improve their cladding alloys.; Degree of Completion: 50%; Organization Activities: Organization: ANL Brief Description: Experiments are being performed to investigate the performance of LWR cladding during loss-of-coolant accident (LOCA) and Spent Nuclear Fuel (SNF) cask transport accident. Data generated in this program are also provided to the nuclear vendors and utilities (through EPRI) to allow for independent data assessment. Loss-of coolant accident (LOCA): Investigate the decrease in ductility of cladding as a function of hydrogen (picked up during normal operation due to water-metal reaction), steam-oxidation temperature, and time at temperature. Cladding experiments consist of heating		DOE-1111 (original reference DOE-9-1297)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				samples in steam to a target temperature, holding at target temperature for various times, cooling, and water-quenching to generate very fast cooling. Post-test rings from the cladding samples are compressed in a Materials Test System (MTS) to determine ductility data and transition from ductile-to-brittle behavior data. Spent Nuclear Fuel (SNF) Cask Transport Accidents: To transport spent fuel, it is necessary to first move the fuel from the water storage pool to the cask and to dry the fuel within the cask. Such a process is carried out at high-temperature (less than or equal 400 degC by regulation) and with high internal gas pressure within the fuel rods. Experiments are being conducted to determine the limits on internal pressure and stress to maintain cladding ductility. Following heating and cooling of pressurized rodlets to simulate the drying process, rings from the rodlets are subjected to high-displacement-rate ring-compression tests and impact tests to determine the stress data at 400 degC that will result in radial-hydride-induced embrittlement.;		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
35	USA-18-62	Reactors	Argonne National Laboratory 9700 South Cass Avenue Argonne, IL 60439 Bldg: 315; Room: Cells 4 and 6; Bldg: 208; Room: A138;	Title: Melt Coolability and Concrete Interaction Program; ID: ANL-08-029-WFO-MCCI; State Relationship: Performed on a DOE location; Objectives: The objective of this work is to determine the effectiveness of reactor cavity flooding as a means of quenching molten core material that is undergoing molten core-concrete interaction with the underlying concrete basemat.; Application: Data from these tests is being used to confirm the adequacy of Severe Accident Management (SAM) guidelines for existing plants, and is forming the technical basis for improved containment designs in advanced plants.; Degree of Completion: 80%; Foreign Collaboration: France (F) Organisation for Economic Co-operation and Develop OECD Nuclear Energy Agency Le Seine Saint-Germain OECD is a sponsor of the activity. France (F) EDF SEPTEN 12-14 Avenue Dutrievoz 69628 Villeurbanne cedex Fr Electricite de France is a sponsor of the activity.		DOE-1112 (original reference DOE-9-1297)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				Organization Activities: Organization: ANL Brief Description: In the event that a core melt accident in a Light Water Reactor (LWR) proceeds to the point where the reactor vessel is breached, the molten core material will relocate into the containment and begin interacting with the underlying concrete basemat. This experimental program is providing data on the efficacy of containment flooding as a means of quenching the molten core material, thereby terminating the accident progression.;		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
36	USA-18-62	Reactors	Argonne National Laboratory 9700 South Cass Avenue Argonne, IL 60439 Bldg: 208; Room: A138;	Title: Melt Spreading Code Assessment, Modifications, and Applications for EPR Severe Accident Analysis; ID: ANL-08-036-WFO-MSCAMA; State Relationship: Performed on a DOE location; Objectives: This project is providing technical support to the US NRC for evaluating the core-catcher design for the EPR 1600.; Application: Support the pre-licensing analysis for the EPR plant design.; Degree of Completion: 70%; Organization Activities: Organization: ANL Brief Description: Apply the MELTSPREAD 1.0 computer code to assess spreading behavior in the Evolutionary Power Reactor (EPR) core catcher that is undergoing pre-application review by the U.S. NRC. The specific tasks are: 1) validate the code against existing simulant and reactor material spreading test data, 2) modify the code as needed in order to incorporate experiment findings, and 3) apply the code to assess the degree to which the corium will spread uniformly in the core catcher of the EPR.;		DOE-1113 (original reference DOE-9-1297)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
37	USA-18-62	Reactors	Argonne National Laboratory 9700 South Cass Avenue Argonne, IL 60439 Bldg: 208; Room: A138; Bldg: 212; Room: H-WING High Bay; SubArea: Steam tube experimental area;	Title: LWR Steam Generator Tube Degradation Prediction; ID: ANL-08-037-WFO-SGT; State Relationship: Performed on a DOE location; Objectives: The objectives of the program are as follows: (a) development and documentation of flaw sizing algorithms, (b) evaluation and experimental validation of models to predict the leak and failure behaviors of degraded steam generator tubes embedded within a tube sheet during severe accidents, and (c) evaluation and validation of the equivalent rectangular crack model to predict ligament rupture and leak rate in stress corrosion cracks.; Application: Intended application is to provide the NRC with needed data and predictive models to help ensure the safe operation of steam generators in nuclear reactors.; Degree of Completion: 60%; Organization Activities: Organization: ANL Brief Description: Steam generator tubes in PWRs have experienced in-service corrosion and mechanical degradation of various forms since the beginning of commercial operation. As plants age and degradation proceeds, new forms of degradation appear, and new defect-specific management schemes are implemented. ANL is providing the experimental data and the predictive correlations and models needed to permit the NRC to independently evaluate the integrity of steam		DOE-1114 (original reference DOE-9-1297)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				generator tubes.;		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
38		Reactors	Argonne National Laboratory 9700 South Cass Avenue Argonne, IL 60439 Bldg: 208; Room: A138; Bldg: 212; Room: CL-106A;	Title: CANDU Pressure Tube Fatigue Behavior; ID: ANL-08-038-WFO-CPTFB; State Relationship: Performed on a DOE location; Objectives: The primary objective of the effort is to develop a database on low-cycle properties for Zr-2.5 Nb alloy, which is currently used as the pressure tube material in CANDU reactors, and to determine (a) the effect of anisotropy and (b) the conservative fatigue life in air.; Application: Intended application is to provide experimental data to help ensure the safe continued operation of CANDU reactors.; Degree of Completion: 50%; Foreign Collaboration: Canada (CN) Atomic Energy of Canada Limited (AECL) - Chalk Riv Chalk River, Ontario Sponsor of tests. Organization Activities: Organization: ANL Brief Description: In this project we are conducting experimental work related to the fatigue behavior of Zr-2.5 Nb alloy to develop a database on low-cycle properties for Zr-2.5 Nb allloy, which is currently used as the pressure tube material in CANDU reactors. Tests will be conducted in air and in water to simulate the chemistry in CANDU reactors. The tests will be performed on CANDU pressure tubes, manufactured from as-received material, in both the		DOE-1115

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments?	Comments
				longitudinal and transverse orientations.;		
39	USA-18-64, USA-18-69	Reprocessing of nuclear fuel	Argonne National Laboratory 9700 South Cass Avenue Argonne, IL 60439 Bldg: 208; Room: A138;	Title: Process Modeling and Separations Process Development for HTGR spent fuel recycling; ID: ANL-08-041-GenIV-HTGR; State Relationship: Funded by DOE and performed on a DOE location; Objectives: The objective of this research is to assess the feasibility of recycling TRISO and TRISO-like spent fuel, recovering the actinides for use in a fast reactor.; Application: High-temperature gas-cooled reactor spent fuel actinide management: Recovering the actinides in TRISO and TRISO-like spent fuel for use in a fast reactor.; Degree of Completion: 10%; Organization Activities: Organization: ANL Brief Description: This project involves process modeling and separations process development for recycling spent fuel from high-temperature gas-cooled reactors. Chemical processing flowsheets will be identified and theoretical mass balances created for processing TRISO fuel. To assess process feasibility, small-scale experiments are being developed, but no experimental work has been conducted yet.;		DOE-1116 (original reference DOE-9-1299, 1304)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
40	USA-18-70	Reactors	Argonne National Laboratory 9700 Cass Avenue Argonne, IL 60439 Bldg: 208; Room: A138;	Title: Safety Modeling Validation for Sodium Fast Reactors; ID: ANL-08-042-AFCI-SMV; State Relationship: Funded by DOE and performed on a DOE location; Objectives: This work comprises the evaluation of thermal-hydraulic safety tools for SFRs. The objective of the work is to provide the safety validation basis for nuclear reactor designs optimized for transmutation of actinide elements.; Application: Safety modeling and thermal-hydraulic simulation of SFRs and design analyses for evaluation of safety margins relevant to reactor design.; Degree of Completion: 60%; Organization Activities: Organization: ANL Brief Description: This work involves validation of tools for safety modeling and thermal-hydraulic simulation of sodium-cooled fast reactors (SFR). The modeling and simulation focus includes the primary and intermediate loops and advanced reactor core systems that optimize transuranic element burn-up. The validation analysis with key data is relevant to safety design, and provides guidance to experimentalists regarding data needs and modelers for improved safety code performance.;		DOE-1117 (original reference DOE-9-1305)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
41	USA-18-70, USA-2-68	Reactors	Argonne National Laboratory 9700 South Cass Avenue Argonne, IL 60439 Bldg: 208; Room: A138; Bldg: 370; Room: Highbay; SubArea: ALEX enclosure area;	Title: Sodium Reactor Technology Development; ID: ANL-08-043-AFCI-SRTD; State Relationship: Funded by DOE and performed on a DOE location; Objectives: The objective of this activity is to support the development of technology for components of a sodium-cooled fast reactor system. The information developed will be used to address the out-of-core structural components such as core support structure, vessel, intermediate heat exchanger, and steam generator.; Application: The U.S. Department of Energy (NE) and industrial sector, for application in the design and construction of sodium-cooled reactors, will use the information developed in this project.; Degree of Completion: 10%; Organization Activities: Organization: ANL Brief Description: The work involves the development of technologies for sodium-cooled reactors. There are four focus areas of this activity: 1. Fast reactor component testing using a experimental sodium test loop, 2. Compatibility studies of advanced fast reactor materials with sodium, (experimental work has not yet been initiated; experimental work is under development) 3. a Demonstration of under-sodium viewing technologies (experimental work has not yet been initiated; experimental work is under development), and 4. advanced materials code qualification in support of the sodium-cooled Advanced Recycling Reactor (ARR).;		DOE-1118 (original reference DOE-9-1305 and 1-1152)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
42	USA-18-70	Reactors	Argonne National Laboratory 9700 South Cass Avenue Argonne, IL 60439 Bldg: 208; Room: A138;	Title: Sodium Fast Reactor Design Trade Studies; ID: ANL-08-044-AFCI-SRTS; State Relationship: Funded by DOE and performed on a DOE location; Objectives: The objectives of this work are to support the development of an innovative future advanced sodium fast reactor concept that can be further studied to optimize the concept for cost and commercialization.; Application: Direct application to advanced sodium-cooled fast reactor designs.; Degree of Completion: 10%; Organization Activities: Organization: ANL Brief Description: The work involves investigating innovations in fast-spectrum sodium-cooled reactor technology. Design trade studies are being conducted to develop concepts which can compete economically with the most cost-effective energy technologies while further enhancing nuclear safety, minimizing the impact of nuclear waste, and further reducing the risk of proliferation.;		DOE-1119 (original reference DOE-9-1305)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
43	USA-18-62	Reactors	Argonne National Laboratory 9700 South Cass Avenue Argonne, IL 60439 Bldg: 208; Room: A138; Bldg: 212; Room: CL-106A, CL-122, E-109/IML, G-174H;	Title: Environmentally Assisted Cracking of Light Water Reactor (LWR) Components; ID: ANL-08-045-WFO-EAC; State Relationship: Performed on a DOE location; Objectives: The overall objective of the program is to conduct research that addresses the aging of reactor components. The research is used to evaluate and establish regulatory guidelines to assure acceptable levels of reliability for LWR components.; Application: This NRC-funded program addresses the aging degradation of reactor components to ensure the continued safe operation of existing LWRs. The results are used to evaluate and establish regulatory guidelines to ensure acceptable levels of reliability for commercial reactor components. The products of this program have been technical reports, methodologies for evaluating licensee submittals, and other inputs to the regulatory process. These results have led to the resolution of regulatory issues, as well as the development, validation, and improvement of regulations and regulatory guides.; Degree of Completion: 10%; Organization Activities: Organization: ANL Brief Description: The research is divided into three tasks: evaluation of causes and mechanisms of irradiation assisted stress corrosion cracking (IASCC) in BWRs; evaluation of causes and mechanisms of IASCC in PWRs; and cracking of nickel alloys and welds.;		DOE-1120 (original referencfe DOE-9-1297)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
44	USA-18-70	Reactors	Argonne National Laboratory 9700 Cass Avenue Argonne, IL 60439 Bldg: 208; Room: A138; Bldg: 315; Room: Cell 5;	Title: Thermal-Hydraulics Modeling Experiments for Sodium Fast Reactor Systems; ID: ANL-08-046-LDRD-THME; State Relationship: Funded by DOE and performed on a DOE location; Objectives: This work comprises the experimental provision of validation data for thermal-hydraulic simulation tools for SFR systems. The objective of the work is to perform experiments to provide the thermal-hydraulic modeling validation data for nuclear reactor designs optimized for transmutation of actinide elements.; Application: Thermal-hydraulic simulation of SFR systems and design analyses for evaluation of thermal-hydraulic margins relevant to reactor design.; Degree of Completion: 30%; Organization Activities: Organization: ANL Brief Description: This work involves experimental generation of validation data for thermal-hydraulic (T-H) simulation of sodium-cooled fast reactor (SFR) systems. The experiment focus includes the primary loops and containments for advanced reactor core systems that optimize transuranic element burn-up. The validation data is relevant to T-H system design, and provides the basis to modelers for improved T-H code performance.;		DOE-1121 (original refernce DOE-9-1305)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
45	USA-18-70	Reactors	Argonne National Laboratory 9700 South Cass Avenue Argonne, IL 60439 Bldg: 208; Room: A138;	Title: Computational Thermal-Hydraulics of Civilian Nuclear Energy Systems; ID: ANL-08-047-AFCI-CTH; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Objectives include development and deployment of software on DOE's large parallel computing platforms, and demonstration of the capabilities of the software in predicting coolant flow through comparison with previously collected laboratory data.; Application: The aim is to provide analysis and design tools for next generation reactors.; Degree of Completion: 20%; Organization Activities: Organization: ANL Brief Description: This scope of this project is to develop modern tools for the simulation of coolant flow for future reactors. The work involves development of computer-based descriptions (computational grids) of reactor subassemblies, numerically solving the Navier-Stokes and convection-diffusion equations on these grids, analyzing the results, and comparing with existing experimental data on heat transfer.;		DOE-1122 (original reference DOE-9-1305)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
46	USA-18-67, USA-18-69, USA-18-70	Reactors	Oak Ridge National Laboratory One Bethel Valley Road Oak Ridge, TN 37831 Bldg: 5700; Room: R115;	Title: AFCI Support to TVA's Development of Advanced Fuel Cycle Demonstration; ID: ORNL-NE-001; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Provide technical support to the Tennesse Valley Authority in the evaluation of options for demonstration of a closed fuel cycle.; Application: Reactor analysis.; Degree of Completion: 10%; Organization Activities: Organization: Nuclear Science & Technology Division Brief Description: ORNL is providing support to the Tennessee Valley Authority in the investigation and evaluation of a demonstration of a closed, advanced fuel cycle demonstration. Areas included are review of reactor, fuels and reprocessing technologies, schedule planning, and economic evaluations.;		DOE-1124: (original reference DOE-9-1302,1304,1305) Additional fuel cycle stages: Reprocessing of Nuclear Fuel

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
47	USA-18-69, USA-18-70, USA-2-88, USA-2-98	Reactors	Oak Ridge National Laboratory One Bethel Valley Road Oak Ridge, TN 37831 Bldg: 5700; Room: R115, O309, J305, N219;	Title: Advanced Fuel Cycle Initiative - AFCI Systems Analysis; ID: ORNL-NE-002; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Actinide burning analysis.; Application: Fuel cycle systems analysis.; Degree of Completion: 50%; Foreign Collaboration: Canada (CN) Atomic Energy Canada Limited (AECL) Chalk River, Canada Analysis of closed fuel cycle with CANDU reactors. Organization Activities: Organization: Nuclear Science & Technolgy Division Brief Description: ORNL is performing analysis of actinide burning in Pressurized Water Reactors and CANDU reactors in collaboration with the AECL. In addition, the activity includes economic analysis of advanced fuel cycles.;		DOE-1125: (original refernce DOE-9-1304,1305 and 1-1183, 1195) Additional fuel cycle stages: Reprocessing of Nuclear Fuel

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
48	USA -2-116	Reactors	Oak Ridge National Laboratory One Bethel Valley Road Oak Ridge, TN 37831 Bldg: 5700; Room: H325;	Title: ORNL Support to SNL Lab Directed R&D on Fast Reactor Severe Accident Modeling; ID: ORNL-NE-003; State Relationship: Performed on a DOE location; Objectives: Develop a reactor core simulator for Sandia National Laboratory.; Application: Severe accident simulation.; Degree of Completion: 40%; Organization Activities: Organization: Nuclear Science & Technology Division Brief Description: This project is supporting a Sandia Lab Directed Research and Development project to develop a new fast reactor severe accident simulator; the Oak Ridge National Laboratory work involves the development of a reactor core neutronics solver.;		DOE-1127 (ORIGINAL REFERENCE DOE-1-1283)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
49	USA-18-63, USA-18-64	Nuclear fuel fabrication	Oak Ridge National Laboratory One Bethel Valley Road Oak Ridge, TN 37831 Bldg: 4500S; Room: D060; Activities: Program Management;	Title: NGNP Materials Development Program; ID: ORNL-NE-006; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Develop and qualify materials for the NGNP.; Application: Deploy NGNP in the United States; Degree of Completion: 20%; Organization Activities: Organization: Nuclear Science and Technology Division - Nuclear Technology Program Office Brief Description: Develop and qualify materials for the next generation nuclear power plant (NGNP). Initial task included materials survey for the very high temperature reactor, the supercritical water reactor and the gas-cooled fast reactor. Follow-on tasks include developing database for high temperature materials service, assessing and further developing microstructural models and analysis techniques, developing high-temperature design methodologies, and performing R&D systems specific materials including energy conversion.;		DOE-1130: (ORIGINAL REFERENCE DOE-9-1298,1299) Additional fuel cycle stages: Reactors

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
50	USA-18-62	Reactors	Oak Ridge National Laboratory One Bethel Valley Road Oak Ridge, TN 37831 Bldg: 4500S; Room: B-158;	Title: Light Water Reactor Sustainability Program (LWRSP); ID: ORNL-NE-007; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Define the necessary research and development (R&D) actions to ensure that the long-term operation of existing light water reactors (LWRs) will continue as a safe and economically viable option for domestic power production.; Application: Light Water Reactors; Degree of Completion: 10%; Organization Activities: Organization: Nuclear Materials Science and Technology Brief Description: Oak Ridge National Laboratory leads the Materials Aging and Degradation Pathway in the LWRSP program. This effort seeks to provide mechanistic information on materials degradation that might be expected for reactor lifetimes beyond 60 years. Materials issues include reactor pressure vessels, core internals, concrete, cabling, and buried piping. Collaborations are being formed with the Electric Power Research Institute (EPRI), the Nuclear Regulatory Commission (NRC), and nuclear reactor vendors and utilities.;		DOE-1131 (ORIGINAL REFERENCE DOE-9-1297)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
51	USA-18-5	Nuclear fuel fabrication	Oak Ridge National Laboratory One Bethel Valley Road Oak Ridge, TN 37831 Bldg: 5300; Room: N4217; Activities: Analysis and Russian subcontract management;	Title: Implementation of Plutonium Disposition in BN-600 and BN-800 Reactors in Russia; ID: ORNL-DN-002; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Specific objectives currently under negotiation between governments of U.S.A. and RF will be set in the amended PMDA.; Application: Implement the Plutonium Disposition Program for disposition of surplus weapons-grade plutonium in the existing and under-construction BN-600 and BN-800 reactor units at the Beloyarsk Nuclear Power Plant, in accordance with the Plutonium Management and Disposition Agreement (PMDA), as amended.; Degree of Completion: 10%; Foreign Collaboration: Russia (Z) OAO AtomEnergoProm Moscow ORNL works with this holding company, a subsidiary of State Corporation Rosatom, to implement the overall program. Russia (Z) OAO TVEL Moscow ORNL works with TVEL, a subsidiary of AtomEnergoProm, on all aspects of fuel and blanket component supply.		DOE-1132: Work performed under the US-Russian Agreement Concerning the Management and Disposition of Plutonium Designated as No Longer Required for Defense Purposes and related Cooperation Additional fuel cycle stages: Reactors (ORIGINAL REFERENCE DOE 9-1221)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				Russia (Z) OAO EnergoAtom Moscow ORNL works with the utility EnergoAtom, a subsidiary of AtomEnergoProm, on all reactor aspects of the program. Russia (Z) OAO Institute of Physics and Power Engineering Obninsk ORNL works with IPPE, the chief scientific advisor for fast-neutron-type reactors, on general issues of reactor safety. Russia (Z) OAO Beloyarsk Nuclear Power Plant Zarechniy ORNL works with BNPP to implement specific modifications to the reactor related to blanket replacement and plutonium disposition. Russia (Z) OAO Research Institute of Atomic Reactors Dimitrovgrad ORNL works with NIIAR to implement fuel fabrication using their vipac technology. Russia (Z) OAO Experimental Design Bureau of Machine Building Nizhniy Novgorod ORNL works with OKBM, chief designer of the BN-600 and BN-800, on aspects of reactor design and modifications related to plutonium disposition.		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				Russia (Z) OAO Machine Building Plant Elektrostal ORNL works with MSZ on supply of nonbreeding blanket components to support the removal/replacement of the BN-600 radial blanket. Organization Activities: Organization: Division - Global Nuclear Security Technology Division Brief Description: ORNL provides technical and financial support to the shown Russian organizations and types of work indicated in the shown "Involvement" field.;		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
52		Nuclear fuel fabrication	Oak Ridge National Laboratory One Bethel Valley Road Oak Ridge, TN 37831 Bldg: 5300; Room: N4217; Activities: Analysis and Russian subcontract management;	Title: Assessment of the Radkowsky Thorium Plutonium Incinerator; ID: ORNL-DN-003; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Monitor progress at the Kurchatov Institute, and revise/defend the high-level assessment report prepared previously for NNSA to submit to Congress.; Application: Provide an assessment for Congress to determine whether the RTPI can provide a viable alternative to the baseline MOX program for Russian weapons plutonium disposition.; Degree of Completion: 70%; Foreign Collaboration: Russia (Z) Kurchatov Institute Moscow, Russia Subcontracted by ORNL (UT-Battelle LLC) to provide data to be assessed Organization Activities: Organization: Nuclear Science and Technology Division - Nuclear Security Technologies Brief Description: ORNL provides technical and financial support to the Kurchatov Institute via subcontract to document the technical bases for the design and qualification of the plutonium seed fuel and thorium-uranium blanket fuel to be used in the proposed VVER-1000 version of the Radkowsky Thorium Plutonium Incinerator (RTPI). ORNL prepares technical statements of work,		DOE-1133: Work performed under the US-Russian Agreement Concerning the Management and Disposition of Plutonium Designated as No Longer Required for Defense Purposes and Related Cooperation. Additional fuel cycle stages: Reactors

