SSAC QUESTIONNAIRE

	Item	Questions/Instructions	Remarks	Documentation
A	**State Level**			
1	Relationships among national laws, a SG agreement with the additional protocol and other agreements for nuclear material accounting and control	Describe the structure (chart) of relationships among national laws, an IAEA SG agreement, bilateral/trilateral agreements for nuclear material accounting and control.	If there is any national regulations, provisions and rules under the national laws, describe the relationships among them.	The Atomic Energy Act establishes the national requirements and establishes authorities for implementing international nuclear treaties.
				For NRC-licensed facilities, international safeguards agreement requirements are covered by 10 CFR 75, while domestic material accounting is covered in 10 CFR 74. Regulations to implement the Additional Protocol will be included in a revised 10 CFR 75.
2	**SSAC**			
2.1	Objectives	Describe the objectives in establishing the SSAC.	If there is any difference between national and international objectives, describe them.	Domestic safeguards requirements are implemented to ensure that licensees are able to protect, control and account for their nuclear materials and to prevent their theft by a subnational adversary International safeguards requirements are implemented to demonstrate compliance with international nonproliferation commitments and to promote the nonproliferation of nuclear weapons.
			Are there separate SSACs for national and international objectives?	No. Domestic safeguards requirements form the basis for international safeguards activities. However, domestic and international requirements are overseen by different staff within NRC
		Describe the covered nuclear activities, specified equipment and non-nuclear material defined on AP.	Such as Ore mining, Uranium ore concentrate, UOC production, UOC conversion, DNLEU fabrication, MOX fabrication, Enrichment, LWR w/o MOX, LWR with MOX, Storage, Research reactors, Critical assembly, ATR, FBR, Reprocessing, R&D facilities, Waste depository	The U.S. has a complete open commercial nuclear fuel cycle. A MOX fuel fabrication facility is under consideration; however, all commercial reprocessing plants have been closed. The U.S. will be reporting information under most of the AP Article 2 paragraphs.
2.2	structure (chart)	Describe the structure (chart) of SSAC including the related organizations, authorities, etc.	It should be defined when the SSAC, the related organizations and authorities were established.	See attached SSAC Course chapter
2.3	Provisions	Describe the details of provisions governing the possession, transfer and use of nuclear material.		Requirements are contained in regulations 10 CFR 40, 50, 60, 63, 70, 72, 74, 76 & 150.
2.4	National/Multi-national inspections	- Who carries out national/multi-national inspections for SSAC?	Describe if a national/multi-national inspector participates in an IAEA inspection.	Inspections of commercial nuclear facilities are conducted by the U.S. Nuclear Regulatory Commission.
2.5	Counter-part of IAEA	- Who is the counter-part of IAEA inspectors?		US NRC staff conduct the safeguards inspections of licensee facilities; however, the NRC inspections are not designed to independently verify the licensee's material balance and thus are not equivalent to IAEA inspections.
2.6	Authority	- Is the SSAC office the implementing authority in accordance with the national laws?	Describe the official name, address(HQ and local offices), telephone/fax no. and E-mail address of the authority(ies).	The NRC is composed of its Headquarters in Rockville, Maryland, and Regional Offices in Germantown, Pennsylvania; Atlanta, Georgia; Lisle, Illinois; and Dallas, Texas. All safeguards inspections are conducted from the NRC Headquarters. See attached SSAC course chapter
		What are the implementing authority's responsibilities/tasks for INFCIRC/153, for the additional protocol, for the national regulations and for other agreements?	If the authority has any other tasks/responsibilities, describe their details such as PP, Safety licensing, Radiation protection, etc.	For commercial nuclear facilities, NRC has responsibility for safety (including radiation protection), domestic safeguards (including physical protection and material control and accounting), and international safeguards (including AP). NRC ensures compliance with the
		- Describe the relationships between SSAC and any contractor.		The NRC may use independent consultants, who do not have conflicts of interest, to assist in the review of licensee programs.
		- Is SSAC (and the authorities) fully independent of all parts of the nuclear industry?	If No, describe the relationship of them.	The U.S. NRC is an independent regulatory agency within the U.S. Government that has no ties to the commercial nuclear industry or the nuclear promotional activities of the U.S. Department of Energy

	Item	Questions/Instructions	Remarks	Documentation
		- Who has the responsibility for the detection of and the response to instances of illicit trafficking of nuclear material?		Responsibilities for responding to illicit trafficking of nuclear material are divided among several U.S. Government agencies. Licensees owning the material have the responsibility to detect losses, notify the NRC of losses, and provide information supporting recovery.
