Shaw | AREVA
MOX SERVICES, LLC

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

26-MAY- 2009
DCS-NRC-000233

Subject: Docket Number 070-03098
Shaw AREVA MOX Services
Mixed Oxide Fuel Fabrication Facility
Responses to Environmental Protection
Requests for Additional Information

Reference: NRC-DCS-000403, Letter dated February 25, 2009, from D. Tiktinsky (NRC) to D. W. Gwyn (MOX Services), *Request for Additional Information Regarding the Review of the Environmental Related Aspects of the Mixed Oxide Fuel Fabrication Facility License Application Request*

This letter responds to your request for additional information regarding the environmental aspects of our License Application (LA).

Attachment 1 provides the responses to the referenced letter. Attachment 2 is the Draft LA Chapter 10 pages showing the updates since the last submittal. The changes are identified by vertical lines in the right margin. LA Chapter 10 Tables are excluded from Attachment 2 because they have not changed. Attachment 3 is the revision log for LA Chapter 10. A formal submittal of the LA Chapter 10 changes will be included in the next LA update.

If you have any questions, please feel free to contact me or Dealis W. Gwyn, Licensing and Regulatory Compliance Manager at (803) 819-2780.

Sincerely,

David Stinson
President and COO

NMSS01

Attachments:

1. Responses to Requests for Additional Information Regarding Environmental Protection of the MOX Fuel Fabrication Facility
2. Draft License Application Page Changes for Chapter 10, Environmental Protection
3. Revision Log for License Application Chapter 10

cc: (w/ attach.)
David H. Tiktinsky, USNRC/HQ

cc: (w/o attach.):
Mostafa Dayani, NNSA/SRS
Carol R. Elliott, NNSA/SRS
Walter L. Elliott, MOX Services
William B. Gloersen, USNRC/RII
Dealis W. Gwyn, MOX Services
Kevin Morrissey, USNRC/HQ
A.B. Robinson, MOX Services
Deborah A. Seymour, USNRC/RII
Donald J. Silverman, Esq., MOX Services
Garrett A. Smith, NNSA/HQ
EDMS: Corresp\Outgoing\NRC\2009 NRC\DCS-NRC-000233

Attachment 1

Responses to Request for Additional Information Regarding Environmental Protection of the MOX Fuel Fabrication Facility

Provide a general description of how you intend to conduct an assessment of the suitability of the SRS monitoring program for use by the MFFF.

In assessing the suitability of the SRS monitoring program for the MFFF, MOX Services reviewed the SRS environmental surveillance program and determined that it meets the environmental surveillance requirements identified in LA Chapter 10. This review included:

- Environmental Monitoring Plan;
- Quality Assurance (QA) program that includes QA Plan, QA procedures, QA program overview, and QA records;
- Quality Control program procedures (e.g., environmental sampling, environmental chemistry and analysis, stream and river water monitoring, environmental data management and publications, and environmental monitoring and analysis group); and,
- Control of measurement and test equipment and analytical measurement systems.

The SRS environmental surveillance program has been in place at SRS since the 1950's and supplies quality-assured environmental monitoring data to the Annual Site Environmental Report (ASER), which is required by DOE Order. This program has supplied data in many forums and has withstood the scrutiny of regulators, environmental activist groups, and the Citizens Advisory Board.

Based on the above, MOX Services has confidence in the quality of the SRS program and accordingly has entered into an agreement with SRS to access and use their data to support all MOX Services' environmental surveillance requirements as identified in LA Chapter 10.

Prior to commencement of MOX Services' pre-operational environmental monitoring program, the SRS environmental surveillance program will be subjected to a supplier audit by MOX Services' QA organization to ensure that the SRS program continues to meet all MOX Services' requirements. The audit will focus on data quality objectives, instrumentation quality and accuracy, data processing techniques and data quality.

Generally describe your access to the data-whether you will have direct access to various monitoring stations and instrumentation, receive periodic published reports, or otherwise.