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				performs technical reviews of all deliverables, and, as appropriate, performs independent analyses to verify the KI results. ORNL also funds Westinghouse Electric Company for an independent technical review of deliverables.;		
53	USA-18-62	Reactors	Oak Ridge National Laboratory One Bethel Valley Road Oak Ridge, TN 37831 Bldg: 5700; Room: N323, N327, H334;	Title: SCALE Nuclear Analysis Codes and Support for Reactor Safety; ID: ORNL-WO-001; State Relationship: Performed on a DOE location; Objectives: The objective of this work is to develop nuclear analysis capabilities for new and existing reactors by providing and applying independent tools for nuclear analysis and associated validation assessment.; Application: Reactor safety analysis for NRC review and licensing.; Degree of Completion: 50%; Organization Activities: Organization: Nuclear Science & Technology Division Brief Description: Oak Ridge National Laboratory (ORNL) provides research and development on reactor core physics and computational methods to support the safety analysis licensing activities for the U.S. Nuclear Regulatory Commission (NRC) for Light Water Reactors (LWRs).;		DOE - 1134 (ORIGINAL REFERNCE DOE-9-1297)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
54	USA-18-62	Reactors	Oak Ridge National Laboratory One Bethel Valley Road Oak Ridge, TN 37831 Bldg: 5700; Room: N323, N327;	Title: Nuclear Analysis for Advanced Non Light Water Reactor Systems; ID: ORNL-WO-002; State Relationship: Performed on a DOE location; Objectives: The objective of the work is to develop nuclear analysis capabilities non-LWRs and their fuel cycles by providing and applying independent tools for nuclear analysis and associated validation assessment.; Application: Reactor safety analysis for NRC review and licensing.; Degree of Completion: 50%; Organization Activities: Organization: Nuclear Science & Technology Division Brief Description: Oak Ridge National Laboratory (ORNL) provides research and development on reactor core physics and computational methods to support the safety analysis licensing activities for the U.S. Nuclear Regulatory Commission (NRC) for non Light Water Reactors (non-LWR)s.;		DOE-1135 (ORIGINAL REFERNCE DOE-9-1297)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
55	USA-18-70	Reactors	Oak Ridge National Laboratory One Bethel Valley Road Oak Ridge, TN 37831 Bldg: 4500S; Room: B148;	Title: Advanced Fuel Cycle Initiative - Advanced Structural Materials; ID: ORNL-NE-008; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Develop advanced structural materials.; Application: High temperature reactors.; Degree of Completion: 20%; Organization Activities: Organization: Nuclear Materials Science & Technology Brief Description: ORNL leads the Advanced Structural Materials development effort as part of the Advanced Fuel Cycle Initiative. The goals of this national effort include developing and qualifying advanced structural materials that will enable improved fast reactor performance and economics.;		DOE-1137 (ORIGINAL REFERENCE DOE-9-1305)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
56	USA-18-62	Reactors	Oak Ridge National Laboratory One Bethel Valley Road Oak Ridge, TN 37831 Bldg: 5700; Room: N321-A; Activities: Analyses and assessments.;	Title: High Burnup Source Term for Spent Fuel Storage; ID: ORNL-WO-004; State Relationship: Performed on a DOE location; Objectives: The objective of this project is to extend the applicable range of the Nuclear Regulatory Commission (NRC) Decay Heat Regulatory Guide 3.54 to include high burnup spent nuclear fuel. The accuracy and uncertainty of decay heat predictions in the regime will be further quantified through the analysis and evaluation of new decay heat measurements for modern assembly designs exposed to high burnup. This is currently a continuing project supporting NRC. Also to expand NRC technical basis for burnup credit.; Application: Revisions of NRC Decay Heat Regulatory Guide 3.54. Also to expand NRC technical basis for burnup credit.; Degree of Completion: 90%; Organization Activities: Organization: Nuclear Science and Technology Division - Nuclear Technology Program Office Brief Description: Extend the range of NRC Decay Heat Regulatory Guide 3.54 to include high burnup spent nuclear fuel and expand NRC technical basis for burnup credit.;		DOE-1138 (ORIGINAL REFERNCE DOE-9-1297)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
57	USA-18-64, USA-2-106	Reactors	Oak Ridge National Laboratory One Bethel Valley Rd. Oak Ridge, TN 37831 Bldg: 4508; Room: Labs 139 and 244;	Title: NGNP Graphite Program; ID: ORNL-NE-009; State Relationship: Funded by DOE and performed on a DOE location; Objectives: To develop design data for the NGNP.; Application: Next Generation Nuclear Plant; Degree of Completion: 20%; Foreign Collaboration: France (F) Very High Temperature Reactor France Develop design data for NGNP. *EURATOM* (W) Very High Temperature Reactor Europe (European Union) Develop design data for the NGNP. South Africa (AZ) Very High Temperature Reactor Republic of South Africa Develop design data for the NGNP. Japan (J) Very High Temperature Reactor		DOE-1139: Includes GEN IV nations involved in VHTR. (ORIGINAL REFERENCE DOE-9-1299 AND 1-1203)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				Japan Develop design data for the NGNP. Korea, Republic of (KO) Very High Temperature Reactor South Korea Develop design data for the NGNP. China, People's Republic of (X) Very High Temperature Reactor China Develop design data for the NGNP. Organization Activities: Organization: Materials Science & Technology Division Brief Description: Nuclear grade graphites that are candidates for the core structures of the Next Generation Nuclear Plant (NGNP) are being characterized. This research includes the determination of the physical, chemical, and mechanical properties. Moreover, the effects of reactor environment of these properties are being determined, including the effects of temperature, neutron damage, and thermal oxidation. Materials behavioral models that describe these effects are being developed in parallel with the experimental activities.;		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
58	USA-18-68, USA-18-69, USA-2-80, USA-2-88	Reprocessing of nuclear fuel	Oak Ridge National Laboratory One Bethel Valley Road Oak Ridge, TN 37831 Bldg: 4500N; Room: A28;	Title: AFCI Modeling & Simulation Support - ORNL; ID: ORNL-NE-010; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Develop modeling and simulation tools.; Application: Support development of reprocessing.; Degree of Completion: 10%; Organization Activities: Organization: Nuclear Science & Technology Division Brief Description: The overall objective is the development of an integrated modeling and simulation strategy for separations and safeguards. This activity is aimed at generating recommendations for model-development and code efforts and supporting small-scale experimentation that may be used to by the Nuclear Energy Advanced Modeling and Simulation program to develop the initial path forward for Separations and Safeguards integrated code development and validation.;		DOE-1140: (ORIGINAL REFERENCE DOE -9-1303,1304 AND 1-1171, 1183) Additional fuel cycle stages: Processing of Intermediate or High-Level Waste

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
59	USA-18-64	Reactors	Oak Ridge National Laboratory One Bethel Valley Road Oak Ridge, TN 37831 Bldg: 5700; Room: N327;	Title: Adaptation of the SHARP Modeling & Simulation Capabilities for VHTR Development & Design; ID: ORNL-NE-012; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Establish improved computational modelling capability.; Application: Next Generation Nuclear Plant (NGNP) analysis.; Degree of Completion: 10%; Organization Activities: Organization: Nuclear Science & Technology Division Brief Description: The main objectives of this proposed project are to adapt and apply the SHARP high performance computing code system for high-fidelity, spatially detailed analysis of the coupled neutronic and thermo-fluid behavior of the prismatic Very High Temperature Reactor(VHTR). ORNL will perform the lattice physics calculations, and Argonne National Lab is performing the full core calculations.;		DOE-1143 (ORIGINAL REFERENCE DOE -9-1299)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
60	USA-18-4	Nuclear fuel fabrication	Oak Ridge National Laboratory One Bethel Valley Road Oak Ridge, TN 37831 Bldg: 3500; Room: C-008; Activities: Assessment of Russian design and technology developments for plutonium disposition using GT-MHR;	Title: Support development of Pu-burning Gas-Turbine Modular Helium Reactor (GT-MHR); ID: ORNL-DN-004; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Develop the design of a Russian GT-MHR for disposition of excess weapons-grade Pu.; Application: Provision of additional disposition capacity.; Degree of Completion: 20%; Foreign Collaboration: Russia (Z) Experimental Design Bureau of Mechanical Engineeri OKBM: Nizhny Novgorod, Russia VNIINM: Moscow, Rus OKBM: Chief designer of Russian GT-MHR under subcontract to the NNSA Service Center in Albuquerque. VNIINM: Development of Pu-fuel fabrication technology and facility. Kurchatov Institute: Support development of GT-MHR technology. Organization Activities: Organization: Nuclear Science and Technology Division - Nuclear Security Technologies Brief Description: ORNL provides technical support to NA-26 and General		DOE-1144: Work performed under the US-Russian Agreement Concerning the Management and Disposition of Plutonium Designated as No Longer Required for Defense Purposes and Related Cooperation. Additional fuel cycle stages: Reactors (ORIGINAL REFERENCE DOE 9-1220)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				Atomics in the assessment and evaluation of the OKBM-led team (including VNIINM and Kurchatov) performing supporting technology development that would lead to the design of a Russian Pu-burning GT-MHR. The primary effort is review of Russian technical deliverables and assistance in design of test facilities, including providing training at ORNL facilities.;		
61	USA-18-70	Reactors	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-00, Building 1325; Room: 201;	Title: Advanced Alloy Development; ID: AFCI Advanced Alloys; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Provide technical review and recommendations of structual materials research and development using experimental data and documents.; Application: Optimization of thermo-mechanical treatments of alloys.; Degree of Completion: 10%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Development of advanced structural materials.;		DOE-1145 (ORIGINAL REFERENCE DOE-9-1305)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
62	USA-18-67	Nuclear fuel fabrication	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-3, 1698; Room: C222;	Title: Advanced Fuel Forms with Tailored Microstructures; ID: LDRD Advanced Fuel Forms; State Relationship: Performed on a DOE location; Objectives: Develop fuels that can ease the complexities associated with spent fuel chemical separations processes.; Application: Nuclear fuels.; Degree of Completion: 30%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Develop advanced fuel forms with microstructures tailored to naturally induce fission poduct separation during service.;		DOE-1146 ORIGINAL REFERENCE DOE-9-1302)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
63	USA-18-70	Reactors	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-00, Bldg 1325; Room: 201;	Title: Nuclear Data Evaluations; ID: AFCI Advanced Nuclear Data Modeling; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Generate and compile data for key advanced recycle reactor isotopes for uncertainty reduction and prioritization of data needs.; Application: Reactor design.; Degree of Completion: 10%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Develop advanced nuclear data modeling and evaluated nuclear data libraries for the AFCI.;		DOE-1147 (ORIGINAL REFERENCE DOE-9-1305)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
64	USA-18-67	Nuclear fuel fabrication	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-00, Building 1325; Room: 201;	Title: Fuel Performance Modeling; ID: AFCI Fuels Modeling; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Develop multi-scale performance models of nuclear reactor fuels.; Application: Nuclear reactor fuel development.; Degree of Completion: 10%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Computer-based modeling of fuel performance, including code development.;		DOE-1148 (ORIGINAL REFERENCE DOE-9-1302)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
65	USA-18-70	Reactors	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-53, Bldg 7, ER-1; Room: Room FP-05; Bldg: TA-53, Bldg 30, ER-2; Room: FP-14, DANCE; Bldg: TA-53, Bldg. 29; Room: Target 4 with 3 flight paths: FP-60R Genie; FP-30R; and FP-15R Gen neutron experiment;	Title: Transmutation cross section experiments; ID: AFCI Nuclear Data; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Develop precision data for advanced civilian nuclear reactor design.; Application: Reactor design.; Degree of Completion: 20%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Experimental activity to develop advanced neutron measurement techniques and generate data for cross section calculations.;		DOE-1149 (ORIGINAL REFERENCE DOE-9-1305)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
66	USA-18-65	Reactors	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-53, Bldg 18; Room: Rooms 131A and 134;	Title: Lead-Cooled Fast Reactor Materials; ID: Gen IV Lead-Cooled;. State Relationship: Funded by DOE and performed on a DOE location; Objectives: Development of corrosion resistant steels.; Application: Lead-cooled fast reactor design.; Degree of Completion: 40%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Studies of structural and cladding material behavior for lead-cooled reactors.;		DOE-1150 (ORIGINAL REFERENCE DOE-9-1300)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
67	USA-18-63	Nuclear fuel fabrication	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-00, Building 1325; Room: 201;	Title: Deep Burn Development; ID: Gen IV Deep Burn; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Model nuclear fuel for a high-temperature gas reactor.; Application: Nuclear reactor fuel development.; Degree of Completion: 20%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Nuclear fuel modeling.;		DOE-1151 (ORIGINAL REFERENCE DOE-9-1298)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
68	USA-2-41, USA-18-70	Reactors	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-00, Building 1325; Room: 201;	Title: Sodium-Cooled Fast Reactor Materials; ID: Gen IV Sodium -Cooled Reactor; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Development of radiation tolerant structurals materials.; Application: Sodium-cooled fast reactor design.; Degree of Completion: 40%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Studies of materials issues associated with use of carbon dioxide as the secondary working medium in a Brayton Cycle for power generation.;		DOE-1152 (ORIGINAL REFERENCE DOE-9-1305 AND 1-1118)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
69	USA-18-64	Reactors	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-53, Bldg 18; Room: Room 1;	Title: Very High Temperature Gas Cooled Reactor Materials; ID: Gen IV VHTR; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Materials testing.; Application: Very high temperature gas cooled reactor design.; Degree of Completion: 40%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Studies of materials issues associated with use of gas-cooled reactor helium at a very high temperature.;		DOE-1153 ORIGINAL REFERENCE DOE-9-1299)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
70	USA-18-61	Reactors	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-00, Building 1325; Room: 201;	Title: Hyperion Reactor Evaluation and Technical Assistance; ID: Hyperion; State Relationship: Performed on a DOE location; Objectives: Develop a model to simulate the dynamics of fuel for a small reactor design and perform technical assessment of the Hyperion Reactor concept.; Application: Small reactor design.; Degree of Completion: 40%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Evaluation of nuclear reactor concept.;		DOE-1154 (ORIGINAL REFERENCE DOE-9-1294)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
71	USA-18-67	Nuclear fuel fabrication	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-00, Building 1325; Room: 201;	Title: Improved Processing and Fabrication of ODS Steels; ID: AFCI ODS Steels; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Improved processing and fabrication of advanced, radiation-tolerant ODS steels.; Application: Development of radiation hard structural materials.; Degree of Completion: 10%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Fabrication and characterization of structural materials.;		DOE-1155: Materials development for cladding and duct applications. (ORIGINAL REFERENCE DOE-9-1302)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
72	USA-18-62, USA-18-67	Reactors	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-3, Bldg 32; Room: B6, B12, B13,B14; Bldg: TA-3, Bldg 1420; Room: 1206,1217; Bldg: TA-3, 1698; Room: C-118;	Title: Enhance Radiation Damage Resistance Via Manipulation of the Properties of Nanoscale Materials; ID: LDRD Enhanced Radiation Resistance; State Relationship: Performed on a DOE location; Objectives: Develop materials that contain internal features for attracting, absorbing, and annihilating radiation-induced defects.; Application: Advanced materials for future nuclear reactors.; Degree of Completion: 10%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Manipulate nanoscale material proporties to enhance radiation damage resistance.;		DOE-1156 (ORIGINAL REFERENCE DOE-9-1297,1302)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
73		Nuclear fuel fabrication	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-00, Building 1325; Room: 201;	Title: Simulation of Metal Fuel Casting for Process Development; ID: AFCI Fuel Casting Modeling; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Optimization of casting furnace design.; Application: Nuclear reactor fuel development.; Degree of Completion: 10%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Computer-based modeling of metal fuel casting.;		DOE-1157

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
74	USA-18-62, USA-18-70	Reactors	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-00, Building 1325; Room: 201;	Title: Modeling Creep of Core Reactor Clad and Duct Components; ID: AFCI Modeling Creep; State Relationship: Funded by DOE and performed on a DOE location; Objectives: A "mechansim based" creep model of cladding and duct materials (FeCr steel) subjected to in-service reactor conditions.; Application: Nuclear power reactors.; Degree of Completion: 10%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Modeling to predict the performance of structural materials subjected to irradiation, stress, and temperature.;		DOE-1158 (ORIGINAL REFERENCE DOE-9-1297,1305)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
75	USA-18-62	Reactors	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-00, Building 1325; Room: 201;	Title: PWR Severe Accident Models; ID: NRC PWR; State Relationship: Performed on a DOE location; Objectives: Perform modern consequence calculations for current US nuclear reactor fleet.; Application: Estimations of source terms as a part of the NRC Program "State of the Art Reactor Consequence".; Degree of Completion: 80%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Accident consequence calcuations.;		DOE-1159 (ORIGINAL REFERENCE DOE-91297)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
76	USA-18-67	Nuclear fuel fabrication	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-00, Building 1325; Room: 201;	Title: Oxide Fuel Development; ID: AFCI- Oxide Fuel; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Development of techniques for accurate oxide to metal ratio control in nuclear fuels using surrogate materials.; Application: Advanced nuclear fuel development.; Degree of Completion: 10%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Oxide fuel development.;		DOE-1160 (ORIGINAL REFERENCE DOE-9-1302)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
77	USA-18-68, USA-18-69, USA-2-80	Reprocessing of nuclear fuel	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-00, Building 1325; Room: 201;	Title: Tc Separation and Conversion; ID: AFCI Tc; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Development of a disposal form for Tc.; Application: Recycle of nuclear fuel.; Degree of Completion: 10%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Tc separation and conversion.;		DOE-1162 (ORIGINAL REFERENCE DOE-9-1303,1304 AND 1-1171)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
78	USA-18-70	Reactors	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-00, Building 1325; Room: 201;	Title: Verification and Validation, Uncertainty Quantification, and Licensing; ID: AFCI Verification and Validation; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Development of uncertainty quantification methods for performing licensing calculations for advanced burner reactors.; Application: Licensing of advanced reactors.; Degree of Completion: 10%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Methods development.;		DOE-1163 ORIGINAL REFERENCE DOE-9-1305)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
79	USA-18-67	Nuclear fuel fabrication	Pacific Northwest National Laboratory 902 Battelle Blvd. Richland, WA 99352 Bldg: APEL; Room: High Bay Lab; SubArea: Friction Stir Welder (north wall); Bldg: ETB; Room: 1103; SubArea: Table 1; Bldg: 326 Building; Room: 6A; SubArea: Instron Test Frame (east wall);	Title: Modeling and Testing for Accelerated Fuel Qualification of New Fuel Types; ID: PNNL-SNPI-AQUAL-001; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Reduce time and cost for qualification of fuel design changes and new fuel concepts.; Application: Reduce qualification time and cost for new fuel types.; Degree of Completion: 30%; Organization Activities: Organization: PNNL Brief Description: Develop advanced material science test methods, tools and computational models to accelerate fuel qualification efforts.;		DOE-1170 (ORIGINAL REFERENCE DOE-9-1302)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
80	USA-18-68, USA-2-24, USA-2-25, USA-2-58, USA-2-77	Processing of waste	Brookhaven National Laboratory Brookhaven National Laboratory P.O. Box 5000 Upton, NY 11973 Bldg: Bld. 555; Room: Rm. 161, 165, 167;	Title: Tc(VII) Separations and electrochemical deposition in Ionic Liquids; ID: BNL-FY08-BES-001; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Recovery of technetium metal; Application: Create a waste form for disposal for the technetium.; Degree of Completion: 10%; Organization Activities: Organization: Chemistry Dept. of BNL Brief Description: Using ionic liquids to extract pertechnetate from nuclear waste and convert the pertechnetate to technetium metal.;		DOE-1171 (ORIGINAL REFERENCE DOE-9-1303 AND 1-1101,1102,1140, 1162)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
81	USA-18-6, USA-18-9, USA-18-11	Reactors	Brookhaven National Laboratory Brookhaven National Laboratory P.O.Box 5000 Upton, NY 11973 Upton, NY 11973 Bldg: Bld. 197D; Room: NNDC Conf. Rm.;	Title: National Nuclear Data Center; ID: BNL-FY08-EST-001; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Maintain a database for nuclear interactions to be used by the world wide scientific community.; Application: Cross section technology is used throughout the nuclear fuel cycle; Degree of Completion: 50%; Organization Activities: Organization: National Nuclear Data Center Brief Description: Consolidates, reviews and calculates nuclear cross section data, including cross section data on nuclear criticality safety.;		DOE-1173: (ORIGINAL REFERENCE DOE-99-1222,1226,1230) Additional fuel cycle stages: Critical Facilities, Reprocessing of Nuclear Fuel, Processing of Intermediate or High-Level Waste

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
82	USA-18-65, USA-18-67	Reactors	Brookhaven National Laboratory Brookhaven National Laboratory P.O. Box 5000 Upton, NY 11973 Upton, NY 11973 Bldg: 130; Room: Conf. Rm.;	Title: Novel Processing of Unique Ceramic-Based Nuclear Materials and Fuels; ID: BNL-FY08-EST-002; State Relationship: Funded by DOE and performed on a DOE location; Objectives: To develop an improved ceramic-based nuclear fuel in co-operation with the State University of New York at Stony Brook.; Application: Gas cooled fast nuclear reactors; Degree of Completion: 90%; Organization Activities: Organization: Energy Sciences and Technology Dept. of BNL Brief Description: Carry out nuclear transport analysis with a ceramic-based fuel form to establish nuclear characteristics and potential fuel element configurations in order to determine a reactor core design and operational conditions.;		DOE-1174 (ORIGINAL REFERENCE DOE-9-1300,1302)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
83	USA-18-70	Nuclear fuel fabrication	Brookhaven National Laboratory Brookhaven National Laboratory P.O. Box 5000 Upton, NY 11973 Upton, NY 11973 Bldg: 130; Room: Conf. Rm.;	Title: Human Factors Engineering Support to the NRC; ID: BNL-FY08-WFO-001; State Relationship: Performed on a DOE location; Objectives: Supply the USNRC with subject matter expertise in the area of Human Factors Engineering.; Application: Research in support of the regulation of primarily US nuclear reactors (future and present).; Degree of Completion: 20%; Organization Activities: Organization: Energy Science and Technology Dept. of BNL Brief Description: R&D is performed in the technical discipline (Human Factors Engineering) for the USNRC: 1 develop the technical basis for information and control requirements for advanced reactors' operation under degraded Instrumentation and Control conditions, and develop the technical basis to support the certification activities involving variable levels of automation 2 determine the acceptable credit for operator action in nuclear power plant operations 3 determine if there are any gaps in the current HFA and HFE regulatory guidance that would limit the ability of the NRC to perform safety reviews of the Evolutionary Power Reactors. 4 conduct a HFE technical review of the MOX fuel facility.;		DOE-1176: (ORIGINAL REFERENCE DOE-9-1305) Additional fuel cycle stages: Reactors

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
84	USA-18-62	Reactors	Brookhaven National Laboratory Brookhaven National Laboratory P.O. Box 5000 Upton, NY 11973 Upton, NY 11973 Bldg: 130; Room: Conf. Rm.;	Title: Reactor Analysis in Support of the NIST Research Reactor; ID: BNL-FY08-WFO-002; State Relationship: Performed on a DOE location; Objectives: Upgrade the National Bureau of Standard's reactor. This includes the control room and other neutronic and thermal-hyraulic calculations.; Application: National Institute of Standard's NIST reactor.; Degree of Completion: 30%; Organization Activities: Organization: Energy Science and Technology Dept. of BNL Brief Description: Develop neutronic and thermal-hydraulic models for the NIST (National Institute of Standards and Technology) reactor and perform analysis of related safety and fuel management as well as the effect of conversion from HEU to LEU. Develop a detailed upgrade plan for the control room and implement the plan.;		DOE-1177: This activity is in support of upgrades to the National Bureau of Standards reactor. (ORIGINAL REFERENCE DOE-9-1297)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
85	USA-18-62	Reactors	Brookhaven National Laboratory Brookhaven National Laboratory P.O. Box 5000 Upton, NY 11973 Upton, NY 11973 Bldg: 130; Room: Conf. Rm.;	Title: Structual Mechanics Support to the US NRC; ID: BNL-FY08-WFO-004; State Relationship: Performed on a DOE location; Objectives: To assist the USNRC as subject matter experts in the area of mechanics.; Application: Research in support of the regulation of primarily US nuclear reactors Item 4 has application to IAEA member states; Degree of Completion: 20%; Foreign Collaboration: Japan (J) Japan Nuclear Energy Safety Organization Tokyo, Japan Japan Nuclear Energy Safety Organization/ involved with item one in the description and specifically on seismic tests and analysis of several systems Organization Activities: Organization: Energy Science and Technology Dept. of BNL Brief Description: R&D is performed in the technical discipline (mechanics) for the USNRC: 1 dynamic loads impact on Light Water Reactors 2 soil-structure interaction model enhancements to the CARES (Computer Analysis for Rapid Evaluation of Structures) 3 investigating the applicability of existing seismic soil-structure interaction		DOE-1179 (ORIGINAL REFERENCE DOE-9-1297)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				computer codes to embedded or buried structures 4 assist IAEA member states in evaluation techniques for seismic hazards to nuclear facilities and implememtation of upgrades;		
86		Reactors	Brookhaven National Laboratory Brookhaven National Laboratory P.O. Box 5000 Upton, NY 11973 Upton, NY 11973 Bldg: 130; Room: Conf. Rm.;	Title: Development of Seismic Capability Evaluation Technology for Degraded Structures and Compnents; ID: BNL-FY08-WFO-006; State Relationship: Performed on a DOE location; Objectives: Development of Seismic Capability Evaluation Technology for degraded structures and components.; Application: Improve the safety of nuclear power plants.; Degree of Completion: 20%; Foreign Collaboration: Korea, Republic of (KO) KAERI Daejeon, Korea KAERI supplies funding to BNL Organization Activities: Organization: Energy Science and Technology Dept. of BNL Brief Description: A collaboration with KAERI to assist in developing seismic capability evaluation technology for degraded structures and components.;		DOE-1181: This work involves work sponsored by the Korea Atomic Energy Research Institute

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
87	USA-18-62	Nuclear fuel fabrication	Brookhaven National Laboratory Brookhaven National Laboratory P.O. Box 5000 Upton, NY 11973 Upton, NY 11973 Bldg: 130; Room: Conf. Rm.;	Title: Office of Nuclear Regulatory Research (Risk Assessment); ID: BNL-FY08-WFO-007; State Relationship: Performed on a DOE location; Objectives: Employ the methodology of Probabilistic Risk Assessment to reactors and other facilities in the nuclear fuel cycle. Most activities are involved with safety analysis.; Application: Research in support of the regulation of primarily US nuclear facilities (present and future).; Degree of Completion: 70%; Organization Activities: Organization: Energy Sciences and Technology Dept. of BNL Brief Description: R&D is performed in the technical discipline (risk assessment) for the Office of Research of USNRC: 1 development of a probabilistic safety analysis standard for nuclear power plants during low power & shutdown states 2 examine the analysis of innovative digital systems using Probabilistic Risk Assessment(PRA), & suggest improvements 3 develop risk informed regulatory decision-making criteria for advanced reactors including 10CFR 50 rules considerations 4 review for acceptability PRA methodologies and standards for PRA quality. 5 apply PRA to MOX facility events.;		DOE-1182: (ORIGINAL REFERENCE DOE9-1297) Additional fuel cycle stages: Reactors

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
88	USA-18-68, USA-2-24, USA-2-58, USA-2-125, USA-2-47	Processing of waste	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: MFC-787 (FASB); Room: West Lab 102; SubArea: Small RERTR Glove Box;	Title: Development of Metal Alloy Waste Forms to Immobilize Technicium; ID: INL-08-AFCI-AWFD; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Immobilize Technicium in waste forms for disposal.; Application: Devalop a means of removing targeted fission products for disposal in metallic waste forms.; Degree of Completion: 30%; Organization Activities: Organization: Nuclear Science & Technology Brief Description: Develop Metal Alloy Waste Forms to Immobilize Technicium.;		DOE-1183 (ORIGINAL REFERENCE DOE-9-1303 AND 1-1101,1140,1293, 1125)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
89	USA-18-67, USA-18-70	Nuclear fuel fabrication	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: IF-654 (EROB); Room: Conference Room 159;	Title: Evaluation of Fuel Performance Models for Coupling; ID: INL-08-AFCI-CFPC; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Determine if legacy performance models can be extended to 2 and 3 dimensional calculations.; Application: Address integrated performance and safety code needs for fuel performance models.; Degree of Completion: 10%; Organization Activities: Organization: Nuclear Science & Technology Brief Description: Evaluate feasibility of coupling fuel performance models.;		DOE-1185: (ORIGINAL REFERENCE DOE-9-1302,1305) Additional fuel cycle stages: Reactors