2.7	No. of staff including No. of national inspectors	Describe the number of staff for each organization / division / section of SSAC including the number of inspectors, and the trend of increase/decrease of them for last 10 years if possible.	If there is any part-time staff, describe them separately.	NRC employs 3 full-time material control and accounting inspectors in the Division of Nuclear Security. MC&A licensing staff are used to support the inspectors as necessary. The numbers are expected to increase. NRC also employs inspectors for security and safety.
3	Laws, regulations and other measures	Describe the detailed requirements of national/multi-national laws, regulations and other measures for the following items;	The detailed requirements should include rules, guidelines, methods, statistical equations, etc. if any.	
		- Requirements for siting, licensing, construction, authorization for commissioning and decommissioning;		See regulations 10 CFR 40, 50, 52, 60, 63, 70, 72, 76 & 150.
		- Conditions for revocation, suspension or modification of authorization to construct and operate facilities and to process, use or transfer nuclear material, and specified equipment and non-nuclear material defined on the AP;		See regulations 10 CFR 40, 50, 60, 63, 70, 72, 73, 74, 76 & 150. Other regulations of 10 CFR also apply
		- Identification of non-compliance;		See regulataions 10 CFR 40, 50, 60, 63, 70, 72, 73, 74, 76 & 150.
		- Material ownership, origin (supplier) and the requirements of any SG agreements with parties other than the Agency;		Commercial nuclear materials are privately owned. Use o nuclear materials is controlled by the Atomic Energy Act and international cooperation agreements.
3.1	Nuclear material	- Conditions for possession, including possession outside facilities, for transfer including imports, exports and domestic transfers, and for use;		See regulations 10 CFR 40, 50, 60, 63, 70, 72, 74, 76, 110, & 150.
		- Requirements for starting point, termination and exemption from accounting and control;		See regulations 10 CFR 40, 70, & 74
		- Requirements for categorization of nuclear material such as material type, isotopic composition and irradiation level;		See regulations 10 CFR 73, 74
		- Requirements for factors to be taken into account and Criteria to be met in the determination of material balance areas;	Describe also the way to calculate burn-up, nuclear product and nuclear loss with the timings/frequencies and what kind of data/information are used for the calculation.	See regulations 10 CFR 74, and guidance NUREG/BR-0006 and NUREG/BR-0007
		- Relationship between national provisions for nuclear material and a facility attachment;		See regulations 10 CFR 74 and 75. The nuclear material license for licensee facilities requires a Fundamental Nuclear Material Control Plan and a Physical Protection Plan that specifiy how nuclear material will be protected, controlled, and accounted for. The Facility Attachment is added as a license condition to specifiy how the IAEA safeguards requirements, not already addressed in the plans, will be met.
		- Requirements for accounting and operating records and reports on nuclear material flow and inventory such as items, timing and frequency;	Is there any formal/fixed format for recording and reporting? If YES, attach the examples of the formats, if possible.	See regulations 10 CFR 74 and guidance NUREG/BR-0006 and NUREG/BR-0007
		- Requirements for a measurement system and measurement uncertainties, including provisions for the determination of nuclear material received, produced, shipped, lost or otherwise removed from inventory and for determination of inventory changes based on sampling and chemical analysis or NDA (including weighing and volume measurements);	Describe the definitions of stratification, sampling methods, sampling frequency and measurement methods/errors (such as random error, systematic error, sampling error, bias, etc.) with statistical equations and error propagation.	See regulations 10 CFR 74 and guidance NUREG/BR-0006 and NUREG/BR-0007
		- Requirements for calibration of measurement equipment;	Describe the required methods, frequencies, accuracy, etc.	See regulation 10 CFR 74
		- Requirements for standards of NDA measurements, weighing, DA analyses, etc.;	Describe the requirements for the primary and secondary standards.	See regulation 10 CFR 74

	Item	Questions/Instructions	Remarks	Documentation
		- Requirements for physical inventory taking such as frequency, timing, method and information;		See regulation 10 CFR 74 and guidance NUREG/BR-0007
		- Requirements for identifying, reviewing, resolving and evaluating SRDs;	Describe the formal/standard (or example) calculation process for them.	See regulation 10 CFR 74
		- Requirements for procedures to derive the limits of measurement uncertainty and to be followed when SRDs or their limits of measurement uncertainty exceed specified values;	Describe the formal/standard (or example) calculation processes for the limit of MUF/measurement uncertainty, bias and bias correction.	See regulation 10 CFR 74
		- Requirements for the striking of material balances, and for calculating MUF(or Inventory Difference) together with its limit of measurement uncertainties;		See regulation 10 CFR 74
		- Requirements for the determination of the components of material balance through the use of measurements or derived estimates based upon measurements;		See regulation 10 CFR 74
		- Requirements for retained waste, measured discards, termination, etc. of nuclear material;	Describe the limits of amount, concentration, etc.	See regulation 10 CFR 74
		- Requirements for the evaluation of accumulations of unmeasured inventory and unmeasured losses and their limits;		See regulation 10 CFR 74
		- Arrangement for accounting for small quantities such as those used in laboratories and small research facilities;		See regulation 10 CFR 74