MOX Services will have direct and immediate access to all SRS environmental monitoring data that is required for the execution of its environmental monitoring program.

Attachment 1

Responses to Request for Additional Information Regarding Environmental Protection of the MOX Fuel Fabrication Facility

Generally describe the process that SRS and MFFF may use to communicate any monitoring program changes that might be initiated by SRS, and how MFFF would incorporate any of its proposed changes into the SRS monitoring program.

SRS will provide monitoring program procedure updates to MOX Services through a controlled copy configuration management system. In the event that SRS changes their program, MOX Services will conduct an evaluation to determine any potential impact of the changes and implement appropriate compensatory measures.

What, if any, types of agreements between DOE and MFFF are anticipated that would address any potential changes to the existing monitoring program or access to the data of the program?

MOX Services has an agreement with SRS to access and use its data to support its environmental surveillance requirements as identified in LA Chapter 10. SRS will provide monitoring program procedure updates to MOX Services through a controlled copy configuration management system.

Attachment 2

Draft LA Chapter 10 Change Pages

10. ENVIRONMENTAL PROTECTION

The components of the Mixed Oxide (MOX) Fuel Fabrication Facility (MFFF) Environmental Protection Program include:

- Radiation safety controls to assess the level of radioactive releases to the environment, maintain public dose as low as is reasonably achievable (ALARA), minimize facility and environmental contamination, facilitate eventual deactivation, and minimize waste generation
- Effluent monitoring to measure and monitor radioactive effluents released from the facility during normal and off-normal operations
- Environmental surveillances to monitor environmental impact from operations during normal and off-normal operations.

10.1 RADIATION SAFETY

This section describes the methods used to maintain dose outside the Restricted Area Boundary (RAB) ALARA, in accordance with Title 10 of the Code of Federal Regulations (CFR) §20.1101. Facility radiation safety is described in Chapter 9.

The radiation protection organization is responsible for the analysis of the MFFF Main Exhaust Stack samples. The radiation protection organization is also responsible for sampling all internal areas of the MFFF for airborne contamination, analyzing the radioactive liquid waste prior to transfer to the Savannah River Site facilities, and providing the surveys of the solid waste drums prior to shipment.

10.1.1 ALARA Goals for Effluent Control

Calculations performed in accordance with 10 CFR §20.1302(b)(1) using the guidance provided in Regulatory Guide 4.20, Section 2.2, demonstrate that the Total Effective Dose Equivalent (TEDE) to an individual outside of the RAB likely to receive the highest dose from licensed operation does not exceed 100 mrem/yr, as required in 10 CFR §20.1301(a)(1).

The ALARA goal for TEDE to the individual outside of the RAB likely to receive the highest dose from air emissions of radioactive material to the environment during normal operations, excluding ^{222}Rn and its daughters, is less than 10 mrem/yr, which is 10% of dose stated in 10 CFR §20.1301(a)(1) and is consistent with 10 CFR §20.1101(d). Reports are made in accordance with 10 CFR §20.2203 if the 10 mrem/yr dose constraint is exceeded during all operating conditions. ~~off-normal operations.~~

No radioactive liquid effluents are predicted or anticipated for normal operations.

Dose estimates are monitored and compared to ALARA goals. Shaw AREVA MOX Services LLC (MOX Services) management is apprised of data in accordance with the ALARA program.

Attachment 2

Draft LA Chapter 10 Change Pages

10.1.2 Effluent Controls

Effluent controls, consisting of airborne, liquid, and solid waste management, reduce exposure to individuals outside of the RAB and minimize releases to the environment.