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
90	USA-18-68	Processing of waste	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: MFC-768; Room: 23E; SubArea: Org. C420 Lab Space; Bldg: MFC-789; Room: 102A; Bldg: MFC-772; Room: 201; SubArea: Glovebox 0; Bldg: MFC-752; Room: L&O Conference Room;	Title: Production Processes for High-Level and Ceramic Waste Forms from Sodium Bonded Metal Fuel Treatment; ID: INL-08-AFCI-CWP; State Relationship: Funded by DOE and performed on a DOE location; Objectives: The objective of this activity is to produce the ceramic waste form in a size that provides efficient loading of the standard canisters designed for use in the geological repository.; Application: Disposal of high-level wastes resulting from the treatment of sodium-bonded spent fuel.; Degree of Completion: 80%; Organization Activities: Organization: Nuclear Science and Technology Brief Description: This activity involves engineering and testing to support development of ceramic waste form production processes. The ceramic waste form was developed to allow disposal of salts containing fission products and transuranics in a geological repository. These salts result from the treatment of sodium-bonded spent fuel from the EBR-II and FFTF test reactors using molten salt electrorefining.;		DOE-1186 (ORIGINAL REFERENCE DOE-9-1303)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
91	USA-18-67	Nuclear fuel fabrication	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: MFC-704; Room: Room 10;	Title: Nuclear Oxide Fuel Fabrication Employing the Spark Plasma Sintering Method; ID: INL-08-AFCI-FSPS; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Optimize the microstructure and material properties while exploring a new fuel fabrication technique.; Application: Fabrication of nuclear fuels.; Degree of Completion: 10%; Organization Activities: Organization: Nuclear Science & Technology Brief Description: Investigate field activated consolidation utilizing spark plasma sintering of fuel surrogates.;		DOE-1187 (ORIGINAL REFERENCE DOE-9-1302)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
92	USA-18-70	Reactors	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: IF-02 (IRC); Room: Conference Room 120;	Title: Multiscale Simulation for Fission Gas Behavior in Nuclear Fuels and Cladding; ID: INL-08-AFCI-MSFG; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Implement an atomistically-informed mesoscopic modeling and simulation capability for fission-gas release in nuclear fuels which incorporates the critical role of microstructure and its evolution under irradiation, as well as stress and temperature effects.; Application: Eventually predict swelling and fission-gas release in actual metal fuel.; Degree of Completion: 10%; Organization Activities: Organization: Nuclear Science & Technology Brief Description: Implement a modeling and simulation capability for fission-gas release in nuclear fuels.;		DOE-1189 (ORIGINAL REFERENCE DOE-9-1305)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
93	USA-18-69	Reprocessing of nuclear fuel	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: CFA-625; Room: Lab 140;	Title: Off-Gas Testing for Used Fuel Recycling; ID: INL-08-AFCI-OGT; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Support future pilot scale offgas testing for used fuel recycling.; Application: Further develop offgas capturing capabilities for used fuel recycling; Degree of Completion: 20%; Organization Activities: Organization: Nuclear Science & Technology Brief Description: Perform experiments using non-radioactive surrogates to capture off-gases to support future pilot scale testing and/or testing with actual used fuel.;		DOE-1190 (ORIGINAL REFERENCE DOE-9-1304)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
94	USA-18-70	Reactors	Idaho National Laboratory P.O. Box 1625 Bldg: IF-602 (IRC); Room: Conference Room 120;	Title: Development of a Predictive Metallic Fuel Performance Model; ID: INL-08-AFCI-PMFP; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Develop a mechanistic science-based microstructural model that can be used to predict the performance of metallic fuels during irradiation in sodium fast reactors.; Application: Predict the performance of metalllic fuels during irradiation in sodium fast reactors.; Degree of Completion: 10%; Organization Activities: Organization: Nuclear Science & Technology Brief Description: Develop a model that can be used to predict the performance of metallic fuels during irradiation in sodium fast reactors.;		DOE-1191 (ORIGINAL REFERENCE DOE-9-1305)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
95	USA-18-67	Nuclear fuel fabrication	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: MFC-752; Room: L&O Conference Room; Bldg: MFC-782;	Title: Remote Metal Fuel Fabrication; ID: INL-08-AFCI-RMFF; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Minimize elemental loss through volatilization during remote metal fuel fabrication; Application: Remote metal fuel fabrication.; Degree of Completion: 10%; Organization Activities: Organization: Nuclear Science & Technology Brief Description: Perform parametric studies for casting high density alloys and mold-crucibles/melt interactions and develop designs for remote fabrication equipment.;		DOE-1192 (ORIGINAL REFERENCE DOE-9-1302)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
96	USA-18-69	Reprocessing of nuclear fuel	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: MFC-787 (FASB); Room: Room 106;	Title: Solvent Extraction Research Under Process Conditions; ID: INL-08-AFCI-SRTD; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Simulate the radiation environment that solvent extraction solutions will experience under process conditions.; Application: Address solvent behavior in used fuel recycling.; Degree of Completion: 10%; Organization Activities: Organization: Nuclear Science & Technology Brief Description: Determine gamma irradiation effects on solvent extraction solutions under process conditions.;		DOE-1193 (ORIGINAL REFERENCE DOE-9-1304)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
97	USA-18-67	Nuclear fuel fabrication	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: MFC-774 (ZPPR Support Wing); Room: Electron Microscopy Laboratory; Bldg: MFC-787 (FASB); Room: Room 101 Vault; Bldg: MFC-752; Room: L&O Conference Room;	Title: Develop Cladding Coatings and Liners for High Burn-up Metallic Transmutation Fuels; ID: INL-08-AFCI-TFCD; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Develop cladding tube coating technology for nuclear applications and determine thermal, mechanical, and irradiation stability.; Application: Develop cladding and liner technologies for nuclear fuels application.; Degree of Completion: 30%; Organization Activities: Organization: Nuclear Science and Technology Brief Description: Develop cladding coatings and liners for high burn-up metallic transmutation fuels utilizing cladding tube coating technology.;		DOE-1194 (ORIGINAL REFERENCE DOE-9-1302)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
98	USA-18-69, USA-2-47	Reprocessing of nuclear fuel	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: MFC-785 (HFEF); Room: Lab 125; Bldg: MFC-785 (HFEF); Room: Lab 127; Bldg: MFC-785 (HFEF); Room: Lab 129; Bldg: MFC-752; Room: B111; Bldg: MFC-752; Room: B103;	Title: Solvent Process Optimization for Americium/Curium Partitioning; ID: INL-08-AFCI-TKST; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Understand and optimize solvent processes for the development of an Americium/Curium separation.; Application: Further develop separation technologies as part of the advancement of used fuel recycling.; Degree of Completion: 10%; Organization Activities: Organization: Nuclear Science & Technology Brief Description: Study the behavior of fundamental thermodynamic parameters on selected solvents and charactierize solution chemistry parameters for Americium and Curium separation processes.;		DOE-1195 (ORIGINAL REFERENCE DOE-9-1304 AND 1-1125)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
99	USA-18-68, USA-18-69, USA-18-70	Critical facilities	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: IF-654 (EROB); Room: Conference Room 159;	Title: Code Development/Modifications for the VISION Code to Perform Actinide Storage vs. Disposal Studies; ID: INL-08-AFCI-VCD; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Augment capabilities in the VISION code to include actinide vs. storage studies.; Application: Enhance tools to perform alternative analysis for actinide storage vs. disposal.; Degree of Completion: 10%; Organization Activities: Organization: Nuclear Science & Technology Brief Description: Develop and/or modify the VISION code to perform. actinide storage vs. disposal studies.;		DOE-1196: (ORIGINAL REFERENCE DOE-9-1303,1304,1305) Additional fuel cycle stages: Reprocessing of Nuclear Fuel, Processing of Intermediate or High-Level Waste

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
100	USA-18-70	Reactors	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: MFC-774 (ZPPR Support Wing); Room: Electron Microscopy Laboratory; Bldg: MFC-787 (FASB); Room: Room 101 Vault; Bldg: MFC-752; Room: L&O Conference Room;	Title: Development of Pressure Resistance Welding Technologies for Oxide Dispersed Strengthened Steels; ID: INL-08-AFCI-WCM; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Develop welding technologies for fuel cladding end-plugs and secondary core internal structural materials.; Application: Develop pressure resistance welding technologies for nuclear reactor structures.; Degree of Completion: 10%; Organization Activities: Organization: Nuclear Science & Technology Brief Description: Development of pressure resistance welding technologies for Oxide Dispersed Strengthened steels.;		DOE-1197 (ORIGINAL REFERENCE DOE-9-1305)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
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Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
101	USA-18-69	Reprocessing of nuclear fuel	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: MFC-789; Room: Far East Room; SubArea: Inert Glovebox;	Title: Exploration of Electrolyte Complexation and Pulse Deposition for Production of Dense Uranium Rodlets; ID: INL-08-LDRD-ECPD; State Relationship: Performed on a DOE location; Objectives: To Improve the electrorefining of nuclear fuel by efficient extraction of purified dense uranium alloys using zirconium seed wire.; Application: Produce articles of dense uranium or uranium alloys that could possibly be used in commercial aqueous plants.; Degree of Completion: 70%; Organization Activities: Organization: Nuclear Science & Engineering Brief Description: Demonstrate the electroformation of a dense uranium rodlet onto a zirconium seed wire.;		DOE-1198 (ORIGINAL REFERENCE DOE-9-1304)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
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Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
102	USA-18-67	Nuclear fuel fabrication	Idaho National Laboratory P.O. Box 1620 Idaho Falls, ID 83415 Bldg: IF-654 (EROB); Room: Conference Room 159;	Title: Develop Fracture Mechanics Computational Methods for Fuel Performance Modeling; ID: INL-08-LDRD-FMFP; State Relationship: Performed on a DOE location; Objectives: Develop state-of-the-art fracture mechanics computational methods for fuel performance modeling.; Application: Utilize this modeling capability in existing nuclear fuel performance codes.; Degree of Completion: 10%; Organization Activities: Organization: Nuclear Science & Technology Brief Description: Develop fracture mechanics computational methods for fuel performance modeling.;		DOE-1199 (ORIGINAL REFERENCE DOE-9-1302)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
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Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
103	USA-18-69	Reprocessing of nuclear fuel	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: IF-602 (IRC); Room: Conference Room 120;	Title: Process Modeling of Solvent Extraction Separations for Advanced Nuclear Fuel Cycles; ID: INL-08-LDRD-MSES; State Relationship: Performed on a DOE location; Objectives: Develop dynamic process models to describe advanced solvent extraction processes.; Application: Develop dynamic process models to describe advanced solvent extraction processes related to advanced nuclear fuel cycles.; Degree of Completion: 30%; Foreign Collaboration: United Kingdom (Q) National Nuclear Laboratory UK (formerly Nexia Sol Sellafield Seascale Cumbria CA20 1PG UK Modelling of a co-processing flowsheet of solvent extraction based separations for use in advanced nuclear fuel cycles. Organization Activities: Organization: Nuclear Science & Technology Brief Description: Develop dynamic process models based on solvent extraction to predict inherent transient behavior in solvent operations.;		DOE-1200 (ORIGINAL REFERENCE DOE-9-1304)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Key Location	General Description	Attachments	Comments
104	USA-18-62, USA-18-64	Reactors	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: IF-602 (IRC); Room: Conference Room 120;	Title: Apply Advanced Computer Techniques to Design Corrosion-Resistant Materials and Fuels; ID: INL-08-LDRD-SEPS; State Relationship: Performed on a DOE location; Objectives: Develop strategies for designing long-living catalytic materials that are resistant to harsh reaction environments and provide recommendations to improve operational properties of materials and fuels under extreme conditions.; Application: Use advanced computer simulations to enhance material and fuel properties for nuclear applications.; Degree of Completion: 70%; Organization Activities: Organization: Center for Advanced Modeling & Simulation Brief Description: Apply advanced computer techniques to design corrosion-resistant materials and fuels used in nuclear reactors.;		DOE-1201 (ORIGINAL REFERENCE DOE-9-1297, 1299)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
105	USA-2-28, USA-18-63, USA-18-64	Nuclear fuel fabrication	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: IF-654 (EROB); Room: Conference Room 159;	Title: Develop Modeling Code to Predict Particle Fuel Behavior; ID: INL-08-NGNP-FPM; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Develop adaptable modeling code to predict fuel performance and fission product transport.; Application: Predict particle fuel performance.; Degree of Completion: 30%; Organization Activities: Organization: Nuclear Science & Technology Brief Description: Development of modeling code to predict fuel behavior.;		DOE-1202: (ORIGINAL REFERENCE DOE-9-1298,1299 AND 1-1105) Additional fuel cycle stages: Reactors

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
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Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
106	USA-2-28, USA-2-57, USA-18-64	Reactors	Idaho National Laboratory P. O. Box 1625 Idaho Falls, ID 83415 Bldg: IF-603 (IRC Lab Building); Room: C19/C20;	Title: Nuclear-Grade Graphite Creep Studies; ID: INL-08-NGNP-GCS; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Establish thermo-mechanical and thermo-physical properties in nuclear grade graphite and develop an understanding of life-limiting phenomena.; Application: Support the development of the Very-High-Temperature Reactor design.; Degree of Completion: 30%; Organization Activities: Organization: Nuclear Science & Technology Brief Description: Perform baseline characterization of properties on nuclear grade graphite.;		DOE-1203 (ORIGINAL REFERENCE DOE-9-1299 AND 1-1105,1139)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
107	USA-2-28, USA-18-64	Reactors	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: IF-603 (IRC Laboratory Building); Room: Lab C1;	Title: High Temperature Materials Testing for Advanced Nuclear Energy Systems; ID: INL-08-NGNP-HTMT; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Determine the alloy with the best aging and irradiation performance for use in very high temperature reactors.; Application: Determine the alloy best suited for heat exchangers and pressure vessels under very high temperature reactor conditions.; Degree of Completion: 10%; Foreign Collaboration: France (F) CEA Saclay Gif-sur-Yvette Cedex, France 91191 Characterizing environmental effects and long term aging of heat exchanger alloys. Organization Activities: Organization: Nuclear Science & Technology Brief Description: Perform high temperature material tests on potential intermediate heat exchanger alloys.;		DOE-1204 (ORIGINAL REFERENCE DOE-9-1299 AND 1-1105)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
108	USA-18-64	Reactors	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: TRA-666 (STAR Facility);	Title: Tritium Permeation Studies for High Temperature Materials; ID: INL-08-NGNP-TPM; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Determine tritium permeation in high nickel alloys used in nuclear applications.; Application: Establish the potential for tritium transport in high nickel alloys used in high-temperature pressure boundary nuclear components.; Degree of Completion: 20%; Organization Activities: Organization: Nuclear Science & Technology Brief Description: Perform laboratory experiments to measure tritium permeation in high temperature materials.;		DOE-1205 (ORIGINAL REFERENCE DOE-91299)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
109	USA-2-28, USA-18-62	Reactors	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: IF-654 (EROB); Room: Conference Room 159;	Title: Development and Validation Modeling and Simulation Tools for Advanced Reactor Analysis; ID: INL-08-NST-DVMT; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Identify dominant phenomena for most challenging scenarios for reators and abnormal transients.; Application: Provide the tools needed to further understand and model reactor characteristics.; Degree of Completion: 20%; Foreign Collaboration: Netherlands (NL) Delft University of Technology Mekelweg 15, 2629 JB Delft, The Netherlands Perform reactor physics modeling. Organization Activities: Organization: Nuclear Science & Technology Brief Description: Design, develop, and validate software tools and methods to calculate behavior of reactors during operational and abnormal transients to quantify behavior characteristics.;		DOE-1206 (ORIGINAL REFERENCE DOE-9-1297 AND 1-1105)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
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Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
110	USA-18-62	Reactors	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: MFC-774 (EML);	Title: Materials Characterization and Failure Analysis; ID: INL-08-WFO-MCFA; State Relationship: Performed on a DOE location; Objectives: Improve the operation of commercial nuclear power plants by analyzing plant systems and structures.; Application: Improve systems and structures in commercial nuclear power plants.; Degree of Completion: 10%; Organization Activities: Organization: Nuclear Science & Technology Brief Description: Perform materials characterization and failure analysis to improve the operation of commercial nuclear power plants.;		DOE-1207 (ORIGINAL REFERENCE DOE-9-1297)3

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
111	USA-18-62, USA-18-70	Reactors	Oak Ridge National Laboratory One Bethel Valley Road Oak Ridge, TN 37831 Bldg: 5700; Room: H325;	Title: Core Solver for SCALE; ID: ORNL-NE-004; State Relationship: Performed on a DOE location; Objectives: Improved integrated reactor core simulation.; Application: Reactor analysis.; Degree of Completion: 10%; Organization Activities: Organization: Nuclear Science & Technology Division Brief Description: This project will integrate the NESTLE reactor core simulator with the TRITON lattice physics code in SCALE to provide a easy-to-use reactor analysis code.;		DOE-1209 (ORIGINAL REFERENCE DOE-9-1297, 1305)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
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Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
112	USA-18-62	Reactors	Oak Ridge National Laboratory One Bethel Valley Road Oak Ridge, TN 37831 Bldg: 5700; Room: H325;	Title: Development of a high performance computing sovler for nuclear energy transporter; ID: ORNL-NE-005; State Relationship: Performed on a DOE location; Objectives: Develop new reactor core simulator for high performance computers.; Application: Model power distribution in a nuclear reactor.; Degree of Completion: 10%; Organization Activities: Organization: Nuclear Science & Technology Division Brief Description: This project involves the development of a new Boltzmann transport solver, which can utilize the full capacity of the Leadership-class Computing Facilities at Oak Ridge National Laboratory, to model the power distribution in a nuclear reactor.;		DOE-1210 (ORIGINAL REFERENCE DOE-9-1297)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
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Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
113	USA-18-62	Reactors	Oak Ridge National Laboratory One Bethel Valley Road Oak Ridge, TN 37831 Bldg: 5700; Room: N325, H327; Activities: Analyses and assessments;	Title: Fuels Technology Integration/MALIBU project; ID: ORNL-WO-003; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Obtain isotopic measurement data for spent fuel for computer code and nuclear data evaluation.; Application: Validation of computer models using isotopic data for light water reactor fuels.; Degree of Completion: 70%; Foreign Collaboration: Belgium (BL) SCK-CEN Mol, Belgium Coordinating organization for international experimental program. France (F) CEA, EdF CEA - Saclay, Marcoiule, Cadarache - France EdF - Participant in the MALIBU international program. Germany (DF) RWE Power Essen, Germany Participant in the MALIBU international program.		DOE-1211 (ORIGINAL REFERENCE DOE-9-1297)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
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Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				Japan (J) NFI, JNES (Japan Nuclear Safety Organization) Tokyo, Japan Participant in the MALIBU international program. Sweden (SW) Studsvik Nuclear AB, Westinghouse Nykoping, Sweden Participant in the MALIBU international program. Switzerland (CH) PSI, KKG PSI - Villigen, Switzerland KKG - Solothurn, Switz Participant in the MALIBU international program. United States of America (U) ORNL Oak Ridge, TN Participant in the MALIBU international program. Organization Activities: Organization: Nuclear Science and Technology Division - Nuclear Technology Program Office Brief Description: Evaluate program data for computer code validation using measurement data.;		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
114	USA-18-69	Reprocessing of nuclear fuel	Los Alamos National Laboratory Los Alamos, NM 87545 Bldg: TA-48, Bldg RC1; Room: 430;	Title: Actinide & Fission Products Separation R&D; ID: LDRD Separations; State Relationship: Performed on a DOE location; Objectives: Understand the chemistry of actinides and fission products under alkaline conditions.; Application: Advanced fuel cycle separations technologies.; Degree of Completion: 10%; Organization Activities: Organization: Civilian Nuclear Programs Brief Description: Development of new chemical approaches applicable to the separation of actinides and fission products for advanced nuclear fuel cycles.;		DOE-1214 (ORIGINAL REFERENCE DOE-9-1304)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
115	USA-18-62	Reactors	Sandia National Laboratories Nuclear Energy Safety Technologies International Programs Building 10600 Research Road SE Albuquerque, NM 87123 Bldg: International Programs Builiding; Room: 2109;	Title: Computational analysis for NRC safety & regulatory decisions; ID: Sandia-4; State Relationship: Performed on a DOE location; Objectives: The objective of this research is to provide data for the U.S. Nuclear Regulatory Commission, and is an on-going activity.; Application: This research helps the NRC with regulatory decision-making.; Degree of Completion: 10%; Organization Activities: Organization: Sandia Org 6760, Nuclear Energy Safety Technologies Brief Description: These individual computational analyses are performed to help resolve various issues relating to regulation and safety for the current fleet of light water reactors, as well as for pending new reactor designs.;		DOE-1282 (ORIGINAL REFERENCE DOE -9-1297) Changed address per Jo Anna Sellen and Ed Wonder at DOE/NNSA. - 3/12/09

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
116	USA-2-48, USA-18-70	Reactors	Sandia National Laboratories Nuclear Energy Safety Technologies International Programs Building 10600 Research Road SE Albuquerque, NM 87123 Bldg: International Programs Builiding; Room: 2109;	Title: Computational development for Advanced Burner Reactor safety analysis; ID: Sandia-5; State Relationship: Performed on a DOE location; Objectives: The objective of this research is to develop and demonstrate a new computer code (BRISC) crucial to performing rigorous nuclear-reactor safety analyses for the more advanced reactors anticipated to be on-line in the future.; Application: This research will help with safety analysis of advanced reactors in the future.; Degree of Completion: 70%; Organization Activities: Organization: Sandia Org 6760, Nuclear Energy Safety Technologies Brief Description: These activities will develop and demonstrate the foundational aspects of an advanced multi-fidelity Burner Reactor Integrated Safety Code (BRISC). The central task is to determine how to best marry the high-performance computational technologies developed over the last 15 years with the phenomenonological modeling capabilities embodied in legacy reactor safety codes.;		DOE-1283 (ORIGINAL REFERENCE DOE-9-1305 AND 1-1127) Changed address per Jo Anna Sellen and Ed Wonder at DOE/NNSA - 3/12/09

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
117	USA-18-69	Reprocessing of nuclear fuel	Idaho National Laboratory P.O. Box 1625 Idaho Falls, ID 83415 Bldg: IF-657 (IEDF); Room: W4;	Title: Remote Contactor Development for TRUEX Flowsheet Testing; ID: INL-08-AFCI-CCC; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Build a prototype of a remote contactor to test the TRUEX flowsheet.; Application: Determine mass transfer efficiency in the various sections of the TRUEX flowsheet.; Degree of Completion: 10%; Organization Activities: Organization: Nuclear Science & Technology Brief Description: Development of a remote contactor to perform TRUEX flowsheet testing.;		DOE-1284 (ORIGINAL REFERENCE DOE-9-1304)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
118	USA-18-69, USA-18-70	Reactors	Pacific Northwest National Laboratory 902 Battelle Blvd. Richland, WA 99352 Bldg: ETB; Room: 1103; SubArea: Table 1;	Title: Identifying Technology Development Requirements for Selected Reactor Components; ID: PNNL-GNEP-RCTR-001; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Identify technology gaps and needs for a planned commercial fast reactor.; Application: Develop the technology roadmap for implementation of the Advanced Fuel Cycle Initiative (AFCI).; Degree of Completion: 10%; Organization Activities: Organization: Pacific Northwest National Laboratory Brief Description: Assessing the data needs for specific candidate structural materials (alloys), updating the testing needs for various sodium components for sodium-cooled fast reactors, and collecting and archiving design and operational data from past fast reactor operations (FFTF).; Organization: Battelle PNWD Brief Description: Identifying technology gaps and development needs in the form of a technology roadmap for the Advanced Burner Reactor for Advanced Fuel Cycle Initiative (AFCI).;		DOE-1286 (ORIGINAL REFERENCE DOE-9-1304,1305)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
119	USA-2-24, USA-18-69	Reprocessing of nuclear fuel	Pacific Northwest National Laboratory 902 Battelle Blvd. Richland, WA 99352 Bldg: ETB; Room: 1103; SubArea: Table 1; Bldg: RPL; Room: 516; SubArea: Fumehood (south wall), glove box; Bldg: RPL; Room: 511; SubArea: Fumehoods 1,2,3,4; Bldg: RPL; Room: 515; SubArea: Glovebox 1;	Title: Testing and Evaluation for Uranium Extraction Fuel Recycling Flowsheet; ID: PNNL-GNEP-RCYCL-001; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Applying fuel cycle technology expertise to develop spent fuel recycling processes for implementation in the US for the Advanced Fuel Cycle Initiative (AFCI).; Application: Develop spent fuel recycling processes for implementation in the US for the Advanced Fuel Cycle Initiative (AFCI).; Degree of Completion: 10%; Organization Activities: Organization: Pacific Northwest National Laboratory Brief Description: Assessing spent fuel recycling needs and investigating fuel cycle chemistry with minor actinides.; Organization: Battelle PNWD Brief Description: Assessing spent fuel recycling needs and investigating fuel cycle chemistry with minor actinides.;		DOE-1287 (ORIGINAL REFERENCE DOE-9-1304 AND 1-1101)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
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Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
120	USA-18-62	Reactors	Brookhaven National Laboratory Brookhaven National Laboratory P.O. Box 5000 Upton, NY 11973 Upton, NY 11973 Bldg: 130; Room: Conf. Rm.;	Title: Design and Prototype qualification of an Enriched Boron facility; ID: BNL-FY08-CRA-001; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Exploring different methods for enriching boron for use in nuclear power reactors.; Application: The enriched boron produced is intended to be used primarily as a burnable poison for fresh nuclear fuel, but other applications are possible.; Degree of Completion: 90%; Foreign Collaboration: Russia (Z) Siberian Group of Chemical Enterprise Seversk, Russia Development of different technologies for enriching boron. Fabrication of targets. Organization Activities: Organization: Energy Science and Technology department of BNL Brief Description: Project management and technical oversight performed by BNL. R&D is performed by the Russian entity.;		DOE-1288 (ORIGINAL REFERENCE DOE-9-1297)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
121	USA-18-67, USA-18-68, USA-18-69, USA-18-70	Conversion of nuclear material	Brookhaven National Laboratory Brookhaven National Laboratory P.O. Box 5000 Upton, NY 11973 Bldg: 130; Room: Conference room;	Title: Safety and Criticality Analysis for AFCI; ID: BNL-FY08-EST-003; State Relationship: Funded by DOE and performed on a DOE location; Objectives: This activity is in support of the Advanced Fuel Cycle Iniatives (AFCI).; Application: AFCI fuel cycle.; Degree of Completion: 20%; Organization Activities: Organization: Energy Science and Technology Department of BNL Brief Description: This work involves many aspects of the nuclear fuel cycle. It includes reactor performance, safety analysis, characteristics of spent fuel, nuclear data review and generation, and criticality safety.;		DOE-1289: (ORIGINAL REFERENCE DOE-9-1302,1303,1304, 1305) Additional fuel cycle stages: Enrichment of Nuclear Material, Nuclear Fuel Fabrication, Reactors, Critical Facilities, Reprocessing of Nuclear Fuel, Processing of Intermediate or High-Level Waste