		- Requirements for inspection, including audits by the Authority and IAEA;		See regulations 10 CFR 74 and 75
		- Requirements for advance submission of operational and accountancy data/information;		See regulation 10 CFR 75
		- Requirements of reports for approving international transfer of nuclear material;		See regulation 10 CFR 110
		- Requirements for introduction of quality assurance/management (such as ISO9000) for the accounting for and control of nuclear material;		See regulation 10 CFR 74
3.2	Facility	- Requirements for the organization, staff, etc. which should have the responsibilities for development, approval, implementation/operation, recording and reporting related to the accounting for and control of nuclear material;	Describe the actual structure (chart) of the organization, staff, etc. for the largest nuclear facility in the state along with the responsibilities and the process flows, for example.	See regulation 10 CFR 74; information on specific licensees is protected
		- Requirements for MBA, KMP, OSP(Other Strategic Point), batch, item, etc.;	Is there any legal definitions for MBA, KMP, OSP, batch, item, etc.? If YES, describe them.	See regulations 10 CFR 74 and 75
		- Requirements for sampling and recording system;		See regulation 10 CFR 74
		- Requirements for in-plant equipment for measurements, and accounting and control mechanisms;		See regulation 10 CFR 74
		- Requirement for C/S;		See regulation 10 CFR 73
		- Requirement for the reporting and modification of design information for review;		See regulation 10 CFR 75
		- Requirements for receiving of inspections, DIV visits and CAs(& MAs) by the Authority and/or IAEA during construction, operation and decommissioning;	Describe the details of information for inspection, etc.	See regulation 10 CFR 75
		- Requirements of reports for approving international transfer of nuclear material, and specified equipment and non-nuclear material defined on the Additional Protocol;		See regulation 10 CFR 110
		- Points at which the transfer of authority and responsibility for nuclear material accounting and control is made;		See regulation 10 CFR 74
		- Requirements for nuclear facility to introduce any quality assurance/management system (such as ISO9000) of nuclear material and activities;	What about the international standard for audit such as ISO11000?	See regulation 10 CFR 40, 50, 60, 62, 70, 76
3.3	Procedure and Guideline	- Is there any guideline and procedure to meet the requirements?	Describe the titles, purposes and summaries of the guidelines and/or procedures.	NRC guidance to the licensees is contained in various Regulatory Guides and NUREG documents
		- Who provides the guidelines/procedures and who reviews and/or approves them?		Regulatory guidance is developed and approved by the NRC. Commercial facility specific plans and procedures are developed by the facility and subject to review by the NRC

	Item	Questions/Instructions	Remarks	Documentation
		- Is there any seminar, training course, etc. for the requirements and SSAC?		The U.S. national materials accounting information system, NMMSS, provides training on reporting of information to the system. The U.S. Depaartment of Energy holds training courses on physical protection and material control and accounting
3.4	Penalty	Describe any penalty on national laws, regulations and rules.		See the Atomic Energy Act of 1954
4	Information System	- Who operates SSAC information system?	Describe the name, organization structure (chart), No. of staff(total and in an information section/division), address, tel. No., contact person, starting date of SSAC information treatment, etc.	The U.S. national material accounting information system, the Nuclear Materials Management and Safeguards System (NMMSS) is operated by the U.S. Department of Energy under contract with NAC, Intl. See www.nacintl.com
		- Is the system operator designated in accordance with the national laws?	If YES, describe the name of national law, regulation, rule, etc. and the details of provisions.	No. See attached SSAC course chapter
		Describe the process flow of recording and reporting of SSAC information along with their timing/time frame/time limit;	The flow should cover at least events (such as receipt, shipment, etc.) related with nuclear material through submission of report (such as ICR, etc.) to IAEA.	For commercial nuclear facilties, see regulation 10 CFR 74 and guidance NUREG/BR-0006 and NUREG/BR-0007
4.1	Elements of the information system	- What kind of SSAC information is treated/processed? (For example, DIQ and FA, accountancy data, operation records, article II declaration, etc.)		The U.S. information system contains only nuclear material inventory and transaction data
		- What kind of processing's of SSAC information is carried out (e.g.. collecting, checking of format and internal inconsistency, preparing of reports for internal evaluation and for their submission to designated bodies as necessary to satisfy international SG agreements and possible other obligations) ?		See guidance NUREG/BR-0006 and NUREG/BR-0007 and www.nmmss.gov
		- What kind of product/outputs are prepared? (For example, a list of facilities and locations with nuclear material, a list of places with specified equipment and/or activities on AP, a list of inventory and inventory changes at each facility/location, a list of inventory with origin code, a list of C/S systems with locations, State's inspection results, flow of nuclear material through the fuel cycle in the State, etc)	List-up the output/products with the detailed information items on each output/products.	The system is capable of producing routine custom reports on the contained data. For international reporting, the system generates required reports for IAEA and foreign countries on the inventory, material ballances, and material transactions. A separate U.S. database will contain information required for AP reporting. Databases on license facilities are maintained by the NRC.