10.1.2.1 Control of Airborne Emissions

Airborne emissions are controlled by the heating, ventilation, and air conditioning (HVAC) system and the Offgas Treatment (KWG) unit ventilation system that removes radionuclides, nitrous fumes, and other hazardous materials from the Aqueous Polishing (AP) process systems offgas. Airborne waste from MFFF processes is routed through the HVAC system. The HVAC system is designed to handle the expected volume of potentially radioactive waste, compartmentalize the airborne waste to reduce the potential for cross-contamination, safely handle the chemical characteristics of the airborne waste, achieve an acceptable decontamination factor for each radionuclide, and be capable of safe shutdown consistent with the operating status. Several design features of the HVAC system support specific areas of the facility, such as the MOX Processing (MP) and AP Areas. These features include items relied on for safety (IROFS) to provide for confinement of radioactive materials. Ventilation exhaust from contaminated gloveboxes is passed through multiple banks of filters, including high-efficiency particulate air (HEPA) filters. The arrangement and control of IROFS ensure that contaminated exhaust does not bypass confinement controls.

Airborne emissions are monitored and controlled to maintain dose outside the RAB ALARA.

Trending results from effluent monitors, samplers, and other MFFF airborne monitoring equipment provide early indication of increased radioactivity in ventilation exhaust. Procedures identify evaluations and actions to be taken when the concentrations of airborne radioactivity exceed prescribed limits.

10.1.2.2 Liquid Waste Management

The AP process uses recycling to the maximum extent practical to minimize liquid waste. Liquid waste management is integrated into the fluid transport systems. The fluid transport systems are designed to handle the maximum expected volume of potentially radioactive waste, compartmentalize the liquid waste to reduce the potential for cross-contamination, safely handle the chemical characteristics of the liquid waste, and be capable of safe shutdown consistent with the operating status. Liquid radioactive waste is transferred to U.S. Department of Energy (DOE) facilities at SRS in a manner consistent with the SRS Waste Acceptance Criteria (WAC) for appropriate storage and disposition. SRS will take possession of the waste prior to reaching the RAB and is responsible for the safe movement of the waste.

Liquid radioactive wastes and liquid nonradioactive wastes are collected and managed in separate systems that have no opportunity for interconnection. Radioactive process fluids are maintained within at least two levels of confinement. Radioactive process fluids are transferred using means such as gravity flow, airlifts, air jets, and steam jets, when practical. Drains within the radiation control area are routed to the liquid waste system. Liquid radioactive wastes are collected in the aqueous liquid waste system or the solvent liquid waste system, and are sent to SRS for disposition. Outside the radiation control area, liquid nonradioactive wastes are collected and sent to SRS for disposition. Systems containing nonradioactive hazardous fluids are of fully-welded construction and are accessible for inspection. Prior to transfer to SRS, liquid wastes from storage tanks are sampled and analyzed to ensure that waste transfers meet the SRS WAC.

10.1.2.3 Solid Waste Management

Solid wastes are transferred to SRS for disposition. MFFF quantifies the activity in radioactive solid waste containers to ensure that waste shipments meet the SRS WAC.

Hazardous solid waste is waste that is, or contains, a listed hazardous waste, or that exhibits one of the four U.S. Environmental Protection Agency (EPA) hazardous waste characteristics (i.e., ignitability, corrosivity, reactivity, and toxicity). Hazardous waste includes nonradioactive laboratory wastes. Mixed low-level waste is waste that is radioactive and contains chemical components regulated by EPA as hazardous waste, while mixed transuranic waste is waste that meets the criteria for transuranic waste and contains chemical components regulated by EPA as hazardous waste.

Mixed low-level waste and mixed transuranic waste are packaged and transferred to SRS in a manner consistent with the SRS WAC for processing and disposal within 90 days of generation. SRS will take possession of the waste prior to reaching the RAB and is responsible for the safe transfer of the waste. To the extent practical, commingling of waste from streams requiring different treatment technologies is prevented. Containers of hazardous waste known or suspected to be contaminated with radioactive material are uniquely labeled and tracked through storage and shipping.