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Nuclear Cycle Stage	Location	General Description	Attachments	Comments
122	USA-18-62	Reactors	Brookhaven National Laboratory Brookhaven National Laboratory P.O. Box 5000 Upton, NY 11973 Upton, NY 11973 Bldg: 130; Room: Conf. Rm.;	Title: Safety analysis and multidescipline engineering support to the US Nuclear Regulatory Commission; ID: BNL-FY08-WFO-003; State Relationship: Performed on a DOE location; Objectives: Supply technical support to the Nuclear Regulatory Commission of the US; Application: Regulation of US reactors; Degree of Completion: 20%; Organization Activities: Organization: Energy Science and Technology Dept. of BNL Brief Description: Technical expertise is given to the NRC in the following areas: * fire safety including post-fire circuit analysis issues * core physics, thermal-hydraulics, reactor dosimetry, pressure vessel fluence, nuclear design methodologies, piping analysis, systems analysis, and environmental analysis * review of technical issues related to research reactor conversion from HEU to LEU fuel and other safety issues. * evaluation of seismic hazards to nuclear facilities.;		DOE-1290 (ORIGINAL REFERENCE DOE-9-1297)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
123	USA-18-62	Reactors	Brookhaven National Laboratory Brookhaven National Laboratory P.O. Box 5000 Upton, NY 11973 Upton, NY 11973 Bldg: 130; Room: Conf. Rm.;	Title: Technical Support to Russia, Ukraine, and Armenia; ID: BNL-FY08-WFO-005; State Relationship: Performed on a DOE location; Objectives: To supply training to the Regulatory Authorities and their technical support organizations for the three countries mentioned in the use of the NRC's TRACE thermal hydraulic computer code, seismic design, and other safety related matters.; Application: Nuclear Regulatory activities.; Degree of Completion: 20%; Foreign Collaboration: Armenia (AM) Armenian Nuclear Regulatory Authority (ANRA) Yerevan, Armenia Recieve training from BNL on civilian reactor safety analysis Russia (Z) Roseteknadzor Moscow, Russian Federation To receive training from BNL on civilian reactor safety analysis Ukraine (RK) State Nuclear Regulatory Committee of Ukraine Kiev, Ukraine To receive training from BNL on civilian reactor safety analysis		DOE-1291: This work involves tecnology transfer to Russia, Ukraine and Armenia in Nuclear Technology. The work is supported by the US Nuclear Regulatory Commission. (ORIGINAL REFERENCE DOE-9-1297)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	Activity General Description	Attachments	Comments
				Organization Activities: Organization: Energy Science and Technology Dept. of BNL Brief Description: Technology Transfer and technical support in safety analysis to the regulatory authorities and their technical support organizations in Armenia, Russia and Ukraine.;		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
124	USA-18-67, USA-18-69, USA-18-70	Nuclear fuel fabrication	Oak Ridge National Laboratory One Bethel Valley Road Oak Ridge, TN 37831 Bldg: 5700; Room: N305-A;	Title: I-NERI with KAERI: Nuclear Data Uncertainty Analyses to Support Advanced Fuel Cycle Development; ID: ORNL-NE-011; State Relationship: Funded by DOE and performed on a DOE location; Objectives: Improved nuclear data uncertainty analyses.; Application: Support for Advanced Fuel Cycle development.; Degree of Completion: 10%; Foreign Collaboration: Korea, Republic of (KO) KAERI Daejon, Korea Testing data for reactor applications. Organization Activities: Organization: Nuclear Science & Technology Division Brief Description: Provide improved neutron cross-section data with uncertainty or covariance data for isotopes important for Advanced Fuel Cycle (AFC) applications. Also, to assess uncertainties of the nuclear integral parameters due to the cross-section data, improve safety validation, and reduce capital cost through system design optimization for AFC developments. The collaboration will involve the development of nuclear cross-section evaluations that are basic science nuclear datasets available for unlimited distribution from data distribution centers such as the U.S. National Nuclear Data		DOE-1292: (ORIGINAL REFERENCE DOE-9-1302,1304,1305) Additional fuel cycle stages: Critical Facilities, Reprocessing of Nuclear Fuel

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				Center. Moreover, the testing of the data in nuclear applications will only involve nuclear system specifications that are only available in the open literature. In short, the entire project will only involve data and nuclear system information that is widely available in the open literature.;		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
125	USA-2-88, USA-18-67, USA-18-68, USA-18-69, USA-18-70	Nuclear fuel fabrication	Savannah River Site Savannah River Nuclear Solutions Aiken SC 29808 Bldg: 999-1W Aiken County Technology Laboratory; Room: Conference Room;	Title: Advanced Fuel Cycle Initiative R&D; ID: SRS-08-AFCI-001; State Relationship: Funded by DOE and performed on a DOE location; Objectives: 1. Assist in management and evaluation of further industry development of physical plant options that would accomplish the mission of a nuclear fuel recycling center. 2. Perform R&D on the characterization of undissolved solids and R&D on the elimination of acetic acid from the fuel recycling separations processes. 3. Perform R&D on the viability of creating a glass wasteform from product streams from the fuel recycling process and determine its performance characteristics. 4. Perform R&D on the separation of americium and/or curium from the fuel recycling separations process. 5. Perform R&D on alternate reductants and oxidants for neptunium and plutonium in the fuel recycling separations process. 6. Perform R&D on the viability of creating a metallic wasteform from product streams from the fuel recycling process and determine its performance characteristics.; Application: 1. Build a fuel recycling facility to reprocess fuel into streams with different reuse and disposal paths. 2. Characterize the undissolved solids for formulation of the metallic wasteform. Elimination of the formation of acetic acid precludes its accumulation in process columns. 3. Produce a glass wasteform of the lanthanides, cesium/strontium, and potentially the transition metal fission products that meets the waste acceptance criteria.		DOE-1293: (ORIGINAL REFERENCE DOE-9-1302,1303,1304, 1305 AND 1-1183) Additional fuel cycle stages: Critical Facilities, Reprocessing of Nuclear Fuel

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				4. Determine the appropriate flowsheet for the separation of an americium or an americium/curium stream. 5. Determine if reductants/oxidants exist that will perform the necessary valence changes without the sulfur issues of ferrous sulfamate. 6. Produce a metallic wasteform of the cladding hulls, technicium, and potentially the transition metal fission products that meets the waste acceptance criteria.; Degree of Completion: 10%; Organization Activities: Organization: Savannah River National Laboratory Brief Description: SRNL is a national laboratory that conducts research on various topics, in this case, the Advanced Fuel Cycle Initiative Research and Development Programs and Engineering;		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachment	Comments
126	USA-18-68, USA-18-69	Reprocessing of nuclear fuel	Idaho National Laboratory P.O.Box 1625 Idaho Falls, ID 83415 Bldg: MFC-768; Room: 23E; SubArea: Org. C420 Lab Space; Bldg: MFC-772; Room: 201; SubArea: Glovebox 0; Bldg: MFC-789; Room: 101, 103; Bldg: MFC-752; Room: L&O Conference Room;	Title: Testing and Modeling of Electrochemical Separations Processes; ID: INL-08-AFCI-KMES; State Relationship: Funded by DOE and performed on a DOE location; Objectives: The objective of this activity is to develop a fundamental understanding of kinetic and thermodynamic characteristics of certain key steps in the electrochemical separations process. This knowledge is anticipated to help the U.S. and Republic of Korea evaluate the potential benefits of electrochemical processing, especially in the areas of waste minimization and cost savings.; Application: Reprocessing of spent nuclear fuel from current generation and advanced reactors.; Degree of Completion: 10%; Foreign Collaboration: Korea, Republic of (KO) Korean Atomic Energy Research Institute (KAERI) Daeduk-daero 1045, Dukjin-dong, Yuseong-Gu, Daejeo Collaboration to develop electrochemical separations unit process kinetic models. Korea, Republic of (KO) Seoul National University 599 Gwanangno Gwanak-gu Seoul, Korea 151-742 Collaboration to develop electrochemical separations unit process kinetic models.		DOE-1295: (ORIGINAL REFERENCE DOE-9-1303,1304) Additional fuel cycle stages: Processing of Intermediate or High-Level Waste

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
				Organization Activities: Organization: Nuclear Science and Technology Brief Description: This activity involves modeling of select unit operations in the electrochemical separations process for application to spent fuel treatment and disposition of resulting high-level wastes. It also includes small-scale testing with surrogate materials to determine parameters for the unit operations models. Specific unit operations currently being studied include electrolytic reduction of oxide fuels, fission product separation from molten salts, and uranium electrorefining. The uranium electrorefining modeling project is designed to lead to a better understanding of the fundamental mechanisms and rate controlling steps behind this process and how the operating parameters for existing systems may be optimized for improved U recovery, current efficiency, etc. It is not designed to address issues such as scale-up or recovery of group actinides in electrochemical cells.;		
127		Enrichment of nuclear material	GLOBAL NUCLEAR FUELS AMERICA Building: Within FMO 3901 CASTLE HAYNE ROAD WILMINGTON, NC 28401	Project Number/ID: Project Title: Laser Enrichment Test Loop Project Time Line: 10/2006 to ongoing Project Level: Demonstration R&D Activities: Uranium enrichment using laser technology Project Objective: Develop technology for commercial application Foreign Collaborators: Silex Systems Ltd. New South Wales, Australia		NRC Site reporting Code: AP-YLJ Site Name: Global Nuclear Fuels America

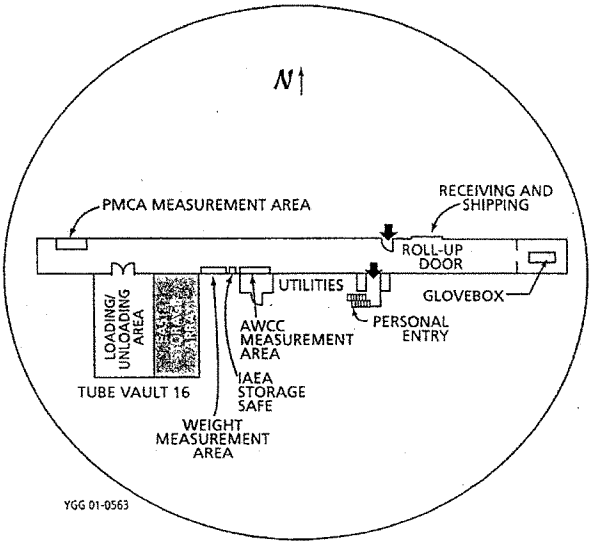
Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(i)
Declaration Number:	2	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachment(s)	Comments
128		Nuclear fuel fabrication	University of Idaho Materials Science and Engineering Dept 875 Perimeter Drive Moscow, ID 83844 McClure Hall, Room 422	Project Title: A Comparative Study of Welded ODS Cladding Materials for AFCI/GNEP Applications. Project ID: DOE Grant# DE-FG07-08ID14925 Project Level: Experiment R&D Activites: This project is about studying the weldability of oxide dispersion strengthened (ODS) alloys for cladding applications. However, this is solely focused on cladding materials, but no fuel materials are involved. Friction stir welding and pressure resistance welding of ODS alloys will be carried out and mechanical properties and microstructural characteristics will be evaluated. The objective of the project is to demonstrate the viability of solid state welding techniques for ODS materials. The project started on 2008-10-01 and is scheduled to end on 2009-09-30. Collaborations: Mark Woltz, Centerline, Windsor, Canada.		C000044 BIS Location Name: University of Idaho

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UFZH
Declaration Number:	3	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	DOC-1097-diq_ref2.3.pdf		
Comments:			

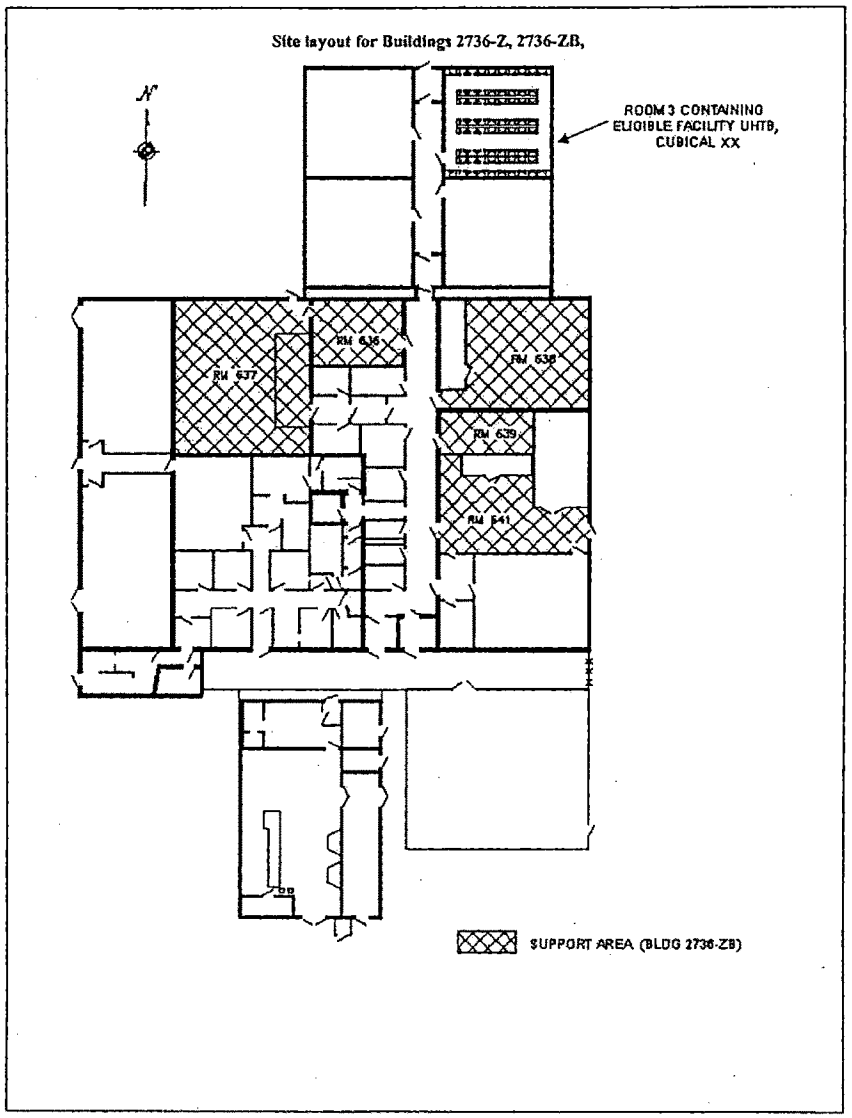
Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
1		UFZH	9720-5	Room: Tube Vault 16, East Storage Array; SubArea: Eligible Facility Portion; Floors: 1; Area: 1; Use: Long-term storage; Contents: Highly enriched uranium;	DOC-1097-diq_ref2.3.pdf - DIQ Reference 2.3	DOE-1097

Reference 2.3. Location of Tube Vault 16 East Storage Array within the Y-12 Complex (shaded area) and location of measurement equipment adjacent to the eligible facility that will be made available for the IAEA to conduct measurements and observe sampling.



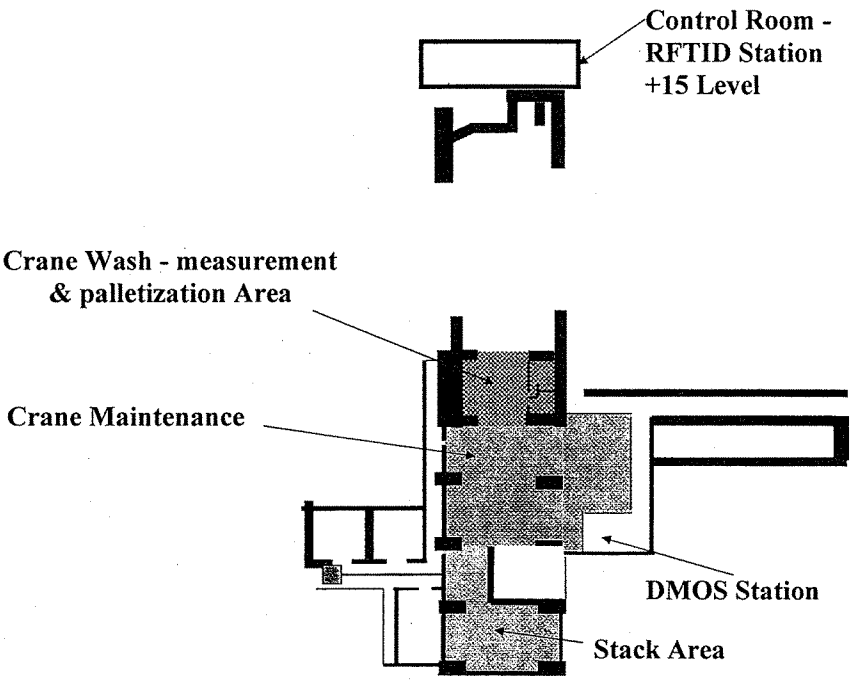
Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UHTB
Declaration Number:	4	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	DOC-1098-2736-Z_Site_layout[1].pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
1		UHTB	PFP Building 2736-Z	Room: Room 3; SubArea: Cubicle XX; Floors: 1; Area: 1; Use: Storage; Contents: Plutonium;	DOC-1098-2736-Z Site layout.pdf - UHTB Site layout	DOE-1098


Site layout for Buildings 2736-Z, 2736-ZB,
N
ROOM 3 CONTAINING
ELIGIBLE FACILITY UHTB,
CUBICAL XX
RM 635
RM 637
RM 638
RM 639
RM 641
SUPPORT AREA (BLDG 2736-ZB)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UDCZ
Declaration Number:	5	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	DOC-1099-KAMS_UDZC_Stack_Area_sketch[1].pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comment(s)
1		UDCZ	K-Area	Room: KAMS; SubArea: Stack Area; Floors: 1; Area: 430; Use: Plutonium oxide storage; Contents: Pu oxide;	DOC-1099-KAMS UDZC Stack Area sketch.pdf - KAMS UDZC Stack Area	DOE-1099: KAMS UDZC Stack Area currently contains material safeguarded by the International Atomic Energy Agency (IAEA).


Control Room -
RFTID Station
+15 Level
Crane Wash - measurement
& palletization Area
Crane Maintenance
DMOS Station
Stack Area

KAMS LAYOUT

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYUD
Declaration Number:	6	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	ArevaRichlandSiteMap(APUYUD).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
1		UYUD	UF6 Cylinder Storage Facility (F-7)	Number of Floors: 1 Floor 1 Area: 3,000 sq. meters Current use: Receipt, handling and storage of full, empty, and heel-quantity uranium hexafluoride (UF6) cylinders, including weighing and assaying of cylinder contents Prior uses: None	ArevaRichlandSiteMap (APUYUD).pdf -	
2		UYUD	Dry Conversion Facility (E-6)	Number of Floors:4 Floor Area(s): 1st floor - 500 sq. meters, 2nd floor - 500 sq meters, 3rd floor - 500 sq meters, 4th floor - 500 sq meters Current use: Chemical conversion of UF6 to uranium dioxide (UO2) powder and mechanical processing of the powder (powder preparation) for subsequent pellet pressing. Prior uses: None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYUD
Declaration Number:	6	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	ArevaRichlandSiteMap(APUYUD).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
3		UYUD	UO2 Building (D-6)	Number of Floors:2 Floor Area(s): 1st floor - 6,720 sq. meters, 2nd floor - 1,680 sq meters Current use: Pressing of UO2 powder into pellets and subsequent pellet sintering and grinding. Loading of finished pellets into fuel rods and assembly of fuel rods and associated hardware into fuel bundles. Loading of products (powder, pellets, fuel rods, assemblies) for shipment. Recovery of uranium via the ammonium diuranate (ADU) process. Bulk UO2 storage. Analytical laboratory and UF6 cylinder washing activities. Prior uses: None		
4		UYUD	Specialty Fuels (SF) Building (C-6)	Number of Floors:2 Floor Area(s): 1st floor - 850 sq. meters, 2nd floor - 850 sq meters Current use: Production of UO2 fuel pellets (blending, pressing, sintering, grinding) containing neutron absorber additive. Fuel rod fabrication activities. Housing of the Solid Waste Uranium Recovery (SWUR) incinerator. Prior uses: None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYUD
Declaration Number:	6	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	ArevaRichlandSiteMap(APUYUD).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
5		UYUD	Engineering Laboratory Operations (ELO) Building (D-7)	Number of Floors:2 Floor Area(s): 1st floor - 1,360 sq. meters, 2nd floor - 340 sq meters Current use: Engineering Laboratory operations (ELO) Building (D-7) Dissolution and solvent extraction processing of uranium fuel scrap for removal of contaminants. Laboratory facilities for research and development activities in support of fuel fabrication and related functions. Prior uses: None		
6		UYUD	UNH Drum Storage Warehouse (E-8)	Number of Floors:1 Floor Area(s): 1st floor - 500 sq. meters Current use: Storage of drums of uranyl nitrate solution for eventual uranium recovery processing. Prior uses: None		
7		UYUD	Warehouse 1, 2, 3, Facility (C-5)	Number of Floors: 1 Floor Area(s): 1st floor - 2,600 sq. meters Current use: Materials receipt and storage. Loading of containers of powder/pellet product into shipping containers Prior uses: None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYUD
Declaration Number:	6	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	ArevaRichlandSiteMap(APUYUD).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
8		UYUD	Fuel Storage Warehouse (Warehouse 4) (C-3)	Number of Floors: 1 Floor Area(s): 1st floor - 300 sq. meters Current use: Storage of uranium-bearing product or scrap. Miscellaneous production support activities. Prior uses: None		
9		UYUD	Uranium Storage Warehouse (Warehouse 6) (E-5)	Number of Floors: 1 Floor Area(s): 1st floor - 900 sq. meters Current use: Storage of uranium powder and pellet product material and uranium fuel scrap in closed containers. Miscellaneous production support activities. Prior uses: None		
10		UYUD	Operations Scrap Warehouse (Warehouse 7) (G-7)	Number of Floors: 1 Floor Area(s): 1st floor - 700 sq. meters Current use: Storage of containers of uranium fuel feed stock, product, and scrap. Prior uses: None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYUD
Declaration Number:	6	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	ArevaRichlandSiteMap(APUYUD).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
11		UYUD	Waste Storage Facility (F-3)	Number of Floors: 1 Floor Area(s): 1st floor - 600 sq. meters Current use: Storage of containers (drums/boxes) of radioactively contaminated wastes awaiting off-site disposal. Prior uses: None		
12		UYUD	Solid Waste Storage Pad (D-5)	Number of Floors: 1 Floor Area(s): 1st floor - 5,700 sq. meters Current use: Storage of containers (drums/boxes/filters) of radioactively contaminated wastes awaiting recovery or off-site disposal. Prior uses: None		
13		UYUD	Lagoon Uranium Recovery LUR/Solids Processing Facility (SPF) (E-4)	Number of Floors: 1 Floor Area(s): 1st floor - 600 sq. meters Current use: Processing of waste liquids and sludges/solids. Powder blending operations. Miscellaneous production support activities. Prior uses: None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYUD
Declaration Number:	6	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	ArevaRichlandSiteMap(APUYUD).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
14		UYUD	Ammonia Recovery Facility (ARF) (E-7)	Number of Floors: 1 Floor Area(s): 1st floor - 400 sq. meters Current use: Recovery of ammonium hydroxide and uranium from liquid process effluents. Temporary tank accumulation of liquid process effluents. Prior uses: None		
15		UYUD	Modular Extraction Recovery Facility (MERF) (E-4)	Number of Floors: 1 Floor Area(s): 1st floor - 300 sq. meters Current use: Sorting and recovery of uranium from contaminated solid wastes. Prior uses: None		
16		UYUD	Fuel Services Building (Building 9) (B-4)	Number of Floors: 2 Floor Area(s): 1st floor - 700 sq. meters, 2nd floor - 700 sq meters Current use: Miscellaneous production support activities, including computer operations. Fuel bundle defabrication activities. Prior uses: None		

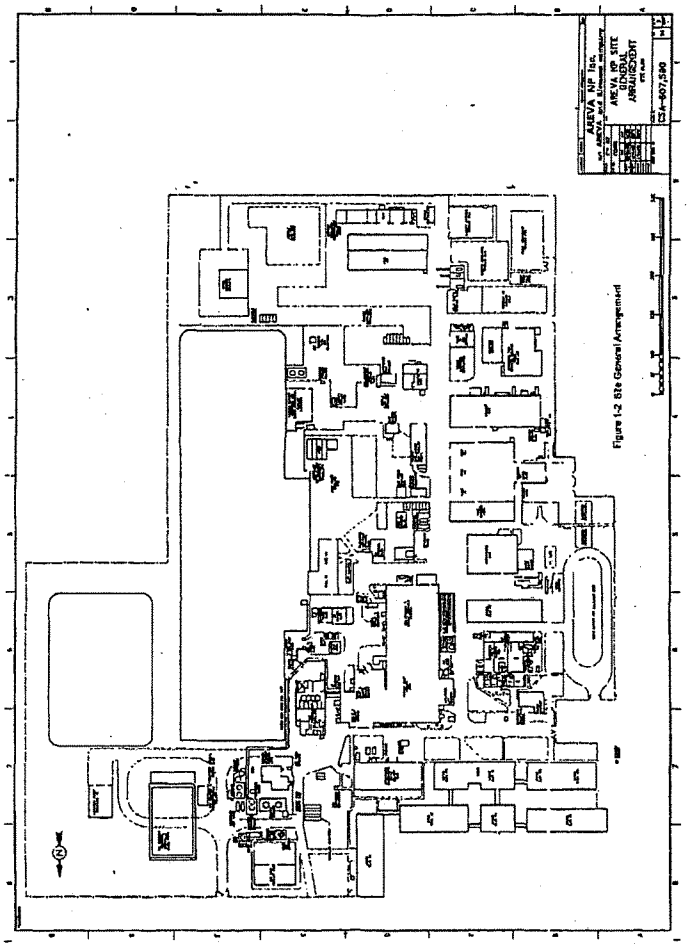
Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYUD
Declaration Number:	6	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	ArevaRichlandSiteMap(APUYUD).pdf		
Comments:			

Entry	Reference	Facility/EOF Code	Building	General Description	Attachments	Comments
17		UYUD	Product Development Test Facility (PDTF) (D-4)	Number of Floors: 1 Floor Area(s): 1st floor - 500 sq. meters Current use: Hydraulic, heat transfer, and mechanical/seismic testing of fuel assemblies. Prior uses: None		
18		UYUD	North Tank Farm (E/F-7)	Number of Floors: 1 Floor Area(s): 1st floor - 700 sq. meters Current use: Tank storage of liquid chemical feed and product materials (hydrofluoric acid, anhydrous and aqua ammonia, sodium hydroxide, nitric acid, nitrogen) Prior uses: None		
19		UYUD	Office buildings 1 through 6 (C-7), 7 (C-6), and 8 (D-8)	Number of Floors: 2 Floor Area(s): 1st floor - 7,200 sq. meters, 2nd floor - 1,800 sq meters Current use: Office/Administrative functions. Prior uses: None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYUD
Declaration Number:	6	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	ArevaRichlandSiteMap(APUYUD).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
20		UYUD	Central Guard Station/Emergency Operations Center (B-6)	Number of Floors: 1 Floor Area(s): 1st floor - 300 sq. meters Current use: Security and emergency response operations. Prior uses: None		