		- What is the name of database and database software used? (For example, ADABAS, NATURAL, etc.)	Describe the structure (chart) of the database.	There is no unified database of all U.S. information on licensee installations.
		- How long is the database for records, reports, measurements, C/S data, etc. kept?	Describe if the database is accessed easily and if not describe the reason why they are not able to be accessed.	Records at NRC are not destroyed but may be archived in accordance with U.S. regulations. Licensees must retain records for 3 years (5 years if inspected by IAEA) after the material has been removed from the facility.
4.2	Functions of the Authority related to the information system	Describe the details of the authority's main activities such as;		
		- Evaluation of inspection results such as NDA measurements, DA analyses, etc.;		For commercial industry, NRC inspectors review all licensee records and reports for indicators of program noncompliance
		- Evaluation of SRD, MUF and measurement uncertainties associated with SRD and MUF;		For commercial industry, NRC inspectors review all licensee records and reports for indicators of program noncompliance
		- Receiving the accountancy reports from operators, processing them and providing the accountancy reports according to IAEA format;		Material accounting data is reported to the NMMSS, which reformats the information for reporting to the IAEA. NRC reviews the commercial facility forms before they are submitted to the IAEA.
		- Providing statistics reports on inventory, inventory changes, No of facilities, No. of inspections, PDIs, etc.;		NMMSS can provide information on material transactions and certain material balances

	Item	Questions/Instructions	Remarks	Documentation
		- What is the follow-up action on the evaluation results to the SSAC inspection?		Corrective actions resulting from NRC inspections of licensee facilities are recorded and tracked by the appropriate NRC division
		- Is there any system to evaluate the SSAC SG results? (For example, there is a committee to evaluate the SSAC implementation results and the committee provides an annual implementation report for State SG/SSAC.)		Inspection results for commercial facilities are reviewed by the appropriate NRC Division
5	Inspection	- Is there any authority for national/multi-national SG inspection?		The Atomic Energy Act and Energy Reorganization Act authorize the NRC to conduct safeguards inspections to verify licensee compliance with the regulations
		- Is the national inspector/authority designated in accordance with the national laws?	If YES, describe the basic designation qualifications for inspectors.	The Atomic Energy Act and Energy Reorganization Act authorize the NRC to conduct safeguards inspections to verify licensee compliance with the regulations
		- What kind of activities does the authority carry out?		The Nuclear Regulatory Commission licenses and inspects the commercialnuclear installations with respect to safety and security and conducts research to ensure the safety of nuclear activities
		Describe the procedure for SSAC inspection such as;		
		□□How Government assigns an inspection to the authority;		For the commercial facilities, the NRC is responsible for determing the inspection schedule
		□□How and Who fixes the inspection schedule;	Describe what the criteria for inspection scheduling is, such as monthly inspection for book audit, inventory verification at IKMP, confirmation of plant operation/use according to the licenses, verification of ICs, for facility with UDU >= 1SQ.	The frequency of inspections is based on the type and quantity of nuclear material, the facility operations, and the results of prior inspections. Some facilities have resident inspectors; others are visited only annually. Safeguards inspections do not independently verify material balance data.
		□□How does the authority respond to the Agency's unannounced or short notice random inspection?		All inspections are scheduled. For non-routine IAEA inspections the NRC provides staff to facilitate the inspection.