10.1.3 ALARA Reviews and Reports to Management

Reports summarizing the ALARA program are provided to MOX Services management. They include trending information, so that analytical results can be compared to ALARA goals. Emission and effluent radionuclide concentrations and radionuclides transferred to SRS as liquid and solid waste are included in trend analyses. Abnormal increases in the trend of analytical results are reported to MOX Services senior management as soon as practical. To ensure that releases are maintained ALARA, MOX Services management is informed quarterly of the trends measured against ALARA goals. ALARA goals are reevaluated annually, and new goals are established for the upcoming year as appropriate. Recommendations are made to MOX Services senior management, as needed, for changes in facilities and procedures to achieve ALARA goals. Effluent controls are reviewed annually as part of the radiological protection program annual review to ensure public doses are ALARA.

If an adverse trend is noted, an evaluation is made to determine if a detrimental effect is evident in the environment or the surrounding biota. The evaluation considers the information provided by the environmental surveillance network. Based on facility operating history and the data obtained from environmental surveillances during operations, the sampling and/or analysis programs are adjusted to optimize reliability.

10.1.4 Waste Minimization and Pollution Prevention

Waste management is guided by the principles of ALARA, waste minimization, and pollution prevention. Waste minimization is accomplished through a design that reduces the potential for waste generation, and an operations philosophy that minimizes the introduction of excess materials that can become contaminated.

The MFFF process implements recycling and reuse for waste minimization. For example, the recycling process minimizes the quantity of plutonium in the final waste by using systems that return (recycle) radioactive material to previous steps of the main process. The distribution and retention of radioactive materials throughout plant systems is reduced by using vacuum systems in the gloveboxes. Airborne dust is collected in dust pots in dedusting systems installed in the gloveboxes, and the material is recycled. Liquid waste is minimized in the AP process by use of recycling to the maximum extent practical. Nitric acid is recovered by evaporation from the process and partly reused as reagent feedstock for the plutonium dissolution subprocess. Distillates from the evaporation process are collected and partly reused in the process. Spent solvent from the plutonium separation step is regenerated by washing with sodium carbonate, sodium hydroxide, and nitric acid to remove degradation products from organic compounds, including trace amounts of plutonium and uranium.

~~Solid waste is minimized by reuse of solid scrap material from fuel fabrication. Many other system design features perform contamination control, confinement, and associated waste minimization functions. The process design reduces the distribution and retention of radioactive materials throughout plant systems by using vacuum systems in the gloveboxes. Airborne dust is collected in dust pots in dedusting systems installed in the gloveboxes, and the material is recycled. These design features control contamination to ensure that secondary waste production is minimized during plant operation.~~

Waste minimization procedures will require separation and segregation of solid and liquid wastes and the removal of packing and shipping materials prior to entry into contaminated areas. Waste minimization reduces worker and public exposure to radiation and to radioactive and hazardous materials.

Waste minimization programmatic documentation includes a statement of senior management support and identification of management, employees, and organizational responsibilities for waste minimization. Waste minimization includes periodic characterization of waste and assessment of waste management practices to identify opportunities to enhance waste minimization. Goals for waste minimization are established based on operational data. To ensure that waste generation is minimized, management is informed quarterly of the trends measured against waste minimization goals. The goals are reevaluated annually, and new goals are established for the upcoming year as appropriate. Recommendations are made to MOX

Services senior management, as needed, for changes in facilities and procedures to achieve waste minimization goals. ~~The MFFF process implements recycling and reuse for waste minimization. For example, the recycling process minimizes the quantity of plutonium in the final waste by using systems that return (recycle) radioactive material to previous steps of the main process. Many other system design features perform contamination control, confinement, and associated waste minimization functions. These design features control contamination to ensure that secondary waste production is minimized during plant operation.~~

10.2 EFFLUENT MONITORING

10.2.1 Air Emissions

The maximum annual concentrations of radioactive airborne effluents are expected to be much less than the values in 10 CFR Part 20, Appendix B, Table 2. Estimated isotopic distribution of emissions is shown in Table 10.2-1. MOX Services does not plan to request U.S. Nuclear Regulatory Commission (NRC) approval to adjust effluent concentrations shown in 10 CFR 20 Appendix B; therefore, physical and chemical properties are not described here.