Site General Arrangement



Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYNJ
Declaration Number:	7	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	ArevaLynchburgSiteMap(APUYNJ).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
1		UYNJ	MAR Facility	Number of Floors: 2 Floor Area: 1st floor=8974 Sq. meters, 2nd floor=2375 Sq. meters Current use: Fuel fabrication of fuel assemblies for commercial nuclear reactors takes place at the southern half of the MAR facility (Areas 1-10 located on the MAR site map (attached with form AP-B)). Uranium dioxide pellets are received and inserted into rods and assembled into fuel bundles and shipped to customer sites. Burnable poison pellets are manufactured at the north end of the building. At the center front and south west part of the building, manufacture of control components takes place. Operations also include manufacture of components for the grid cases of the fuel assemblies, filters, and the manufacture of incore instrumentation. The second floor consists of office space areas. Prior uses: In the early 1970's fuel pelletizing also took place at the south end of the building.	ArevaLynchburg SiteMap (APUYNJ).pdf -	
2		UYNJ	Temporary Sea-Land (building 11)	Number of Floors: 1 Floor Area(s): 16 Sq. meters Current use: Temporary storage of waste generated from the Pellet Loading Room within the MAR facility Prior uses: None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYNJ
Declaration Number:	7	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	ArevaLynchburgSiteMap(APUYNJ).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
3		UYNJ	SERF-2 (Building 12)	Number of Floors: 1 Floor Area(s): 67 Sq. meters Current use: Currently no active work takes place in the building. Prior uses: None		
4		UYNJ	SERF-3 (Building 13)	Number of Floors: 2 Floor Area(s): 1st floor = 1133 Sq. meters, 2nd floor = 47 Sq. meters Current use: On the 1st floor fabrication and refurbishment work in support of Nuclear Services Systems takes place. Activities include machining and welding applications in addition to chemical cleaning and sludge lancing. The 2nd floor consists of HVAC and office areas. Prior uses: None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYNJ
Declaration Number:	7	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	ArevaLynchburgSiteMap(APUYNJ).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
5		UYNJ	SERF-4 (Building 14)	Number of Floors: 2 Floor Area(s): 1st floor = 4333 Sq. meters, 2nd floor = 286 Sq. meters Current use: The 1st floor is the primary hub for North American contaminated Fuel Field Service equipment inventory. Activities include refurbishment of contaminated tooling, systems and shipments to various reactor sites. Some of the main tooling types used in the building is Steam Generator, Outage Nuclear Services, Component Repair and Replacement, Non-destructive Examination and Video. The 2nd floor consists of HVAC and storage areas. Prior uses: None		
6		UYNJ	SERF-5 Pump & Motor Service/Fuel Service (Building 15)	Number of Floors: 2 Floor Area(s): 1st floor = 3908 Sq. meters, 2nd floor = 1661 Sq. meters Current use: Two thirds of the 1st floor is used for the refurbishment of reactor pumps and RCP motors using stripping ovens, paint booths, wash booths, etc. The other one third of the building is utilized for work with Fuel Field Services equipment consisting of fuel inspection and repair of equipment that is used at the reactor site and other systems such as reactor vessel robotics. The 2nd floor consists of HVAC and office areas. Prior uses: None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYNJ
Declaration Number:	7	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	ArevaLynchburgSiteMap(APUYNJ).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
7		UYNJ	Quonset Hut (Building 16)	Number of Floors: 1 Floor Area(s): 466 Sq. meters Current use: Storage for machine shop production stock, scrap metal, etc. Prior uses: None		
8		UYNJ	Maintenance Warehouse (Building 17)	Number of Floors: 1 Floor Area(s): 557 Sq. meters Current use: Used to store maintenance supplies (electrical supplies, filters, office furniture, etc.) Prior uses: None		
9		UYNJ	Chemical Storage Building (Building 18)	Number of Floors: 1 Floor Area(s): 172 Sq. meters Current use: Used to store/dispense chemicals for use at the MAR Site. Prior uses: None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYNJ
Declaration Number:	7	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	ArevaLynchburgSiteMap(APUYNJ).pdf		
Comments:			

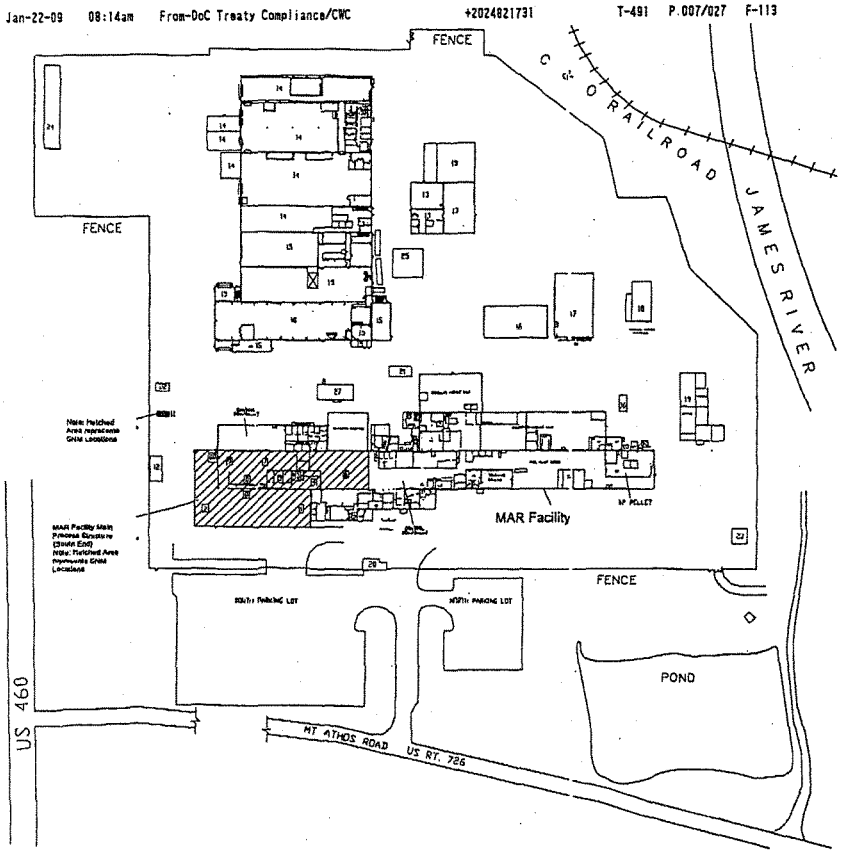
Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
10		UYNJ	Maintenance Garage (Building 19)	Number of Floors: 1 Floor Area(s): 475 Sq. meters Current use: Maintenance department working area. Prior uses: None		
11		UYNJ	Guard House (Building 20)	Number of Floors: 1 Floor Area(s): 51 Sq. meters Current use: Main entrance to the Mt. Athos Road (MAR) Site. Prior uses: None		
12		UYNJ	90 Day Accumulation Building (Building 21)	Number of Floors: 1 Floor Area(s): 49 Sq. meters Current use: 90 day accumulation building for hazardous waste material. Prior uses: None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYNJ
Declaration Number:	7	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	ArevaLynchburgSiteMap(APUYNJ).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
13		UYNJ	Instrument Calibration Building (Building 22)	Number of Floors: 1 Floor Area(s): 23 Sq. meters Current use: Where calibrations for radiological instrumentation is performed along with storage of sealed sources. Prior uses: Scanning of pellet loading room low level waste.		
14		UYNJ	Emergency Operations Facility (Building 23)	Number of Floors: 1 Floor Area(s): 53.5 Sq. meters Current use: Where emergency teams meet during the event of an emergency or plant evaluation. Prior uses: None		
15		UYNJ	Container Storage Building #1 (Building 24)	Number of Floors: 1 Floor Area(s): 309 Sq. meters Current use: Used to store tooling containers for the SERF Facilities. Prior uses: None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYNJ
Declaration Number:	7	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	ArevaLynchburgSiteMap(APUYNJ).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
16		UYNJ	Chemical Lab (Building 25)	Number of Floors: 1 Floor Area(s): 192 Sq. meters Current use: Provides various internal & external lab/chemistry services (i.e, tube, water, sludge, metal analysis). Prior uses: None		
17		UYNJ	Container Storage Building #2 (Building 26)	Number of Floors: 1 Floor Area(s): 31 Sq. meters Current use: Storage of empty drums. Prior uses: None		
18		UYNJ	Pump & Motor Modular Offices (Building 27)	Number of Floors: 1 Floor Area(s): 122 Sq. meters Current use: Pump & Motor Service Engineering Group office areas. Prior uses: None		


FENCE
C & O RAILROAD
JAMES RIVER
FENCE
MAR Facility
FENCE
POND
US 460
MT ATHOS ROAD US RT. 726

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UXHF
Declaration Number:	8	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	SalemNPSSiteMap(APUXHF).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
1		UXHF	SALEM UNIT 1 CONTAINMENT	Number of Floors: 3 Floor Area(s): 78 Elevation: 1620 sq. meters 100 Elevation: 1620 sq. meters 130 Elevation: 1620 sq. meters Current Use: Containment building for the Salem Unit 1 reactor. Prior Use(s): None	SalemNPSSiteMap (APUXHF).pdf -	
2		UXHF	SALEM UNIT 2 CONTAINMENT	Number of Floors: 3 Floor Area(s): 78 Elevation: 1620 sq. meters 100 Elevation: 1620 sq. meters 130 Elevation: 1620 sq. meters Current Use: Containment building for the Salem Unit 2 reactor. Prior Use(s): None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UXHF
Declaration Number:	8	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	SalemNPSSiteMap(APUXHF).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
3		UXHF	SALEM UNIT 1 AUXILIARY BUILDING	Number of Floors: 6 Floor Area(s): 45 Elevation: 509 sq. meters 55 Elevation: 509 sq. meters 64 Elevation: 2279 sq. meters 84 Elevation: 2272 sq. meters 100 Elevation: 2272 sq. meters 122 Elevation: 2272 sq. meters Current Use: The Auxiliary Building contains support equipment for the operation of the Salem Unit 1 reactor. Prior Use(s): None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UXHF
Declaration Number:	8	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	SalemNPSSiteMap(APUXHF).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachment	Comments
4		UXHF	SALEM UNIT 2 AUXILIARY BUILDING	Number of Floors: 6 Floor Area(s): 45 Elevation: 509 sq. meters 55 Elevation: 509 sq. meters 64 Elevation: 2279 sq. meters 84 Elevation: 2272 sq. meters 100 Elevation: 2272 sq. meters 122 Elevation: 2272 sq. meters Current Use: The Auxiliary Building contains support equipment for the operation of the Salem Unit 2 reactor. Prior Use(s): None		
5		UXHF	SALEM UNIT 1 INNER PENETRATION AREA	Number of Floors: 2 Floor Area(s): 78 Elevation: 695 sq. meters 100 Elevation: 670 sq. meters Current Use: The Inner Penetration Area contains support equipment for the operation of the Salem Unit 1 reactor. Prior Use(s): None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UXHF
Declaration Number:	8	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	SalemNPSSiteMap(APUXHF).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
6		UXHF	SALEM UNIT 2 INNER PENETRATION AREA	Number of Floors: 2 Floor Area(s): 78 Elevation: 695 sq. meters 100 Elevation: 670 sq. meters Current Use: The Inner Penetration Area contains support equipment for the operation of the Salem Unit 2 reactor. Prior Use(s): None		
7		UXHF	SALEM UNIT 1 OUTER PENETRATION AREA	Number of Floors: 1 Floor Area(s): 100 Elevation: 171 sq. meters Current Use: The Outer Penetration Area contains support equipment for the operation of the Salem Unit 1 reactor. Prior Use(s): None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UXHF
Declaration Number:	8	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	SalemNPSSiteMap(APUXHF).pdf		
Comments:			

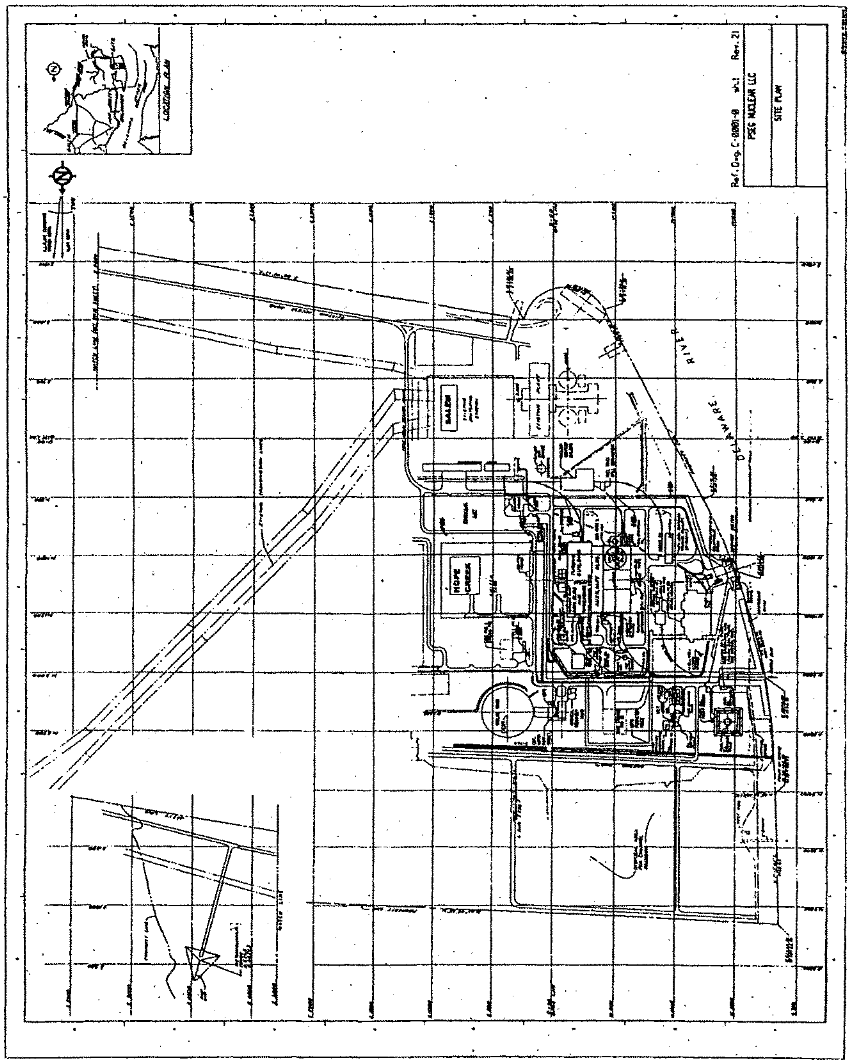
Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
8		UXHF	SALEM UNIT 2 OUTER PENETRATION AREA	Number of Floors: 1 Floor Area(s): 100 Elevation: 171 sq. meters Current Use: The Outer Penetration Area contains support equipment for the operation of the Salem Unit 2 reactor. Prior Use(s): None		
9		UXHF	SALEM UNIT 1 FUEL HANDLING BUILDING	Number of Floors: 3 Floor Area(s): 84 Elevation: 495 sq. meters 100 Elevation: 775 sq. meters 130 Elevation: 775 sq. meters Current Use: Contains the Salem Unit 1 Spent Fuel Pool. Prior Use(s): None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UXHF
Declaration Number:	8	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	SalemNPSSiteMap(APUXHF).pdf		
Comments:			

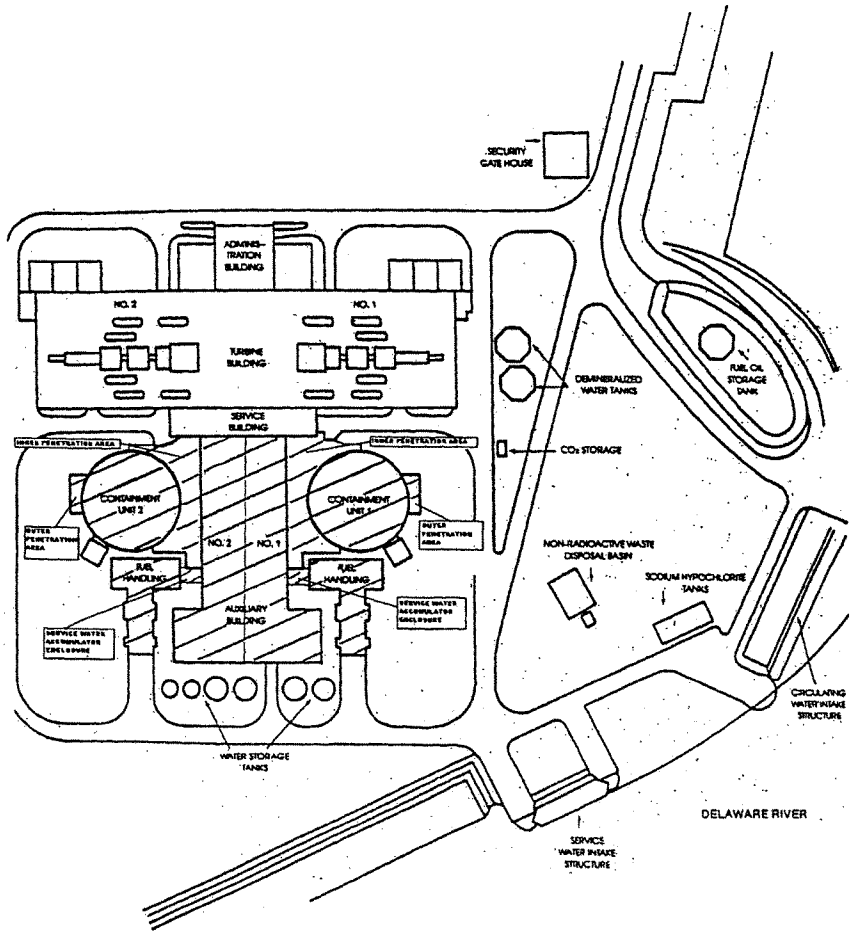
Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
10		UXHF	SALEM UNIT 2 FUEL HANDLING BUILDING	Number of Floors: 3 Floor Area(s): 84 Elevation: 495 sq. meters 100 Elevation: 775 sq. meters 130 Elevation: 775 sq. meters Current Use: Contains the Salem Unit 2 Spent Fuel Pool. Prior Use(s): None		
11		UXHF	SALEM UNIT 1 SERVICE WATER ACCUMULATOR ENCLOSURE	Number of Floors: 1 Floor Area(s): 100 Elevation: 42 sq. meters Current Use: Contains support equipment for the operation of the Salem Unit 1 reactor. Prior Use(s): None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UXHF
Declaration Number:	8	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	SalemNPSSiteMap(APUXHF).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
12		UXHF	SALEM UNIT 2 SERVICE WATER ACCUMULATOR ENCLOSURE	Number of Floors: 1 Floor Area(s): 100 Elevation: 42 sq. meters Current Use: Contains support equipment for the operation of the Salem Unit 2 reactor. Prior Use(s): None		


PSEG NUCLEAR LLC
SITE PLAN
SALEM
HOPE CREEK
DELAWARE
RIVER

SALEM GENERATING STATION LAYOUT



Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UXRF
Declaration Number:	9	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UXRF - San Onofre Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
1		UXRF	Containment	Number of Floors: 5 Floor Area(s): Elev.(-)7'≈400 square meters Elev.15'≈1800 square meters Elev.30'≈1700 square meters Elev.45'≈1700 square meters Elev.63'-6"≈1700 square meters Current Use: Houses reactor vessel and reactor coolant system Prior Uses: none	UXRF-SanOnofreSiteMap.pdf -	
2		UXRF	Safety Equipment Building	Number of Floors: 6 Floor Area(s): Elev.(-)15'-3"≈400 square meters Elev.(-)5'-3"≈500 square meters Elev.8'≈1000 square meters Elev.30'-6"≈1000 square meters Elev.50'-6"≈1000 square meters Elev.70'≈800 square meters Current Use: Houses safe shutdown and accident mitigation equipment and systems Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UXRF
Declaration Number:	9	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UXRF - San Onofre Site Map.pdf		
Comments:			

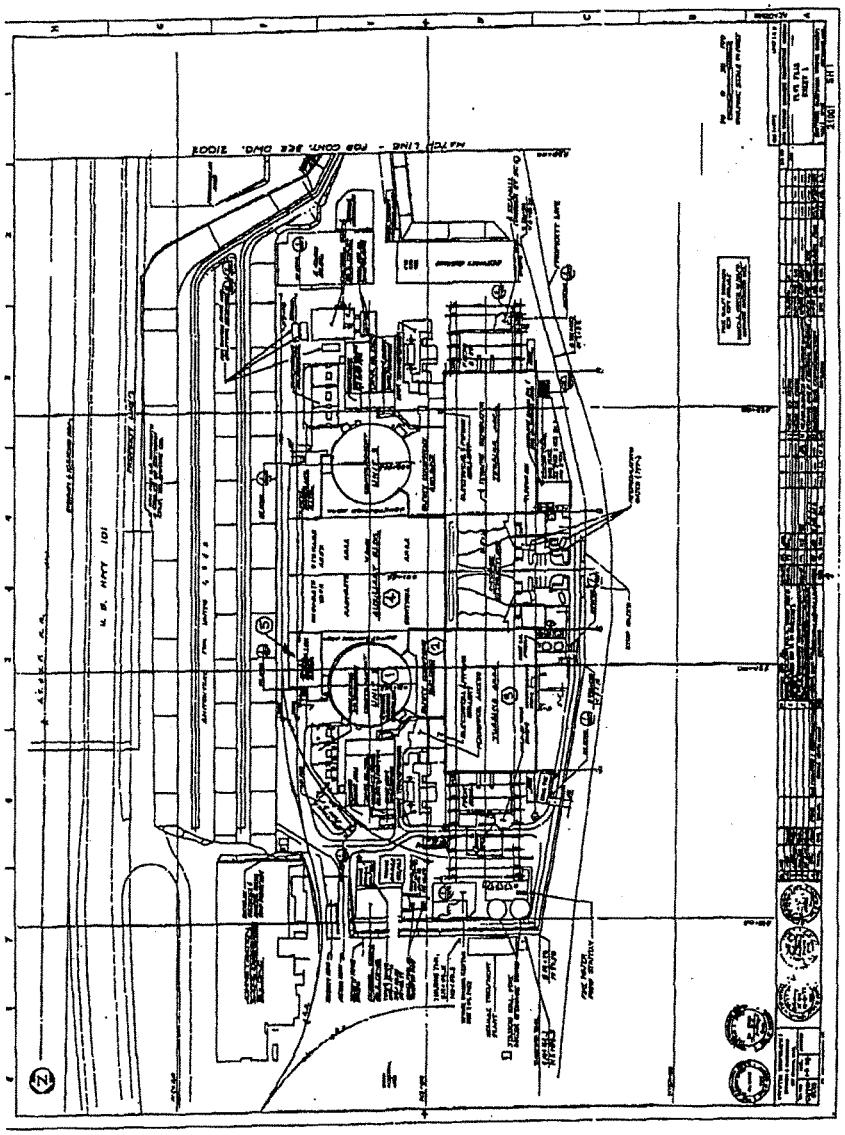
Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
3		UXRF	Turbine Area	Number of Floors: 5 Floor Area(s): Elev.7'≈4600 square meters Elev.30'/34'≈2900 square meters Elev. 43'≈1600 square meters Elev. 56'≈3200 square meters Elev.72'-6"≈3100 square meters Current Use: Supports turbine generator and houses related systems and equipment Prior Uses: none		
4		UXRF	Auxiliary Building - Control Area	Number of Floors: 5 Floor Area(s): Elev.9'≈2500 square meters Elev.30'≈2500 square meters Elev.50'≈2500 square meters Elev.70'≈2500 square meters Elev.85'≈2500 square meters Current Use: Main control room, electrical and control equipment and systems laboratory, and HVAC Prior Uses: none		

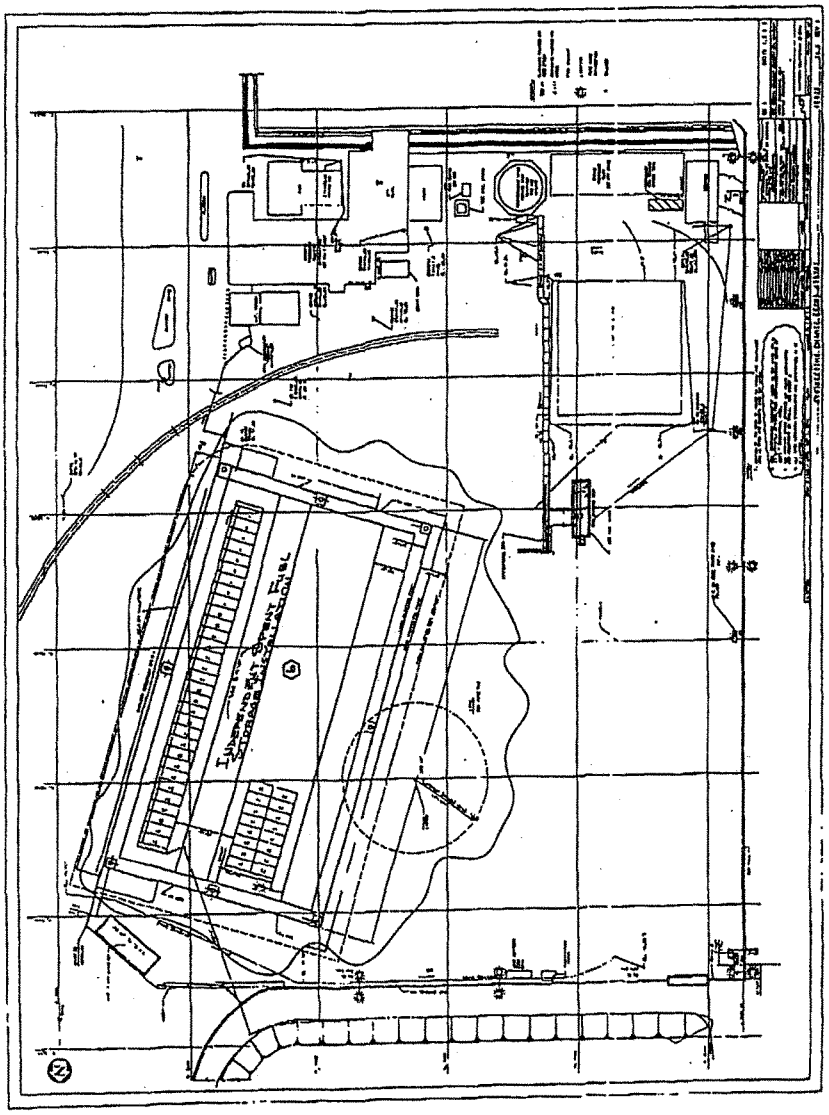
Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UXRF
Declaration Number:	9	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UXRF - San Onofre Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
5		UXRF	Auxiliary Building - Radwaste Area	Number of Floors: 7 Floor Area(s): Elev.9'≈3300 square meters Elev.24'≈1800 square meters Elev.37'≈2800 square meters Elev.50'≈2200 square meters Elev.63'6"≈2200 square meters Elev.85'≈2200 square meters Elev.67'-10"≈1000 square meters Current Use: Radwaste processing equipment and systems Prior Uses: none		
6		UXRF	Auxiliary Building - Penetration Area (C3 change was name change only)	Number of Floors: 5 Floor Area(s): Elev.9'≈500 square meters Elev.30'≈600 square meters each Elev.45'≈600 square meters each Elev.63'-6"≈600 square meters each Elev.95'≈600 square meters each Current Use: Piping and electrical penetrations Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UXRF
Declaration Number:	9	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UXRF - San Onofre Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
7		UXRF	Fuel Handling Building	Number of Floors: 4 Floor Area(s): Elev.17'-6"≈800 square meters Elev.30'≈600 square meters Elev.45'≈300 square meters Elev. 63'-6"≈600 square meters Current Use: Houses new fuel assemblies and spent fuel assemblies Prior Uses: none		
8		UXRF	Independent Spent Fuel Storage Installation	Number of Floors: 1 Floor Area(s): Plant Grade - Elev.19'9"≈20 square meters per storage module Current Use: Dry storage of spent fuel assemblies Prior Uses: none		





Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYLM
Declaration Number:	10	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UYLM - Westinghouse Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
1		UYLM	Building A, Manufacturing Building	Number of Floors: 2 Floor Area(s): Main Level: 37,445 square meters 2nd level: 3,730 square meters Current Use: Manufacture of Nuclear Fuel and Components, administrative offices, laboratories, & cafeteria Prior Uses: none	UYLM-WestinghouseSiteMap.pdf -	
2		UYLM	Building B, Modular Office #1	Number of Floors: 1 Floor Area(s): 265.3 square meters Current Use: Administrative Offices Prior Uses: none		
3		UYLM	Building C, Modular Office #2	Number of Floors: 1 Floor Area(s): 265.3 square meters Current Use: Administrative Offices Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYLM
Declaration Number:	10	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UYLM - Westinghouse Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
4		UYLM	Building D, Modular Office #3	Number of Floors: 1 Floor Area(s): 265.3 square meters Current Use: Administrative Offices Prior Uses: none		
5		UYLM	Building E, Modular Office #4	Number of Floors: 1 Floor Area(s): 265.3 square meters Current Use: Administrative Offices Prior Uses: none		
6		UYLM	Building F, Modular Office #5	Number of Floors: 1 Floor Area(s): 281 square meters Current Use: Administrative Offices Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYLM
Declaration Number:	10	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UYLM - Westinghouse Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
7		UYLM	Building G, Modular Office #6	Number of Floors: 1 Floor Area(s): 265.3 square meters Current Use: Administrative Offices Prior Uses: none		
8		UYLM	Building H, Modular Office #7	Number of Floors: 1 Floor Area(s): 296 square meters Current Use: Administrative Offices Prior Uses: none		
9		UYLM	Building J, Modular Office #8	Number of Floors: 1 Floor Area(s): 281 square meters Current Use: Administrative Offices Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYLM
Declaration Number:	10	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UYLM - Westinghouse Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
10		UYLM	Building K, AP 1000 Training Center	Number of Floors: 1 Floor Area(s): 114 square meters Current Use: Administrative Offices, Training Prior Uses: none		
11		UYLM	Building L, Break Area	Number of Floors: 1 Floor Area(s): 111 square meters Current Use: Break Area Prior Uses: none		
12		UYLM	Building M, Construction Shop	Number of Floors: 1 Floor Area(s): 465 square meters Current Use: Construction and Fabrication of Facility Equipment Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYLM
Declaration Number:	10	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UYLM - Westinghouse Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
13		UYLM	Building N, IT Storage	Number of Floors: 1 Floor Area(s): 65 square meters Current Use: Equipment Storage Prior Uses: none		
14		UYLM	Building P, Storage	Number of Floors: 1 Floor Area(s): 372 square meters Current Use: Equipment Storage Prior Uses: none		
15		UYLM	Building Q, Emergency Response Building	Number of Floors: 1 Floor Area(s): 279 square meters Current Use: Emergency Response Equipment Storage, Administrative Office Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYLM
Declaration Number:	10	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UYLM - Westinghouse Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
16		UYLM	Building R, Maintenance Shop	Number of Floors: 1 Floor Area(s): 186 square meters Current Use: Vehicle/Equipment Maintenance, Equipment Storage, Administrative Office Prior Uses: none		
17		UYLM	Building S, Storage Building	Number of Floors: 1 Floor Area(s): 557 square meters Current Use: Equipment Storage Prior Uses: none		
18		UYLM	Building T, EPA Building	Number of Floors: 1 Floor Area(s): 9 square meters Current Use: Liquid Effluent Discharge Monitoring Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYLM
Declaration Number:	10	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UYLM - Westinghouse Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
19		UYLM	Building U, Control Room	Number of Floors: 1 Floor Area(s): 30 square meters Current Use: Process Waste Treatment Control/Monitoring Prior Uses: none		
20		UYLM	Building V, Distillation Building	Number of Floors: 1 Floor Area(s): 140 square meters Current Use: Process Waste Treatment, Ammonia Recovery Prior Uses: none		
21		UYLM	Building W, Low Level Radioactive Waste Storage	Number of Floors: 1 Floor Area(s): 682 square meters Current Use: Waste Staging, Packaging and Storage Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYLM
Declaration Number:	10	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UYLM - Westinghouse Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
22		UYLM	Building X, Tank Building	Number of Floors: 1 Floor Area(s): 29 square meters Current Use: Water Tank pump Controls Housing Prior Uses: none		
23		UYLM	Building Y, Waterglass Building	Number of Floors: 1 Floor Area(s): 214 square meters Current Use: Process Waste Treatment Prior Uses: none		
24		UYLM	Building Z, Boiler Building #2	Number of Floors: 1 Floor Area(s): 135 square meters Current Use: Plant Boiler #2 Enclosure Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYLM
Declaration Number:	10	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UYLM - Westinghouse Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
25		UYLM	Building AA, ERBIA Equipment Room	Number of Floors: 1 Floor Area(s): 183 square meters Current Use: Electrical Equipment Housing Prior Uses: none		
26		UYLM	Building BB, Catwalk Shed	Number of Floors: 1 Floor Area(s): 174 square meters Current Use: Off-Load Station for UN Liquid Deliveries Prior Uses: none		
27		UYLM	Building CC, Tank Shed	Number of Floors: 1 Floor Area(s): 182 square meters Current Use: Storage Tank Enclosure Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYLM
Declaration Number:	10	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UYLM - Westinghouse Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
28		UYLM	Building DD, DI Water	Number of Floors: 1 Floor Area(s): 167 square meters Current Use: Generation of De-ionized water Prior Uses: none		
29		UYLM	Building EE, Instrument Repair Shop	Number of Floors: 1 Floor Area(s): 35 square meters Current Use: Instrument Repair Prior Uses: none		
30		UYLM	Building FF, Centac Compressor/Boiler Building #1	Number of Floors: 1 Floor Area(s): 125 square meters Current Use: Plant Boiler #1 and Compressor Enclosure Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYLM
Declaration Number:	10	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UYLM - Westinghouse Site Map.pdf		
Comments:			

Entry #	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
31		UYLM	Building GG, Sludge Dewatering Building	Number of Floors: 1 Floor Area(s): 116 square meters Current Use: Sanitary Sewerage Sludge Dewatering Prior Uses: none		
32		UYLM	Building HH, Tank Farm Building	Number of Floors: 1 Floor Area(s): 30 square meters Current Use: Process equipment housing Prior Uses: none		
33		UYLM	Building JJ, Substation Building	Number of Floors: 1 Floor Area(s): 98 square meters Current Use: Electrical Utilities Equipment Housing Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYLM
Declaration Number:	10	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UYLM - Westinghouse Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
34		UYLM	Building KK, Tank Building	Number of Floors: 1 Floor Area(s): 56 square meters Current Use: Water Tank pump Controls Housing Prior Uses: none		
35		UYLM	Building LL, Shed	Number of Floors: 1 Floor Area(s): 232 square meters Current Use: UF6 Cylinder Receipt/Shipment Inspection, Loading/Off Loading Prior Uses: none		
36		UYLM	Building MM, Cylinder Wash Station	Number of Floors: 1 Floor Area(s): 36 square meters Current Use: UF6 Cylinder External Surface Washing and Survey Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYLM
Declaration Number:	10	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UYLM - Westinghouse Site Map.pdf		
Comments:			

Entry No.	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
37		UYLM	Building NN, Respirator Cleaning Facility	Number of Floors: 1 Floor Area(s): 115 square meters Current Use: Respiratory Protection Equipment Cleaning and Inspection Prior Uses: none		
38		UYLM	Building PP, Shed	Number of Floors: 1 Floor Area(s): 89 square meters Current Use: Storage Prior Uses: none		
39		UYLM	Building QQ, Maintenance Lay Down Shed	Number of Floors: 1 Floor Area(s): 117 square meters Current Use: Equipment Storage Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYLM
Declaration Number:	10	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UYLM - Westinghouse Site Map.pdf		
Comments:			

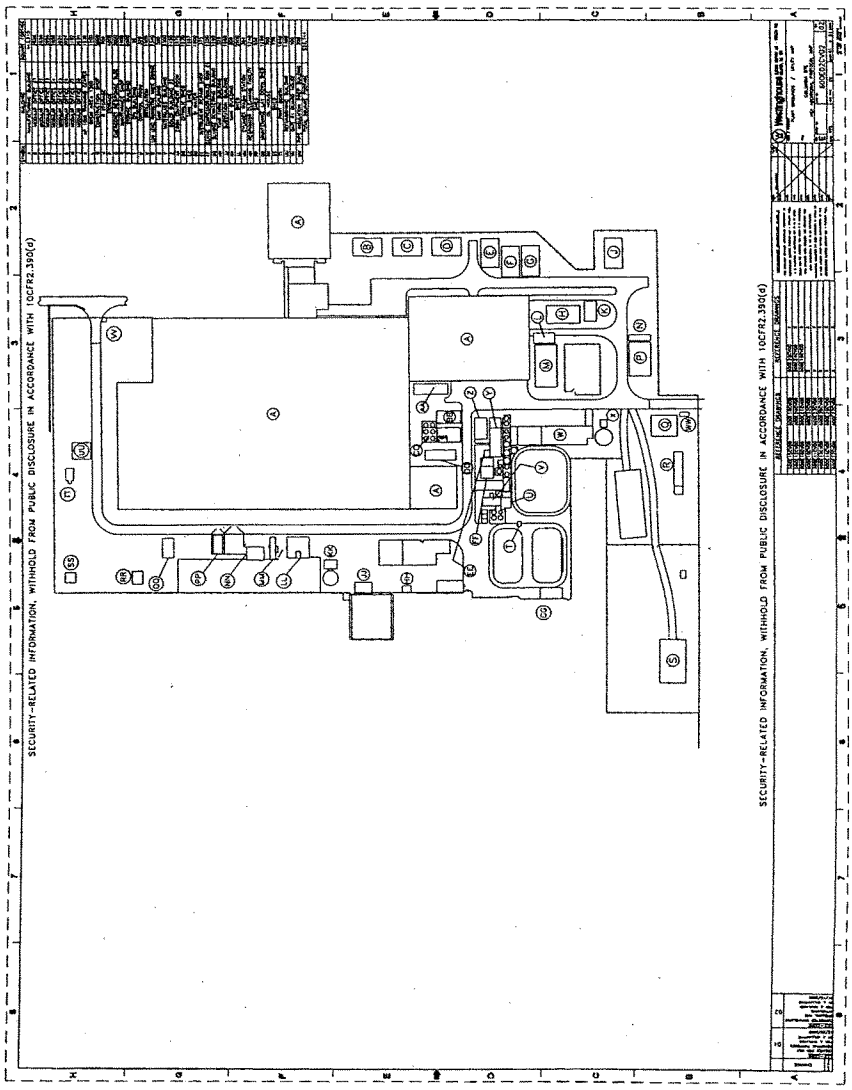
Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
40		UYLM	Building RR, Oil House	Number of Floors: 1 Floor Area(s): 65 square meters Current Use: Storage Prior Uses: none		
41		UYLM	Building SS, Shed	Number of Floors: 1 Floor Area(s): 72 square meters Current Use: Nuclear Fuel Shipping Package refurbishment Prior Uses: none		
42		UYLM	Building TT, Paint Booth	Number of Floors: 1 Floor Area(s): 97 square meters Current Use: Nuclear Fuel Shipping Package Painting Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYLM
Declaration Number:	10	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UYLM - Westinghouse Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
43		UYLM	Building UU, Refurbishing Building	Number of Floors: 1 Floor Area(s): 156 square meters Current Use: Nuclear Fuel Shipping Package Refurbishment and Inspection Prior Uses: none		
44		UYLM	Building VV, Gate 1 Guard House	Number of Floors: 1 Floor Area(s): 19 square meters Current Use: Gate Operation and Access Control Prior Uses: none		
45		UYLM	Building WW, Pipe Insulation Prep Building	Number of Floors: 1 Floor Area(s): 9.3 square meters Current Use: Sewing and preparation of pipe insulation mats Prior Uses: none		

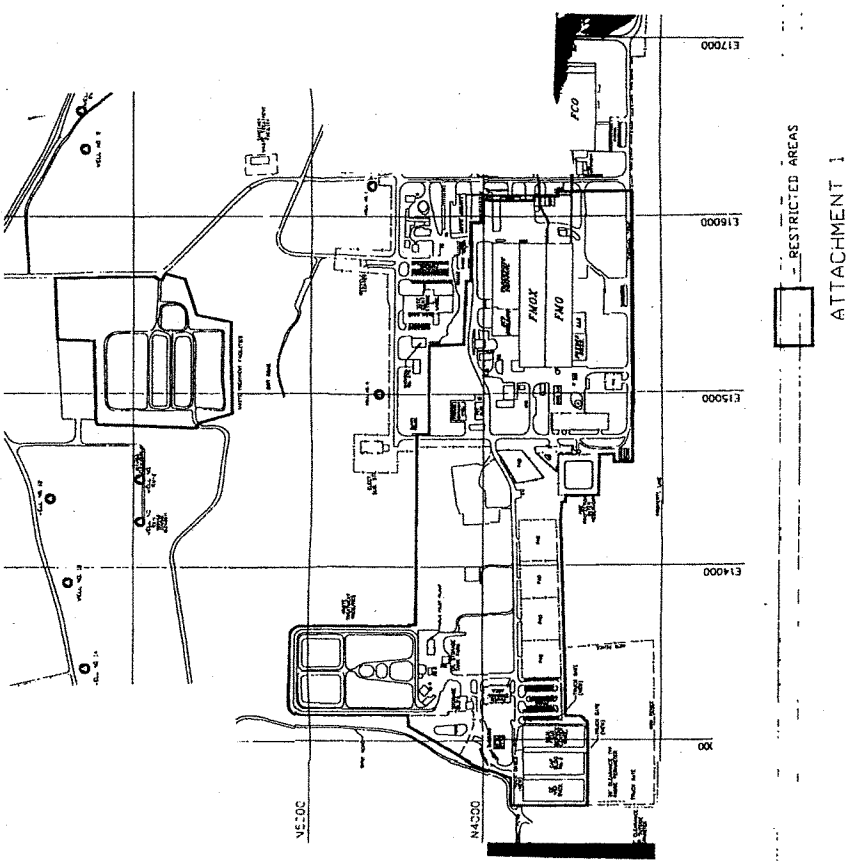
Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYLM
Declaration Number:	10	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	UYLM - Westinghouse Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
46						


SECURITY-RELATED INFORMATION, WITHHOLD FROM PUBLIC DISCLOSURE IN ACCORDANCE WITH 10CFR2.390(d)
SECURITY-RELATED INFORMATION, WITHHOLD FROM PUBLIC DISCLOSURE IN ACCORDANCE WITH 10CFR2.390(d)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UYLJ
Declaration Number:	11	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	GlobalNuclearFuel(APUYLJ).pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
1		UYLJ	FMO/FMOX	Number of Floors: 2 Floor Area(s): First Floor - 12,000 square meters Second Floor - 12,000 square meters Current Use: Manufacture and Storage of low enriched uranium fuel assemblies for commercial nuclear reactors Prior Uses: none		
2		UYLJ	GE Inspection Services	Number of Floors: 1 Floor Area(s): 14,000 square meters Current Use: Reactor Services Support Activities and Container Storage (non SNM license) (NC State licensed activities) Prior Uses: Storage of low enriched uranium lagoon residuals		


E17000
E16000
E15000
E14000
FCO
FNOX
FNO
RESTRICTED AREAS
ATTACHMENT 1

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UXKR
Declaration Number:	12	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	Arkansas Nuclear One, Unit 2 Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
1		UXKR	ANO-1 Containment	Number of Floors: 6 Floor Area(s): 336.5 Elevation: 1113 square meters 357 Elevation: 528 square meters 376.5 Elevation: 576 square meters 386 Elevation: 96 square meters 401.5 Elevation: 798 square meters 424.5 Elevation: 798 square meters Current Use: Containment building for the ANO-1 reactor Prior Uses: none		
2		UXKR	ANO-2 Containment	Number of Floors: 6 Floor Area(s): 336.5 Elevation: 1101 square meters 357 Elevation: 543 square meters 376.5 Elevation: 545 square meters 386 Elevation: 349 square meters 401.5 Elevation: 545 square meters 424.5 Elevation: 545 square meters Current Use: Containment building for ANO-2 reactor Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UXKR
Declaration Number:	12	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	Arkansas Nuclear One, Unit 2 Site Map.pdf		
Comments:			

Entry	Reference	Facility / LOF Code	Building	General Description	Attachments	Comments
3		UXKR	ANO-1 Auxiliary Building	Number of Floors: 7 Floor Area(s): 317 Elevation: 835 square meters 335 Elevation: 2018 square meters 354 Elevation: 2472 square meters 372 Elevation: 2472 square meters 386 Elevation: 2472 square meters 404 Elevation: 1573 square meters 422 Elevation: 236 square meters Current Use: The auxiliary building contains support equipment for the operation of the ANO-1 reactor and the spent fuel pool Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UXKR
Declaration Number:	12	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	Arkansas Nuclear One, Unit 2 Site Map.pdf		
Comments:			

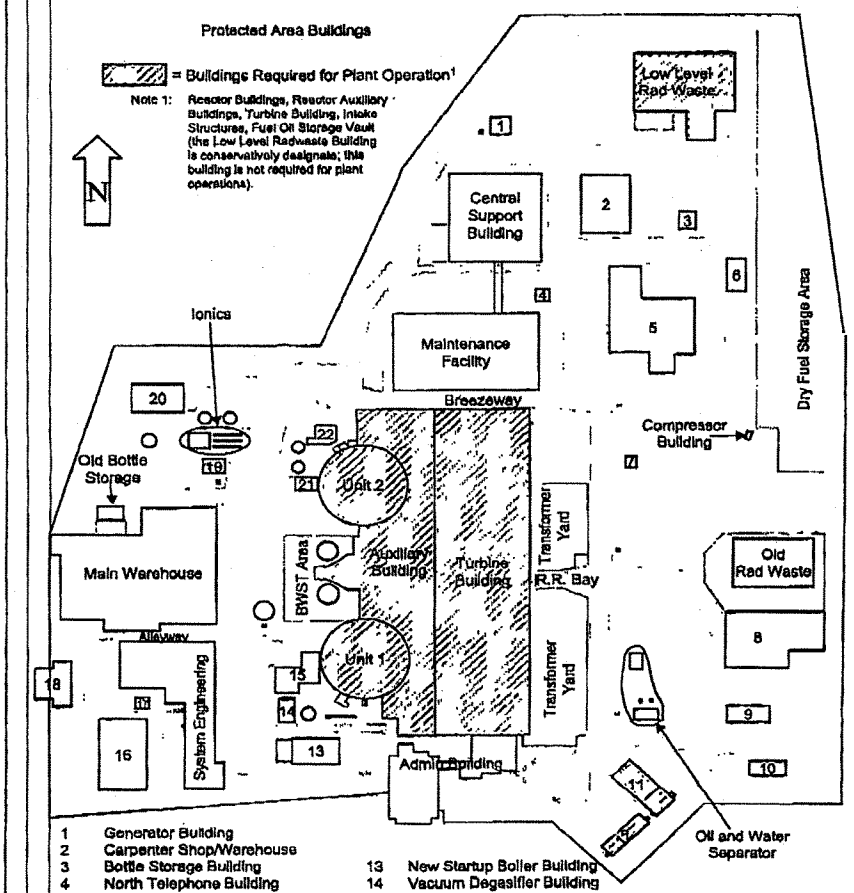
Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
4		UXKR	ANO-2 Auxiliary Building	Number of Floors: 7 Floor Area(s): 317 Elevation: 838 square meters 335 Elevation: 3272 square meters 354 Elevation: 2724 square meters 372 Elevation: 2668 square meters 386 Elevation: 2668 square meters 404 Elevation: 1482 square meters 422 Elevation: 433 square meters Current Use: The auxiliary building contains support equipment for the operation of the ANO-2 reactor and the spent fuel pool. Prior Uses: none		
5		UXKR	ANO-1 Turbine Building	Number of Floors: 3 Floor Area(s): 335 Elevation: 2518 square meters 363.5 Elevation: 2518 square meters 386 Elevation: 2518 square meters Current Use: The turbine building contains the ANO-1 turbine-generator and support equipment. Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UXKR
Declaration Number:	12	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	Arkansas Nuclear One, Unit 2 Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
6		UXKR	ANO-2 Turbine Building	Number of Floors: 3 Floor Area(s): 335 Elevation: 2591 square meters 363.5 Elevation: 2564 square meters 386 Elevation: 2564 square meters Current Use: The turbine building contains the ANO-2 turbine-generator and support equipment. Prior Uses: none		
7		UXKR	ANO-1 Intake Structure	Number of Floors:3 Floor Area(s): 354 Elevation: 200 square meters 366 Elevation: 200 square meters 378 Elevation: 59 square meters Current Use: The intake structure provides cooling water for the ANO-1 condenser and service water for support of ANO-1. Prior Uses: none		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UXKR
Declaration Number:	12	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	Arkansas Nuclear One, Unit 2 Site Map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
8		UXKR	ANO-2 Intake Structure	Number of Floors: 3 Floor Area(s): 354 Elevation: 89 square meters 366 Elevation: 89 square meters 378 Elevation: 25 square meters Current Use: The intake structure provides service water for support of ANO-2 Prior Uses: none		
9		UXKR	Diesel Fuel Storage	Number of Floors:1 Floor Area(s): 328 Elevation: 355 square meters Current Use: This building provides storage for onsite diesel fuel. Prior Uses: none		
10		UXKR	Low-Level Radwaste	Number of Floors: 1 Floor Area(s): 354 Elevation: 1844 square meters Current Use: This building provides storage for low-level radwaste to support both ANO-1 and ANO-2. Prior Uses: none		

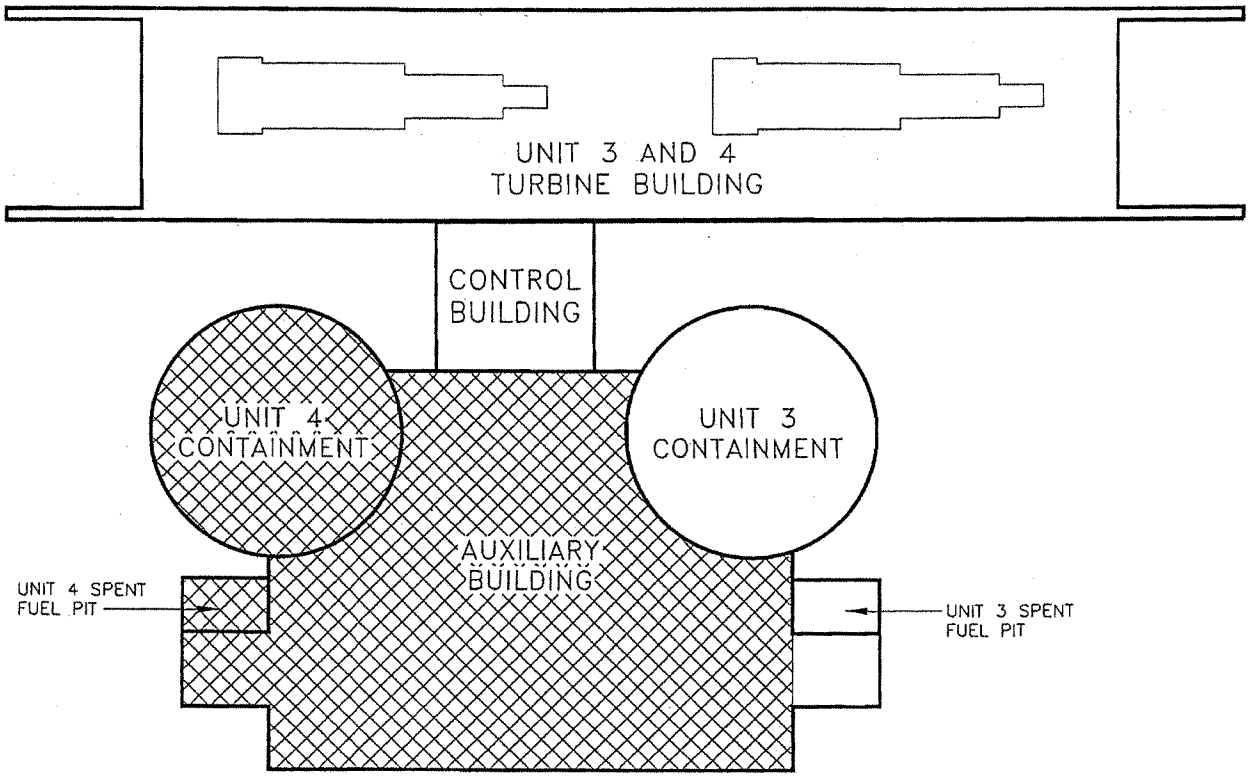

Protected Area Buildings
= Buildings Required for Plant Operation[1]
Note 1: Reactor Buildings, Reactor Auxiliary Buildings, Turbine Building, Intake Structures, Fuel Oil Storage Vault (the Low Level Radwaste Building is conservatively designate; this building is not required for plant operations).
N
Low Level Rad Waste
Central Support Building
Maintenance Facility
Breezeway
Ionics
Old Bottle Storage
Main Warehouse
Auxiliary Building
Unit 2
Unit 1
Turbine Building
R.R. Bay
Transformer Yard
Transformer Yard
BWST Area
Compressor Building
Dry Fuel Storage Area
Old Rad Waste
Admin Building
System Engineering
Oil and Water Separator
1 Generator Building
2 Carpenter Shop/Warehouse
3 Bottle Storage Building
4 North Telephone Building
5 Stone & Webster Offices / Weld Shop
6 Paint House
7 Deluge Building
8 Warehouse #2
9 Oil/Paint Storage Building
10 Hydrogen Building
11 Unit 2 Intake Structure
12 Unit 1 Intake Structure
13 New Startup Boiler Building
14 Vacuum Degasifier Building
15 CA 3
16 Technical Support Building
17 West Telephone Building
18 Primary Access Point (PAP)
19 Diesel Fuel Vault
20 Alternate AC Diesel (Station Blackout)
21 CA 4
22 Unit 2 Acid Storage Building