		□□How are the follow-up actions carried out in case of any discrepancy/anomaly found;		Follow-up actions are determined and agreed between the facility, NRC and IAEA.
		□□Are there any specific stratification and sampling methods?	If YES, describe the details of stratification and sampling methods.	Stratification and sampling are facility specific.
		□□How to calibrate the inspection equipment for NDA measurement and DA analysis?		Calibration methods are equipment and facility specific
		- Do the state inspectors carry out/participate in DIV and/or CA?	If YES, describe the way to correspond to them.	NRC staff will facilitate and observe the IAEA inspections and CAs but do not conduct parallel activities
		- Is there any inspection carried out by SSAC inspector alone?	If YES, describe what the procedure is, how to report the result of the inspection and what kind of equipment is used.	NRC safeguards and safety inspections are conducted separate from IAEA activities.
		- Is there any State's own criteria for inspection?	If YES, describe the details of the criteria such as goal quantities, timeliness goals, verification coverage's, detection probability, etc. and the details of the definitions of discrepancies and anomalies.	NRC inspections are conducted to ensure compliance with regulations and license conditions. These inspections are conducted in accordance with NRC guidelines and criteria. NRC does not conduct inspections to independently verify the material balance.
		- Is there any unannounced/SN random inspection carried out by SSAC inspector alone?	If YES, describe what the procedure is and how to report the result of the inspection.	All inspections are scheduled.
		- Is there any formalized procedures for SSAC inspection?	If YES, describe the details of the procedures and attach working papers, if possible.	NRC inspections are conducted in accordance with established inspection plans and procedures
6	Technical Support	Describe the details of the following items;		
6.1	Training	- Is there any training course for SSAC, accountancy reporting, inspection, NDA equipment, C/S equipment, quality assurance, etc.?	If YES, describe the details such as who the sponsor is, who the trainer is, who the trainees are, what the frequency is, cost to participating in the training courses, etc.	The U.S. hosts several material accounting training courses separate from and in conjunction with the IAEA, including courses on NDA and C/S. The International Training Course on SSAC is held every two years. Courses are held at Los Alamos and Sandia National Laboratories and at other locations in the U.S. Trainers are provided by the U.S. Government agencies and national laboratories
		- Is there any joint training course with IAEA?	If YES, describe the names of the training courses.	International Training Courses on Implementation of SSAC, NDA, and C/S, among others.

	Item	Questions/Instructions	Remarks	Documentation
		- Is there any scheme/system for the authority or other State staff to participate in the IAEA training courses?	If YES, describe the names of the training courses which have been participated in by the authority or other State staff.	States with cooperation agreements with the U.S. can request permission to participate in U.S. Government sponsored training courses.
6.2	Technical assistance	- Does the authority give any technical assistance to operators?	If YES, describe the details of the technical assistances.	Facility operators are invited to participate in safeguards training courses sponsored by the U.S. Government.
		- How does SSAC specify, procure and maintain the SSAC equipment?		NRC does not install equipment at licensee installations or seek to independently verify the material balance.
6.3	Research and development activities	- What kind of research and development activities does the authority provide?		The U.S. government funds a variety of safeguards related R&D at the U.S. national laboratories and at commercial locations.
7	Cooperation with IAEA	- Is there any support program to IAEA?	If YES, describe the details of the support program.	The U.S. Support Program, also known as the Program of Technical Support to Agency Safeguards (POTAS), supports a large number of tasks and cost free experts to support strengthening IAEA safeguards
		- Are the activities of training, technical assistance and R&D included in the IAEA support program?		The U.S. considers all support requests received from the IAEA
		- What kind of cooperation with IAEA and/or other parties does the SSAC carry out?		The U.S. Government provides extrabudgtary funding, analytical services, equipment, technical assistance to the IAEA and technical cooperation and assistance with other countries
		- Is there any agreed basic conditions to implement the cooperation?	If YES, describe the details of the agreed basic conditions.	Support to IAEA is performed according to list of priorities agreed by U.S. and IAEA
		- Is there any joint use equipment?	If YES, describe the details such as the name of the joint use equipment/software/procedure, the way to approve them for joint use, etc.	When practical, the U.S. and IAEA take advantage of joint-use equipment at the inspected facilities.
		- Is there any annual meeting for implementation of IAEA SG?	If YES, describe the frequency, the place and who participate in the meeting.	Two US-IAEA Safeguards Implementation meetings are held annually in Vienna and Washington, D.C. U.S. participants include the Departments of State, Energy, Defense, and Commerce and the Nuclear Regulatory Commission
8	Other Features	Point out other features of your SSAC		