10.2.1.1 Discharge Locations

Exhaust from MFFF processes is filtered and discharged to the environment via a stack located on top of the MOX Fuel Fabrication Building.

10.2.1.2 Sample Collection, Frequency, and Analytical Methods

Based on Regulatory Guide 4.16, Revision 1, a representative sample of the particulate effluent from the stack is continuously collected during operations. The representative sample is collected on a filter for determination of quantities and average concentrations of principal radionuclides that are released. The analytical methodologies used to characterize airborne emissions are listed in Table 10.2-2.

To investigate abnormal stack releases and/or anomalies, sample connections are installed at key locations in process area ventilation ducts. The placement and use of sample connections are based on minimizing the risk to facility workers, site personnel, and members of the public. The potential for leakage from process systems, equipment, and confinement is also considered. The evaluation focuses on the equipment and spaces with the highest potential for leakage of airborne contaminants. During MFFF operations, elevated readings from continuous air monitors (CAMs) and/or fixed air samplers are used to identify the need to perform maintenance, or to take other action to reduce effluent releases. To quantify the contribution from each source, CAMs sample the discharged air from the MP and AP process areas and, as appropriate, other areas that are not used for processing special nuclear material.

Analytical quality control methodology is described in the appropriate laboratory manual and is subject to Quality Assurance controls. Analytical procedures are consistent with national or international consensus standards or have equivalent or superior performance to such methods.

Analytical instrumentation is standardized and calibrated in accordance with the manufacturer's recommendations. Calibration standards are traceable to the National Institute of Standards and Technology.

10.2.2 Liquid Effluents

Liquid radioactive waste is collected by the liquid aqueous liquid waste system or the solvent liquid waste system and transferred to SRS for disposition. The MFFF does not discharge radioactive liquid to the environment during normal and off-normal operations. The expected nonradioactive liquid release is from stormwater that is released to the storm drains and water from HVAC noncontact condensate that is released to the sanitary sewerage facilities system.

10.2.2.1 Discharge Locations

The MFFF does not discharge process effluents. The National Pollutant Discharge Elimination System (NPDES) discharge for stormwater runoff is designated in South Carolina Department of Health and Environmental Control (SCDHEC) NPDES General Permit and related documents (e.g., Storm Water Pollution Prevention Plan).

10.2.2.2 Leak Detection Systems for Ponds, Lagoons, and Tanks

The MFFF does not use wastewater treatment ponds, lagoons, or other process water holding ponds. The only pond on the MFFF site is the stormwater detention basin, which does not receive process liquid discharges from the MFFF. Tanks used for storage of radioactive material are located inside MFFF buildings and are equipped with drip pans and leak detection.

10.2.3 Recording/Reporting Procedures

Data from the sampling and monitoring are reviewed on a regular basis. Radionuclide activities are trended over a period of time at each sampling location for each media to determine the effects of facility operation. If an increasing trend is noted, an evaluation is made to determine if a detrimental effect has been seen in the environment or in the surrounding biota. The appearance of an increasing activity trend in itself is not cause for action. Based upon the operating history of the facility and operational data, sampling and/or analysis programs are adjusted as necessary.

MOX Services submits a summary of the effluent monitoring to the NRC semiannually.

10.3 ENVIRONMENTAL SURVEILLANCES

Environmental surveillances assess the environmental impact of licensed activities, which include preoperational and operational environmental monitoring activities. Radionuclide analyses are performed more frequently if there is an unexplained increase of gross radioactivity in airborne emissions, or when a process change or other circumstance might cause a variation in radionuclide concentration.