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UXEH
Declaration Number:	13	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	Turkey Point site map.pdf		
Comments:			

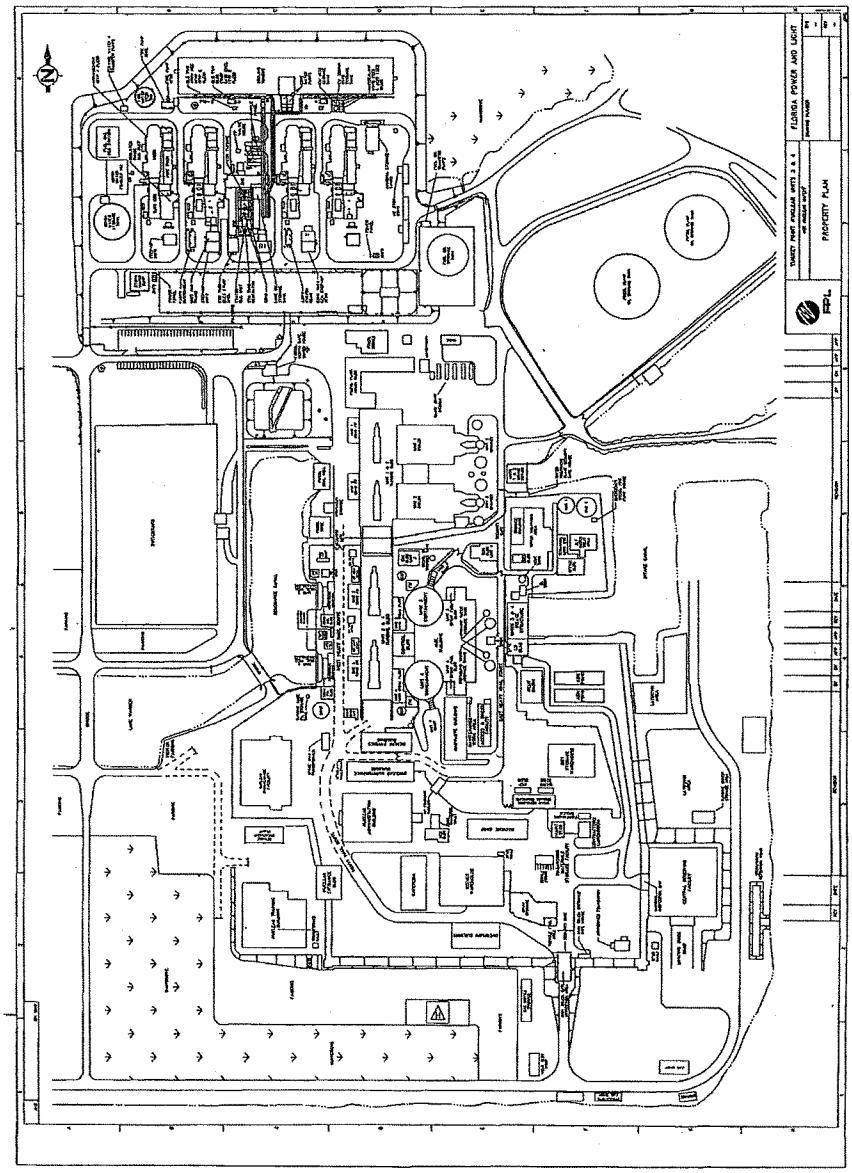
Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
1		UXEH	Turkey Point Auxiliary Building	Number of Floors: 8 Floor Areas: Elevation 2 Feet 95 Square meters Elevation 4 Feet 208 Square meters Elevation 4 Feet 6 inches 215 square meters Elevation 6 feet 16 square meters Elevation 10 feet 1012 square meters Elevation 18 feet 3498 square meters Elevation 42 feet 122 square meters Elevation 58 feet 289 square meters Current use: The auxiliary building contains support equipment for the operation of both Turkey Point Unit 3 and 4 reactors. Prior use: None		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iii)
Site Name:		Site Code:	UXEH
Declaration Number:	13	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:	Turkey Point site map.pdf		
Comments:			

Entry	Reference	Facility/LOF Code	Building	General Description	Attachments	Comments
2		UXEH	Turkey Point Unit 4 Containment	Number of Floors: 3 Floor Areas: Elevation 14 feet 1113 square meters Elevation 30 feet 6 inches 1113 square meters Elevation 58 feet 1113 square meters Current Use: Containment building for the Turkey Point Unit 4 reactor. Prior use: None		



TURKEY POINT UNIT 4 SITE PLAN



Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iv)
Declaration Number:	14	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry #	Reference	Annex I Item	Location	Description of Scale of Operations	Attachments	Comments
1		i	USEC, Inc, 350 Centrifuge Way Oak Ridge, TN 37830 Bldg - High Bay, Centrifuge Technology Center	Manufacture of centrifuge rotor tubes or assembly of gas centrifuges Approximately 35 items produced during the time period.		C000001 BIS location name: USEC High Bay
2		i	USEC, Inc 350 Centrifuge Way Oak Ridge, TN 37830 BLDG - High Bay, B&W Clinch River 400 Centrifuge Way	Manufacture of centrifuge rotor tubes or assembly of gas centrifuges Approximately 2 produced during this time period		C000002 BIS location name: USEC Clinch River
3		viii	ATI WahChang 1600 Old Salem Road, NE Albany, OR 97322 Extrusion Facility.	Manufacture of zirconium tubes Approximately 50 - 100 thousand Kg produced during this time period.		C000004 BIS location name: ATI WahChang
4		xi	GE - Hitachi Nuclear Energy Custom Fabrication 50 Curry Avenue Canonsburg, PA 15317 BLDGS 20,25 and 30	Manufacture of flasks for irradiated fuel. Approximately 20 items produced during the time period		C000005 BIS location name: GE Hitachi Custom Fabrication

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iv)
Declaration Number:	14	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Annex I Item	Location	Description of Scale of Operations	Attachments	Comments
5		viii	Global Nuclear Fuel - Americas 3901 Castel Hayne Road Wilmington, NC 28402 BLDG: Global Nuclear Fuel - Americas Fuel Components Operations	Manufacture of zirconium tubes Approximately 366,500 items produced during the time period.		C000006 BIS location name: Global Nuclear Fuels
6		xii	GE - Hitachi Nuclear Energy 3901 Castle Hayne Road Wilmington, NC 28402 BLDG: GE - Hitachi Nuclear Energy Service Components Operation	Manufacture of reactor control rods. Approximately 131 items produced during the time period.		C000007 BIS location name: GE Hitachi Mfg
7		x	Micron Research Corporation 13746 Route 120 Emporium, PA 15834	Manufacture of nuclear grade graphite. Approximately 2400 (blocks) items produced during the time period.		C000009 BIS location name: Micron Research
8		x	SGL Carbon, LLC 900 Theresia Street St. Marys, PA 15857 BLDG: SGL Building 604	Manufacture of nuclear grade graphite. Approximately 609,545 Kgs produced during the time period.		C000010 BIS location name: SGL-PA

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iv)
Declaration Number:	14	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Annex I Item	Location	Description of Scale of Operations	Attachments	Comments
9		x	SGL Carbon, LLC 307 Jamestown Rd Morganton, NC 28655 BLDG - #24.	Manufacture of nuclear grade graphite. Approximately 16,854,000 Kg produced during the time period.		C000011 BIS location name: SGL-NC
10		x	SGL Carbon, LLC 3931 Carbon Plant Road Ozark, AR 72949 Graphite/Graphite Furnaces/Graphitization	Manufacture of nuclear grade graphite. Approximately 32,510,326 Kgs produced during this time period.		C000012 BIS location name: SGL-AR
11		x	Poco Graphite an Entegris Company 300 Old Greenwood Road Decatur, TX 76234 K Graph Bldg, H and J Graph Bldgs, V graph bldg.	Manufacture of nuclear grade graphite. Approximately 798,552 Kgs produced during the time period.		C000013 BIS location name: Poco Graphite
12		viii	Westinghouse Electric Company, LLC 559 Westinghouse Road Blairsville, PA 15717 Westro & Main bldgs.	Manufacture of zirconium tubes. Approximately 900,000 items produced during this time period		C000032 BIS location name: Westinghouse Blairsville

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iv)
Declaration Number:	14	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Annex I Item	Location	Description of Scale of Operations	Attachments	Comments
13		xii	Westinghouse Electric Company, LLC 178 Shattuck Way Newington, NH 03801 Main Bldg	Manufacture of reactor control rods. Approximately 180 items were produced during the time period.		C000033 BIS location name: Westinghouse Newington
14		xii	Westinghouse Electric Company, LLC 102 Addison Road Windsor, CT 06095	Manufacture of reactor control rods. Approximately 210 items were produced during this time period.		C000034 BIS location name: Westinghouse Windsor
15		viii	Westinghouse Electric Company, LLC 10,000 West 900 South Ogden, UT 84404 Bldg numbers: 53,54,55,56,64,65,67,68,68a,69,70,71,81, and 107.	Manufacture of zirconium tubes. Approximately 1,078,040 Kgs were produced during this time period.		C000035 BIS location name: Westinghouse Ogden

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iv)
Declaration Number:	14	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Annex II Item	Location	Description of Scale of Operations	Attachments	Comments
16	USA-18-2	i	USEC American Centrifuge Plant USEC, Inc. 3930 State Route 23 South Piketon, OH 45661 Bldg: X-7726; Room: X-7725 Conference Room;	Description: Final gas centrifuge assembly for deployment of technology in the American Centrifuge Plant lead cascade operated by USEC, Inc. Running two stands per day with 100% of building being used to assemble centrifuges.; Capacity: 2/day; Extent Used: 100%;		DOE-1208 (ORIGINAL REFERENCE DOE-9-1215)
17		xii	AREVA NP INC. 1724 MT. ATHOS ROAD LYNCHBURG, VA 24504 Control Component (2 areas) - South west area and center plant area of the MAR Facility	Manufacture of reactor control rods. 7000 Items were produced during this time period		NRC Site Reporting Code: AP-YNJ Site Name: Areva - Lynchburg
18		viii	Westinghouse Electric Company Nuclear Fuel - Columbia Site 5801 Bluff Road Colombia, SC 29209 Building A, Manufacturing Building	Manufacture of zirconium tubes. 83,000 Items were produced during this time period		NRC Site Reporting Code: AP-YLM Site Name - Westinghouse - Columbia

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(iv)
Declaration Number:	14	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Annex I Item	Location	Description or Scale of Operations	Attachments	Comments
19		xii	Westinghouse Electric Company Nuclear Fuel - Columbia Site 5801 Bluff Road Colombia, SC 29209 Building A, Manufacturing Building	Manufacture of reactor control rods. 14,000 Items were produced during this time period		NRC Site Reporting Code - AP-YLM Site Name - Westinghouse - Columbia

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(v)
Declaration Number:	15	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Operation	Status	Location	Estimated Annual Production Capacity	Attachments	Comments
1		U Mine	abandoned	Cotter Corporation 7800 E Dorado Place, Suite 210 Englewood, CO 80111	Zero		Mine Name : Schwartzwalder
2		U Mine	abandoned	URI, INC 641 E. FM 1118 Kingsville, TX 78363	zero		Mine name: Vasquez
3		U Mine	abandoned	URI, Inc 641 E FM 1118 Kingsville, TX 78363	zero		Mine name: Rosita Project
4		U Mine	abandoned	Tomcat Mining Corporation 28490 Hwy 141 Naturita, CO 81422	zero		Mine name: C-SM-18

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(v)
Declaration Number:	15	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Operation	Status	Location	Estimated Annual Production Capacity	Attachments	Comments
5		U Mine	abandoned	H & H Mining P.O. Box 26 Nucla, CO 81424	zero		Mine name: Blue Streak
6		U Mine	closed-down	Rio Grande Resources, Inc. Hwy 605 North, 1 mile north of San Mateo, NM Grants, NM 87020 35/20/30 N 107/38/00W	estimated annual capacity is not available		Temporarily closed-down C000016 Mine name: Mt. Taylor Mine
7		U Mine	closed-down	Nuvemco, LLC 426 east Adams Naturita, CO 81422 38/11/58 N 108/50/23 W	to be determined		Temporarily Closed-Down C000017 Mine name: Blue Streak NOI
8		U Mine	closed-down	Nuvemco, LLC 426 East Adams Naturitas, CO 81422 38/13/51 N 108/45/21 W	to be determined		Temporarily Closed-Down C000018 Mine name: Jo Dandy

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(v)
Declaration Number:	15	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Operation	Status	Location	Estimated Annual Production Capacity	Attachments	Comments
9		U Mine	closed-down	Nuvemco, LLC 426 East Adams Naturita, Co 81422 38/15/28 N 108/48/40 W	to be determined		Temporarily Closed-Down C000019 Mine name: Last Chance Mine
10		U Mine	closed-down	Nuvemco, LLC 426 East Adams Naturita, CO 81422 38/14/29 N 108/46/44 W	to be determined		Temporarily Closed-Down C000020 Mine name: Monogram
11		U Mine	operating	Nuvemco, LLC 426 East Adams Naturita, CO 81422 38/37/16 N 108/59/09 W	7500 tons		C000021 Mine name: Octobers
12		U Mine	operating	Denison Mines Corp. Shootering Canyon Road, Hwy 276 MM 23.5 Ticaboo, UT 84533 37/45/24 N 110/42/17 W	66,000 tons		C000022 Mine name: Tony M Mine

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(v)
Declaration Number:	15	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Operation	Status	Name, Location	Estimated Annual Production Capacity	Attachments	Comments
13		U Mine	operating	Denison Mines Corp. Shootering Canyon Road HWY 276 Ticaboo, UT 84533 37/45/24 N 110/42/17 W	30,000 tons		C000023 Mine name: Tony M. Mines Stockpile
14		U Mine	operating	Denison Mines Corp. 9244 W. Hwy 141 Egnar, CO 81325 38/5/11 N 108/50/20 W	17,000 tons		C000024 Mine name: Topaz Mine
15		U Mine	operating	Denison Mines Corp. 9244 W. Hwy 141 Egnar, CO 81325 38/4/47 N 108/49/16 W	25,000 tons		C000025 Mine name: West Sunday Mine
16		U Mine	operating	Denison Mines Corp. 9244 W. Hwy 141 Egnar, CO 81325 38/4/31 N 108/48/51 W	25,000 tons		C000026 Mine name: Sunday/St Jude Mine

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(v)
Declaration Number:	15	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Operation	Status	Location	Estimated Annual Production Capacity	Attachments	Comments
17		U Mine	operating	Denison Mines Corp. 9244 W. Hwy 141 Egnar, CO 81325 38/18/45 N 109/13/3 W	42,000 tons		C000027 Mine name: Pandora Mine
18		U Mine	operating	Denison Mines Corp. 9244 W. Hwy 141 Egnar, CO 81325 38/19/3 N 109/15/5 W	1000 tons		C000028 Mine name: Beaver mine
19		U Mine	operating	Denison Mines Corp. 9244 W. Hwy 141 Egnar, Co 81325 38/3/58 N 109/12/19 W	7,000 tons		C000029 Mine name: Rim Mine
20		U Mine	operating	Denison Mines Corp. 9244 W. Hwy 141 Egnar, CO 81325 38/4/20 N 108/48/24 W	6,000 tons		C000030 Mine name: Sunday Mines Stockpile

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(v)
Declaration Number:	15	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Operation	Status	Location	Estimated Annual Production Capacity	Attachments	Comments
21		U Plants	operating	Denison Mines Corp. 6425 S. Hwy 191 Blanding, UT 84511 37/31/53 N 109/30/23 W	472,680 tons		N000003 Mill name: White Mesa Uranium Mill
22		U Mine	closed-down	Energy Fuels Resources 30100 5/10 Road Gateway, CO 81522 38/39/02 N 109/03/15 W	45,000 tons		Temporarily Closed-Down C000031 Mine name: Whirlwind Mine
23		U Mine and Concentration	operating	Cabot Corporation 1223 County Line Rd Boyertown, PA 19512 Building 73 (Digestion), Building 102 (Ore Residue Storage) 40/20/49N 75/33/32W	4.0 metric tons (U-Nat)		AP-YFB
24		Th Concentration	operating	Cabot Corporation 1223 County Line Rd Boyertown, PA 19512 Building 73 (Digestion), Building 102 (Ore Residue Storage) 40/20/49N 75/33/32W	2.7 metric tons (Th-Nat)		AP-YFB

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(v)
Declaration Number:	15	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Operation	Status	Location	Estimated Annual Production Capacity	Attachments	Comments
25		U Mine and Concentration	closed-down	Cotter Corporation 0502 Fremont County Road 68 Canon City, CO 81212 Canon City Mining Facility 38/23/98N 105/14/05W	1100 metric tons		Temporarily Closed-Down AP-YRK
26		U Mine and Concentration	closed-down	COGEMA Mining, INC Irigaray plant 2751 Irigaray Rd. Kaycee, WY 82639 Irigaray Plant 43/53/16N 107/7/42W	570 metric tons		Temporarily Closed-Down AP-XSQ
27		U Mine and Concentration	closed-down	COGEMA Mining, INC Christensen Ranch Satellite Plant 932 Black Yellow Rd. Wright, WY 82732 Christensen Ranch Satellite Plant 43/48/19N 106/2/20W	340 metric tons		Temporarily Closed-Down AP-XSQ

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(v)
Declaration Number:	15	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Operation	Status	Location	Estimated Annual Production Capacity	Attachments	Comments
28		U Mine and Concentration	closed-down	Kennecott Uranium Company 42 Miles Northwest of Rawlins Rawlins, WY 82301 Sweetwater Mill and Solvent Extraction (SX) Buildings 42/3/7N 107/53/23W	700 metric tons		Temporarily Closed-Down AP-XUQ
29		U Mine and Concentration	operating	Crow Butte Resources, Inc. d/b/a Cameco Resources 86 Crow Butte Road Crawford, NE 69339 Central Plant 42/38/40N 103/21/00W	370 metric tons		AP-ZOQ
30		U Mine and Concentration	operating	Uranium resources, Inc 640 East FM 1118 Kingsville, TX 78363 The Kingsville Dome in situ recovery uranium project including well fields and process facility. 27/23/33N 97/46/13W	450 metric tons		AP-ZOW

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(v)
Declaration Number:	15	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Operation	Status	Location	Estimated Annual Production Capacity	Attachments	Comments
31		U Mine and Concentration	closed-down	Uranium Resources, Inc. HC01, Box 50 San Diego, TX 78384 The Rosita in situ recovery uranium project including well fields and process facility. 27/49/52N 98/24/17W	450 metric tons		Temporarily Closed-Down AP-ZOW
32		U Plants	closed-down	Everrest Exploration INC. Hobson Resin Processing Facility 20278 North FM 81 Hobson, TX 78117 28/56/42N 97/59/19W	Annual Uranium Production Capacity: 453.6 metric tons		Temporarily Closed-Down AP-XWQ
33		U Mine and Concentration	operating	Mestena Uranium LLC. 755 C.R. 315 Encino, TX 78353 Alta Mesa Uranium Recovery Facility 26/54/6N 98/18/54W	577		AP-YFI
34		U Mine and Concentration	total		379,911.07 Metric tons produced during this time period		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(v)
Declaration Number:	15	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	References	Operation	Status	Location	Estimated Annual Production Capacity	Attachments	Comments
35		Th Concentration	total		1.5 Metric tons produced during this time period		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(vi)
Declaration Number:	16	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Part (a) - Holdings as of the last day of the declaration period

Entry	Reference	Location	Chemical Composition	Quantity (tonnes of element U or Th)	Intended Use Code	Intended Use	Attachments	Comments
1		Crow Butte Resources, Inc. d/b/a Cameco Resources 86 Crow Butte Road Crawford, NE 69339 Central Plant	U3O8	12	Nuclear	Conversion for fuel bundles		

234

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Name of State (or Party):	United States of America	Declaration Type:	Nothing to declare
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(vii)
Declaration Number:	17	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:	Nothing to declare		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
1		Enrichment of nuclear material	National Enrichment Facility, Eunice, NM; Louisiana Energy Services; Gas centrifuge enrichment to 5 % U-235; Under construction; planned startup 3d quarter 2009.			DOE-1123
2	USA-14-16	Enrichment of nuclear material		USEC, Inc. (USEC) is conducting uranium enrichment R&D in the United States at Oak Ridge, Tennessee and Piketon, Ohio. USEC anticipates installing this technology in their Piketon, Ohio, plant in 2010. These plans are contingent on continued financing and successful completion of R&D objectives.		DOE-1215 (ORIGINAL REFERENCE DOE-5-1208)
3		Enrichment of nuclear material		GE Hitachi (GEH) is conducting uranium enrichment R&D in the United States at Wilmington, North Carolina. GEH anticipates operating a test-loop at Wilmington in 2008 and commercial operation of their advanced laser-based enrichment technology in 2012. These plans are contingent on continued financing and successful completion of R&D objectives.		DOE-1216

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Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
4	USA-2-60	Reactors		The Department of Energy is supporting the research and development of a plutonium-burning Gas-Turbine Modular Helium Reactor that could augment Russia's plutonium disposition program in the 2025-2030 timeframe. Participants in this effort are General Atomics, Oak Ridge National Laboratory, and the Russian engineering company JSC OKB Mechanical Engineering Afrikantov.		DOE-1220 (ORIGINAL REFERENCE DOE-1-1144)
5	USA-2-51	Reactors		The Department of Energy is supporting research and development related to the operation of the Russian BN-600 fast reactor with a plutonium-burning hybrid core and without a radial breeding blanket as part of the Russian plutonium disposition program. Oak Ridge National Laboratory performs technical and project management oversight of contracts with JSC TVEL, JSC Machine-Building Plant, JSC Energoatom, and the Beloyarsk Nuclear Power Plant. According to current plans, the BN-600 could begin disposition in the 2012-2013 timeframe.		DOE-1221 (ORIGINAL REFERENCE DOE 1-1132)

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Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
6	USA-2-81	Reactors		The Department of Energy's (DOE) Office of Nuclear Physics plans to continue its Nuclear Data program at Brookhaven National Laboratory to provide information for reactor designs. DOE's Office of Advanced Scientific Computing Research also plans to continue its computer simulations at Argonne National Laboratory and Oak Ridge National Laboratory for reactor designs.		DOE-1222 (ORIGINAL REFERENCE DOE-1-1173)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Step	General plans for Development of the Nuclear Fuel Cycle	General plans for Nuclear Fuel Cycle Related Research and Development	Attachments	Comments
7	USA-2-31, USA-2-32	Nuclear fuel fabrication		To accomplish an HEU minimization mandate, the Department of Energy is working to develop high-density low enriched uranium (LEU) fuels to replace the high enriched uranium (HEU) fuels used by civilian research and test reactors, which cannot use existing LEU fuels. DOE is working to develop this replacement LEU fuel by 2011 and to have a Fuel Fabrication Facility operational by 2013 so that DOE can achieve its HEU minimization mandate and research and test reactor conversion commitments. It is expected that the R&D phase will continue through 2014. The LEU fuel development effort, including R&D related to fuel performance qualification and fabrication, is currently being directed by Idaho National Laboratory with support from Argonne National Laboratory and the Y-12 National Security Complex. Additional research and development support on the new LEU fuel is being provided through international collaborations taking place in several countries that include Russia, France, Belgium, South Korea, Argentina, Germany, and Canada.		DOE-1224 (ORIGINAL REFERENCE DOE-1-1108, 1109)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-Related Research and Development	Attachments	Comments
8		Nuclear fuel fabrication		The Department of Energy is preparing facilities and equipment (e.g., hot cells) to perform confirmatory post-irradiation examinations at the Oak Ridge National Laboratory on rods from MOX lead test assemblies (LTAs) that were fabricated with surplus weapon-grade plutonium. Post irradiation examinations of these rods is planned to occur in 2008-2009.		DOE-1225
9	USA-2-81	Nuclear fuel fabrication		The Department of Energy's Office of Nuclear Physics plans to continue its Nuclear Data program at Brookhaven National Laboratory to provide information for fuel fabrication technology		DOE-1226 (ORIGINAL REFERENCE DOE-1-1173)
10	USA-2-33	Critical facilities		There is an evaluation underway on the possible refurbishment, start up and operation of the Transient Reactor Test (TREAT) facility at the Idaho National Laboratory as part of the sodium fast reactor (SFR) and Next Generation Nuclear Project (NGNP) to perform fuel transient testing. Interest in TREAT start up has also been expressed by the Japanese government. Although a restart decision has not been made, it is possible to have TREAT operational within the 10 year planning horizon of this Additional Protocol declaration.		DOE-1228 (ORIGINAL REFERENCE DOE-1-1110)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
11	USA-2-24, USA-2-81	Reprocessing of nuclear fuel		The Department of Energy's Office of Basic Energy Sciences plans to continue programs related to advanced nuclear energy systems at Argonne National Laboratory, Oak Ridge National Laboratory, and Pacific Northwest National Laboratory: fundamental research in actinide chemistry, separations science, radiation-resistant materials, and corrosion-tolerant materials and chemical systems.		DOE-1230 (ORIGINAL REFERENCE DOE-1-1101, 1173)
12		Reactors	Fermi Nuclear Power Plant - Newport, Michigan; Detroit Edison Company; LWR Spent Fuel Independent spent fuel storage installation			DOE-1232
13		Reactors	Byron Station- Byron, IL; Exelon Generation Company, LLC; LWR Spent Fuel Independent spent fuel storage installation			DOE-1233