Radiological impacts to the environment from airborne emissions during operation of the MFFF are expected to be minimal. Because the MFFF does not discharge radioactive liquids directly to the environment, the environmental surveillances focus on the environmental media impacted by the airborne pathway for the anticipated types and quantities of radionuclides released from the facility.

10.3.1 Pathway Analysis Methods to Estimate Public Dose

As noted above, the MFFF does not release radioactive effluents to the aquatic environment. Consequently, the pathways for radionuclides to reach the public or environment are associated with airborne emissions. The dominant pathway for MFFF releases to reach human consumption is inhalation of airborne emissions. Deposition of airborne particulates on crops and ingestion of the contaminated agricultural products is a secondary pathway for radionuclides to reach the environment and human consumption. However, because the MFFF is located on a DOE reservation, there are no consumable crops within 5 miles of the MFFF. A tertiary pathway is deposition of airborne particulates to water, or contaminated runoff to nearby streams and ingestion of the water or fish. Again, since the MFFF is on a DOE reservation, the importance of this pathway is significantly reduced. The analysis of public dose considers inhalation uptake, external exposure to the airborne plume, ingestion of terrestrial foods and animal products, and inadvertent soil ingestion.

10.3.2 Environmental Media to be Monitored and Sample Locations

The environmental surveillances track each pathway for the release of MFFF radioactivity to the environment. Environmental surveillances include monitoring of airborne particulates and deposition of particulates on surrogates for crops, such as grass and soil, and nearby streams. Environmental surveillances evaluate the effects of both short-term and long-term deposition.

Locations and sampling frequencies during operations phase monitoring are adjusted, based on the results of the preoperational surveillances or operational emissions monitoring results.

10.3.3 Preoperational Surveillances

The DOE has monitored the SRS site for many years. MFFF preoperational environmental surveillances provide a link between the long-term DOE data and the MFFF operational environmental surveillances. Preoperational environmental surveillances begin approximately two years prior to production of commercial fuel. The objectives of the preoperational environmental surveillances are:

- Establish a baseline of existing radiological and biological conditions at and nearby the MFFF site
- Evaluate procedures, equipment, and techniques used in the collection and analysis of environmental data, and train personnel in their use
- Determine the presence of contaminants that could be a safety concern for personnel.

Preoperational surveillances establish a baseline for operational environmental surveillance for radioactivity levels of environmental media (e.g., air, soil, sediments, and vegetation), as appropriate, with analyses for uranium, plutonium, and other radionuclides of interest.

10.3.3.1 Air Sampling and Analysis

Preoperational air quality sampling establishes the baseline to be used during the operational monitoring period. The airborne monitoring provides a comprehensive baseline of radiological conditions related to airborne emissions in the environs of the MFFF. Three air sampling locations monitor exposure at the RAB to the east, southwest, and northwest of the MFFF building. The airborne radiological monitoring program, including the sampling locations, is outlined in Table 10.3-1.

Three additional air sampling locations, corresponding to existing SRS monitoring points, monitor exposure at the SRS boundary and are identified in Table 10.3-1. These sampling locations assist in estimating dose to the offsite public, conservatively assuming a member of the offsite public spends all their time at the SRS boundary. Air quality monitoring points are subject to emissions from not only the MFFF, but also from other SRS operations. Environmental observations are evaluated in conjunction with MFFF emissions data and atmospheric transport and dispersion modeling projections. Preoperational monitoring is used to establish the baseline for both isotopic composition and concentrations, which are then compared to observations during MFFF operations.

Analytical methods and lower limit of detection (LLD) for analyses of airborne isotopes are listed in Table 10.3-2. For rainwater samples, the rainwater is evaporated and then the dry material is counted. Sufficient volumes of samples are collected to ensure the attainment of LLD thresholds in the analysis. Samples are processed and packaged in a manner to ensure the integrity of each sample.

10.3.3.2 Water Sampling and Analysis

The MFFF does not discharge process water to the environment. Deposition rates of airborne contaminants to water bodies are estimated based on airborne environmental surveillances and confirmed by water and sediment sampling.