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
14		Reactors	Bellefonte NPP, Unit 1 - Jackson, AL; Tennessee Valley Authority; 3600 MWTh, 1235 MWE PWR; Construction Permit Issued: 12/24/74.			DOE-1234
15		Reactors	Bellefonte NPP, Unit 2 - Jackson, AL; Tennessee Valley Authority; 3600 MWTh, 1235 MWE PWR; Construction Permit Issued: 12/24/74			DOE-1235
16		Reactors	Watts Bar Nuclear Plant, Unit 2 - Rhea, TN; Tennessee Valley Authority; 3411 MWth, 1165 MWE PWR; Construction Permit Issued: 01/23/73. In August of 2007, the Tennessee Valley Authority (TVA) Board decided to complete construction of Unit 2. In July, 2008, the NRC issued an Order extending the Watts Bar Unit 2 construction permit completion date to March 31, 2013. TVA has resumed construction of the facility with completion of Watts Bar NPP, Unit 2 anticipated by 2013			DOE-1236

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
17		Reactors	Cooper Nuclear Station - Brownville, NE; Nebraska Public Power District, LWR Spent Fuel; Independent spent fuel storage installation			DOE-1237
18		Reactors	Perry Nuclear Power Plant - Perry, OH FirstEnergy Nuclear Operating Company; LWR Spent Fuel; Independent spent fuel storage installation			DOE-1238
19		Reactors	Waterford Steam Electric Generating Station, Unit 3- Taft, La. Entergy Operations, Inc.; LWR Spent Fuel; Independent spent fuel storage installation			DOE-1239
20		Reactors	Braidwood Station, Units 1 & 2- Braceville, IL; Exelon Generation Company, LLC; LWR Spent Fuel; Independent spent fuel storage installation			DOE-1240

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
21		Reactors	LaSalle County Station - Marseilles, IL; Exelon Generation Company; LWR Spent Fuel; Independent spent fuel storage installation			DOE-1241
22		Reactors	Pilgrim Nuclear Power Station - Plymouth, MA; Entergy Nuclear Generation Company; LWR Spent Fuel; Independent spent fuel storage installation			DOE-1242
23		Reactors	Turkey Point Units - Florida City, FL - Florida Power & Light Company; LWR Spent Fuel; Independent spent fuel storage installation			DOE-1243
24		Reactors	Donald C. Cook Nuclear Plant, Units 1 & 2-Bridgeman, MI; Indiana Michigan Power Company; LWR Spent Fuel; Independent spent fuel storage installation			DOE-1244

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
25		Reactors	Clinton Power Station - Clinton, IL ; AmerGen Energy Company, LLC ; LWR Spent Fuel; Independent spent fuel storage installation			DOE-1245
26		Reactors	Nine Mile Point Nuclear Station, Unit 2 - Lycoming, New York ; Nine Mile Point Nuclear Station, LLC; ; LWR Spent Fuel; Independent spent fuel storage installation			DOE-1246
27		Reactors	Crystal River Unit 3 Nuclear Generating Plant - Crystal River, FL; Florida Power Corporation; LWR Spent Fuel; Independent spent fuel storage installation			DOE-1247
28		Reactors	Comanche Peak Steam Electric Station - Glen Rose, TX ; Luminant Generation Company LLC; LWR Spent Fuel; Independent spent fuel storage installation			DOE-1248

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
29		Reactors	Vogtle Electric Generating Plant - Waynesboro, GA; Southern Nuclear Operating Company, Inc.; LWR Spent Fuel; Independent spent fuel storage installation			DOE-1249
30		Reactors	Virgil C. Summer Nuclear Station - Jenkinsville, SC; South Carolina Electric & Gas Company; LWR Spent Fuel; Independent spent fuel storage installation			DOE-1250
31		Reactors	Watts Bar Nuclear Plant - Spring City, TN; Tennessee Valley Authority; LWR Spent Fuel; Independent spent fuel storage installation			DOE-1251
32		Enrichment of nuclear material	U.S. Enrichment Corporation Lead Gas Centrifuge Cascade, Portsmouth Gaseous Diffusion Plant, Piketon, Ohio; Lead Cascade for a gas centrifuge enrichment test facility (Located at Portsmouth Gaseous Diffusion Plant Site); Under construction; planned start of cascade operations 1st quarter 2009.			DOE-1252

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
33		Conversion of nuclear material	DUF6 Conversion Facility, Portsmouth Gaseous Diffusion Plant, Piketon, Ohio Facility for converting depleted uranium hexafluoride to uranium oxide. Planned facility operating life: 21 years; Planned construction start in FY04; planned startup October 2010			DOE-1253
34		Conversion of nuclear material	DUF6 Conversion Facility, Paducah Gaseous Diffusion Plant, Paducah, Kentucky Facility for converting depleted uranium hexafluoride to uranium oxide. Planned facility operating life: 25 years. Planned construction start in FY04; planned start up February 2011			DOE-1254
35		Enrichment of nuclear material	In 2007 Cogema submitted an application to restart the Christensen Ranch ISL facility in Wyoming. The Christensen Ranch project area is located along the Campbell-Johnson County boundary, about 30 miles north-northeast of the town of Midwest, Wyoming, and 50 miles southwest of Gillette, Wyoming. The application was received in April 2007 and the NRC completed the review in September 2008.			DOE-1255
36		Enrichment of nuclear material	In 2007 Cameco (Crow Butte Resources, Inc.) submitted an application to expand the North Trend ISL facility near Crawford, Nebraska. The application was received in June 2007. The NRC has not yet completed the review.			DOE-1256

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
37		Enrichment of nuclear material	In 2007 Cameco (Crow Butte Resources, Inc.) submitted an application to expand the Plant Upgrade ISL facility near Crawford, Nebraska. The application was received in October 2006 and the NRC completed the review in December 2007.			DOE-1257
38		Enrichment of nuclear material	In 2008 Lost Creek ISR, LLC submitted an application for a new ISL (Lost Creek ISL) to be located in Sweetwater County, Wyoming. The application was received in March 2008. The NRC has not yet completed the review.			DOE-1258
39		Enrichment of nuclear material	In 2008 Uranerz Energy Corp. submitted an application for a new ISL (Hank and Nichols ISL) to be located in Campbell and Johnson Counties, Wyoming. The application was received in December 2007. The NRC has not yet completed the review.			DOE-1259
40		Enrichment of nuclear material	In 2008 Uranium One (Energy Metals Corporation) submitted an application for a new ISL (Moore Ranch ISL) to be located in Campbell County, Wyoming. The application was received in October 2007. The NRC has not yet completed the review.			DOE-1260

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
41		Enrichment of nuclear material	In 2009 the NRC anticipates Powertech Uranium Corporation to submit an application for a new ISL (Dewey Burdock ISL) to be located in Custer and Fall River Counties, South Dakota. A letter of intent was submitted to the NRC in January 2007. The application is expected to be received by the NRC in December 2008.			DOE-1261
42		Enrichment of nuclear material	In 2009 the NRC anticipates Lost Creek ISR, LLC to submit an application for an expansion of the Lost Creek ISL located in Sweetwater County, Wyoming. A letter of intent was submitted to the NRC in March 2008. The application is expected to be received by the NRC in January 2009.			DOE-1262
43		Enrichment of nuclear material	In 2009 the NRC anticipates UR-Energy Corp. to submit an application for a new ISL (Lost Soldier ISL) to be located in Sweetwater County, Wyoming. A letter of intent was submitted to the NRC in March 2008. The application is expected to be received by the NRC in January 2009.			DOE-1263
44		Enrichment of nuclear material	In 2009 the NRC anticipates Uranium One (Energy Metals Corporation) to submit an application for a new ISL (Ludeman ISL) to be located in located in Converse County, Wyoming. A letter of intent was submitted to the NRC in March 2008. The application is expected to be received by the NRC in March 2009.			DOE-1264

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-Related Research and Development	Attachments	Comments
45		Enrichment of nuclear material	In 2009 the NRC anticipates Cameco (Power Resources, Inc.) to submit an application for an expansion of the Smith Ranch/Highland CPP ISL located in Converse County, Wyoming. A letter of intent was submitted to the NRC in March 2008. The application is expected to be received by the NRC in May 2009.			DOE-1265
46		Enrichment of nuclear material	In 2009 the NRC anticipates Cameco (Crow Butte Resources, Inc.) to submit an application for an expansion of the Three Crow ISL located near Crawford, Nebraska. A letter of intent was submitted to the NRC in March 2008. The application is expected to be received by the NRC in June 2009.			DOE-1266
47		Enrichment of nuclear material	In 2009 the NRC anticipates Uranium Energy Corporation to submit an application for a new heap leach (Grants Ridge Heap Leach) to be located in Cibola County, New Mexico. A letter of intent was submitted to the NRC in February 2008. The application is expected to be received by the NRC in July 2009.			DOE-1267
48		Enrichment of nuclear material	In 2009 the NRC anticipates Uranium One (Energy Metals) to submit an application for a new ISL (Allemand-Ross ISL) to be located in located in Converse County, Wyoming. A letter of intent was submitted to the NRC in March 2008. The application is expected to be received by the NRC in September 2009.			DOE-1268

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
49		Enrichment of nuclear material	In 2010 the NRC anticipates Neutron Energy to submit an application for a new conventional uranium mill (Marquez) to be located in McKinley County, New Mexico. A letter of intent was submitted to the NRC in March 2008. The application is expected to be received by the NRC in December 2009.			DOE-1269
50		Enrichment of nuclear material	In 2010 the NRC anticipates Kennecott Uranium Co. to submit an application for an expansion of the Sweetwater Resin Elution facility located in Sweetwater County, Wyoming. A letter of intent was submitted to the NRC in March 2008. The application is expected to be received by the NRC in January 2010.			DOE-1270
51		Enrichment of nuclear material	In 2010 the NRC anticipates Rio Grande Resources to submit an application for a new conventional uranium mill (Mt. Taylor) to be located in northwestern New Mexico about 60 miles (100 km) west of Albuquerque. A letter of intent was submitted to the NRC in March 2008. The application is expected to be received by the NRC in January 2010.			DOE-1271

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
52		Enrichment of nuclear material	In 2010 the NRC anticipates Uranium King Corporation to submit an application for a new conventional uranium mill (Apex Mill) to be located in Lander County, Nevada. A letter of intent was submitted to the NRC in September 2008. The application is expected to be received by the NRC in June 2010.			DOE-1272
53		Enrichment of nuclear material	In 2010 the NRC anticipates Strathmore Minerals Corporation to submit an application for a new conventional uranium mill (Roca Honda) to be located in McKinley County, New Mexico. A letter of intent was submitted to the NRC in April 2007. The application is expected to be received by the NRC in September 2010.			DOE-1273
54		Enrichment of nuclear material	In 2010 the NRC anticipates Concentric to submit an application for a new conventional uranium mill (Yavapai County) to be located in Yavapai County, Arizona. A letter of intent was submitted to the NRC in March 2008. The application is expected to be received by the NRC in October 2010.			DOE-1274
55		Enrichment of nuclear material	In 2011 the NRC anticipates Wildhorse Energy to submit an application for a new ISL (West Alkali Creek ISL) to be located in located in Fremont County, Wyoming. A letter of intent was submitted to the NRC in March 2008. The application is expected to be received by the NRC in December 2010.			DOE-1275

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
56		Enrichment of nuclear material	In 2011 the NRC anticipates Strathmore Minerals Corporation to submit an application for a new ISL (Reno Creek ISL) to be located in located in Campbell County, Wyoming. A letter of intent was submitted to the NRC in March 2008. The application is expected to be received by the NRC in March 2011			DOE-1276
57		Enrichment of nuclear material	In 2011 the NRC anticipates Wildhorse Energy to submit an application for a new ISL and conventional uranium mill (Sweetwater) to be located in Sweetwater County, Wyoming. A letter of intent has not been submitted to the NRC yet. The application is expected to be received by the NRC in May 2011.			DOE-1277
58		Enrichment of nuclear material	In 2011he NRC anticipates Cameco (Crow Butte Resources, Inc.) to submit an application for an expansion of the Marsland ISL located near Marsland, Nebraska. A letter of intent was submitted to the NRC in March 2008. The application is expected to be received by the NRC in July 2011.			DOE-1278
59		Enrichment of nuclear material	In 2011 the NRC anticipates Strathmore Minerals Corporation to submit an application for a new ISL (Sky ISL) to be located in located in Fremont County, Wyoming. A letter of intent was submitted to the NRC in May 2007. The application is expected to be received by the NRC in September 2011.			DOE-1279

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Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
60		Enrichment of nuclear material	In 2012the NRC anticipates Strathmore Minerals Corporation to submit an application for a new conventional uranium mill (Gas Hills) to be located in Fremont County, Wyoming. A letter of intent was submitted to the NRC in March 2008. The application is expected to be received by the NRC in October 2011.			DOE-1280

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
61	USA-2-70	Reactors		Small and Medium Sized (Grid Appropriate) Reactors are being developed by U.S. commercial vendors, including commercial funding for work performed at Department of Energy (DOE) laboratories. These designs have domestic and international applications. They may provide electrical power sized for smaller power grids in developing nations and remote locations, and may also provide a heat source or dedicated power for industrial applications. Companies and laboratories involved in this technology include General Electric, Nuscale Power, Hyperion, Babcock and Wilcox Westinghouse, Argonne National Laboratory, Lawrence Livermore National Laboratory, Los Alamos National Laboratory, Oak Ridge National Laboratory, Sandia National Laboratory. The DOE has no active technology development program supporting grid appropriate reactors, but has surveyed and assessed the safety, economics, performance, etc. of several such reactor concepts. It should be noted that DOE's support for Pebble Bed Modular Reactor development is for the Next Generation Nuclear Project objectives and not for the Grid Appropriate Reactors, although there are some commonalities.		DOE-1294 (ORIGINAL REFERENCE DOE-1-1154)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
62	USA-2-30, USA-2-34, USA-2-35, USA-2-36, USA-2-37, USA-2-43, USA-2-50, USA-2-53, USA-2-54, USA-2-56, USA-2-72, USA-2-74, USA-2-75, USA-2-84, USA-2-85, USA-2-87, USA-2-104, USA-2-109, USA-2-110, USA-2-111, USA-2-112, USA-2-113, USA-2-115, USA-2-120, USA-2-122, USA-2-123	Reactors		Light Water Reactor life extension program will provide the technical basis to support license extensions for the current fleet of nuclear power plants in the United States past 60 years. Department of Energy R&D will be started up at seven locations (Idaho National Laboratory, Oak Ridge National Laboratory, Pacific Northwest National Laboratory, Sandia National Laboratory, University of Michigan, Massachusetts Institute of Technology, and the Electric Power Research Institute). There are plans to increase the number of participating locations as the program develops. Key milestones include: FY 2009 Program initiation; First results on metal and concrete aging studies; development of computational architecture for safety analysis, FY 2012 Utility collaborative demonstration programs in digital technologies, prognostics, and sensors, FY 2014 Risk-informed characterization of safety margins in aging plants, FY 2016 Demonstratable quantification of material aging phenomena and effects, and FY 2020 Qualified advanced fuel concepts for implementation. Schedule is subject to the availability of funds.		DOE-1297 (ORIGINAL REFERENCE DOE-1-1107,1111,1112, 1113,1114,1120, 1131,1134,1135, 1138,1156,1158, 1159,1177,1179, 1182,1201,1206, 1207,1209,1210, 1211,1282,1288, 1290,1291)

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Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
63	USA-2-49, USA-2-67, USA-2-105	Nuclear fuel fabrication		TRISO coated particle fuels using uranium oxy-carbide kernels are being developed as part of the Department of Energy's GEN IV program in support of the Next Generation Nuclear Plant project. Fuel is being developed, fabricated, and tested by the Idaho National Laboratory, Los Alamos National Laboratory, Oak Ridge National Laboratory and B&W corporation. International cooperation is underway with France on this technology.		DOE-1298 (ORIGINAL REFERENCE DOE-1-1130,1151,1202)

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Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
64	USA-2-28, USA-2-29, USA-2-39, USA-2-49, USA-2-57, USA-2-59, USA-2-69, USA-2-104, USA-2-105, USA-2-106, USA-2-107, USA-2-108	Reactors		Department of Energy (DOE) R&D supporting the Next Generation Nuclear Plant (NGNP) is a major program area to demonstrate the commercial feasibility of high temperature gas reactor technology in the United States. NGNP is a major focus of the U.S. participation in the Generation IV International Forum. NGNP-related R&D is being performed at over 30 Universities awarded on a competitive basis with annual awards. R&D is conducted at the following DOE laboratories: Idaho National Laboratory, Oak Ridge National Laboratory, Argonne National Laboratory, Sandia National Laboratory, with other labs as potential sites for future experiments and analyses. Many nuclear industry firms are involved in the project R&D including Westinghouse, B&W, General Atomics (GA), AREVA, and PBMR Pty Ltd. The following major R&D planning milestones support initial NGNP criticality in 2021: -Commence commercial fuel irradiation testing in 2009 -Commence graphite creep experiments in 2009 -Complete final fuel irradiation testing in 2017 Schedule is subject to the availability of funds.		DOE-1299 (ORIGINAL REFERENCE DOE-1-1105,1106,1116, 1130,1139,1143, 1153,1201,1202, 1203,1204,1205)

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Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
65	USA-2-66, USA-2-82, USA-2-28, USA-2-29	Reactors		The U.S., through the Department of Energy (DOE), is participating in the Generation IV International Forum (GIF) activities associated with Gas-Cooled Fast Reactor System, Lead-Cooled Fast Reactor System, Molten Salt Reactor System, and Supercritical-Water-Cooled Reactor System. There are no specific significant milestones of DOE R&D collaborations associated with these efforts other than to provide U.S. participation and engagement in the international efforts lead by other GIF partners. These Generation IV R&D programs are very limited and provide modest U.S. participation in the Generation IV International Forum.		DOE-1300 (ORIGINAL REFERENCE DOE-1-1150,1174,1105, 1106)
66		Enrichment of nuclear material	In 2012 the NRC anticipates Cameco (Crow Butte Resources, Inc.) to submit an application for an expansion of the Ruby Ranch ISL located in Campbell County, Wyoming. A letter of intent was submitted to the NRC in March 2008. The application is expected to be received by the NRC in October 2011			DOE-1301

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
67	USA-2-22, USA-2-23, USA-2-46, USA-2-62, USA-2-64, USA-2-71, USA-2-72, USA-2-76, USA-2-79, USA-2-82, USA-2-89, USA-2-91, USA-2-95, USA-2-97, USA-2-102, USA-2-121, USA-2-124, USA-2-125	Nuclear fuel fabrication		Fuel R&D under the Advanced Fuel Cycle Initiative is evaluating alternatives and developing transmutation fuel for possible use in U.S. light water reactors (LWR) in the near term and possible use in sodium fast reactors (SFR) in the long term. Milestones supported by Brookhaven National Laboratory, Idaho National Laboratory, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, and Oak Ridge National Laboratory include: - Hot-cell capability available for SFR metal fuel rodlet fabrication in 2010 - Complete mixed oxide fuel technical specifications for U.S. LWRs in 2014 - Select 1st generation SFR fuel type in 2016 Schedule is subject to the availability of funds		DOE-1302 (ORIGINAL REFERENCE DOE-1-1094,1096,1124, 1146,1148,1155, 1156,1160,1170, 1174,1185,1187, 1192,1194,1199, 1289,1292,1293)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
68	USA-2-23, USA-2-25, USA-2-26, USA-2-58, USA-2-77, USA-2-80, USA-2-88, USA-2-90, USA-2-99, USA-2-121, USA-2-125, USA-2-126	Processing of waste		Work is underway at three Department of Energy national laboratories (Brookhaven National Laboratory, Idaho National Laboratory, and Oak Ridge National Laboratory) to develop robust waste form technology for possible implementation in the U.S., and will be further defined following a Record of Decision for the Global Nuclear Energy Partnership Programmatic Environmental Impact Statement Record of Decision scheduled for 2009. This program will reduce the burden on the proposed geologic repository at Yucca Mountain, Nevada, in terms of reduced volume, thermal load, and radiotoxicity, and is closely linked with activities discussed under Reprocessing of Nuclear Fuel. These activities are working toward developing waste form production demonstrations in 2016 and waste form testing in 2017. Schedule is subject to the availability of funds		DOE-1303 (ORIGINAL REFERENCE DOE-1-1096,1102,1103, 1140,1162,1171, 1183,1186,1196, 1289,1293,1295)

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Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
69	USA-2-23, USA-2-24, USA-2-25, USA-2-26, USA-2-39, USA-2-46, USA-2-47, USA-2-58, USA-2-77, USA-2-93, USA-2-96, USA-2-98, USA-2-99, USA-2-101, USA-2-103, USA-2-114, USA-2-117, USA-2-118, USA-2-119, USA-2-121, USA-2-124, USA-2-125, USA-2-126	Reprocessing of nuclear fuel		Work is underway at seven Department of Energy national laboratories (Argonne National Laboratory, Brookhaven National Laboratory, Idaho National Laboratory, Lawrence Livermore National Laboratory, Oak Ridge National Laboratory, Pacific Northwest National Laboratory, and Savannah River Site) to develop spent nuclear fuel separations technology for possible implementation in the U.S., and will be further defined following a Record of Decision for the Global Nuclear Energy Partnership Programmatic Environmental Impact Statement Record of Decision scheduled for 2009. Pending this decision, advanced reprocessing technology R&D will explore the production of material for mixed oxide fuel recycling in U.S. light water reactors in the 2020 timeframe and sodium fast reactor prototype operation in the 2020-2030 timeframe. This work includes a variety of aqueous co-extraction processes, actinide management alternatives, and electrochemical (pyro) processing. These activities are closely linked with advanced waste form development discussed under Processing of intermediate or high-level waste. Cooperation with France (CEA), Japan (JAEA), and the United Kingdom (National Nuclear Laboratory) involves aqueous separations technology while cooperation with South Korea involves elements of electrochemical (pyro) processing technology. Cooperation with		DOE-1304 (ORIGINAL REFERENCE DOE-1-1096,1101,1102, 1103,1116,1124, 1125,1140,1162, 1190,1193,1195, 1196,1198,1200, 1214,1284,1286, 1287,1289,1292, 1293,1295)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
				Canada (AECL) focuses on potential uses, in CANDU reactors, of products of separations processes. Schedule is subject to the availability of funds		

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments
70	USA-2-21, USA-2-22, USA-2-26, USA-2-27, USA-2-40, USA-2-41, USA-2-42, USA-2-44, USA-2-45, USA-2-46, USA-2-47, USA-2-55, USA-2-61, USA-2-63, USA-2-65, USA-2-68, USA-2-74, USA-2-78, USA-2-83, USA-2-89, USA-2-92, USA-2-94, USA-2-99, USA-2-100, USA-2-111, USA-2-116, USA-2-118, USA-2-121, USA-2-124, USA-2-125	Reactors		The Department of Energy (DOE) is engaged in Sodium-Cooled Fast Reactor (SFR) R&D, and this R&D will be further defined following a DOE Record of Decision for the Global Nuclear Energy Partnership Programmatic Environmental Impact Statement scheduled for 2009. R&D is underway at nine DOE laboratories (Argonne National Laboratory, Brookhaven National Laboratory, Idaho National Laboratory, Lawrence Livermore National Laboratory, Los Alamos National Laboratory, Oak Ridge National Laboratory, Pacific Northwest National Laboratory, Sandia National Laboratories, and Savannah River Site) and includes work being developed under a Trilateral Agreement with France and Japan to harmonize efforts supporting a prototype SFR in the 2020-2030 timeframe. While specific activities are underway domestically and under limited bilateral agreements with the French and Japanese governments, definition of and commitment to detailed collaboration under the trilateral agreement is still under development. The SFR R&D program is a major focus of the U.S. participation in the Generation IV International Forum. Schedule is subject to the availability of funds		DOE-1305 (ORIGINAL REFERENCE DOE-1-1093,1094,1103, 1104,1117,1118, 1119,1121,1122, 1124,1125,1137, 1145,1147,1149, 1152,1158,1163, 1176,1185,1189, 1191,1196,1197, 1209,1283,1286, 1289,1292,1293)

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.a.(x)
Declaration Number:	18	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	General Plans for Development of the Nuclear Fuel Cycle	General Plans for Nuclear Fuel Cycle-related Research and Development	Attachments	Comments

Name of State (or Party):	United States of America	Declaration Type:	New information
Safeguards Agreement INFCIRC:		Protocol Article:	2.b.(i)
Declaration Number:	19	Declaration Date:	7/5/2009
Declaration Period as of:	11/3/2008		
Attachments:			
Comments:			

Entry	Reference	Fuel Cycle Stage	Location	General Description	Attachments	Comments
1		Enrichment of nuclear material	Westinghouse Electric Company LLC 1332 Beulah Road Pittsburgh, PA 15235 BLDG: STC-401.	Project Title: Gd Enrichment. Project ID: 753573. Project Level: Demonstration. R&D Activities: Determination of feasibility to make Gd (BH4)3 and analysis of economics. The objective is to isotopically separate Gd isotopes using aerodynamic enrichment process. The project started on 2005-01-01 and is scheduled to end on 2028-12-31. Collaborators: (1) INVAP, F.P. Moreno 1089-C.C. 961, San Carlos de Bariloche, Rio Negro, Argentina. (2) Klydon (Pty) Ltd., Building 46, CSIR Campus, Meiring Naude Road,, Brummeria, South Africa.		C000043 BIS location name: Westinghouse Pittsburgh (Act 8)
2		Reprocessing of nuclear fuel	G.E. Global Research Center One Research Circle Engineering Systems Building, Room 106, Niskayuna, NY 12309.	Project Title: Sustainable Energy Advanced Technology Program. Project ID: 223606-1001. Project Level: Experiment. R&D Activities: Develop anode and sensor technologies for the direct electrolytic reduction of uranium. The objective is to reduce cost and enable commercialization of this process. The project started on 2008-01-01 and is scheduled to end on 2008-12-31.		C000014, BIS location name: GE Global Research