10.3.3.3 Terrestrial Sampling and Analysis

Preoperational terrestrial radiological monitoring is outlined in Table 10.3-3. It provides a comprehensive baseline of radiological conditions related to airborne emissions in the environs of the MFFF.

Soil samples are collected, using hand augers or equivalent devices, from uncultivated and undisturbed areas. Grassy vegetation is collected at locations adjacent to the soil sample by hand picking vegetation.

Analytical methods and LLDs for terrestrial environmental samples are listed in Table 10.3-4. Sufficient volumes of samples are collected when available, using accurate sample collection methods to ensure the attainment of LLDs in the analyses. Samples are processed and packaged in a manner to ensure the integrity of each sample.

10.3.4 Operational Monitoring

Locations and sampling frequency during the operational monitoring period may be altered based on the results of the preoperational monitoring or operational emissions monitoring results. The frequency of the monitoring described in this section may be reduced when a consistent radionuclide composition in effluents is established.

10.3.4.1 Air Sampling and Analysis

Operational air quality sampling is based on the results of preoperational and emission monitoring. The operational airborne radiological monitoring is outlined in Table 10.3-5. Analytical methods and LLDs are listed in Table 10.3-6. For rainwater samples, the rainwater is evaporated and then the dry material is counted. Sufficient volumes of samples are collected to ensure the attainment of LLDs in the analyses. Samples are processed and packaged in a manner to ensure the integrity of each sample.

10.3.4.2 Water Sampling and Analysis

The MFFF does not discharge process water to the environment. Deposition rates of airborne contaminants into water bodies are estimated based on airborne environmental surveillances and confirmed by water and sediment sampling.

10.3.4.3 Terrestrial Sampling and Analysis

Operational terrestrial radiological monitoring is outlined in Table 10.3-7. It provides an evaluation of radiological impacts related to deposition of airborne emissions in the environs of the MFFF. Terrestrial samples are collected in the vicinity of the air quality monitors to allow association of the particulate and rainwater analyses with vegetation analyses.

Soil samples are collected, using hand augers or equivalent devices, from uncultivated and undisturbed areas. Grassy vegetation is collected at locations adjacent to the soil sample by hand picking vegetation.

Analytical methods and LLDs for analyses of terrestrial environmental samples are listed in Table 10.3-8. Sufficient volumes of samples are collected when available, using accurate sample collection methods to ensure the attainment of LLDs in the analyses. Samples are processed and packaged in a manner to ensure the integrity of each sample.

10.3.5 Action Levels and Actions

Title 10 CFR §20.1301 establishes regulatory limits for dose to the public. To ensure that the regulatory limits are not exceeded, MOX Services has established administrative limits and action levels as shown in Table 10.3-9. If an action level is exceeded for sampling, an investigation is performed to determine the source of the elevated activity. Emission data are trended as an analytical tool.

10.3.6 Recording/Reporting Procedures

Data from the sampling are reviewed on a regular basis.

Radionuclide activities are trended at each sampling location for each media to determine the effects of facility operation. If an increasing trend is noted, an evaluation is performed to determine if a detrimental effect has been seen in the environment or in the surrounding population.

Based upon the operating history of the facility and operational data, sampling and/or analysis programs are adjusted as necessary.

Results of the environmental surveillances are summarized annually. Reports and notifications of theft or loss of licensed material are submitted as required. Reports and notifications of concentrations of principal radionuclides released are provided, and include the minimum detectable concentration for the analysis. Reports and notifications of exposure incidents above acceptable levels are submitted as required.

10.3.7 Monitoring Procedures, Analytical Methods, and Instrumentation

Analytical quality control is described in laboratory procedures and is consistent with the MOX Project Quality Assurance Plan. Analytical procedures are consistent with national or international consensus standards or have equivalent or superior performance to such methods. Analytical instrumentation is standardized and calibrated in accordance with the manufacturer's recommendations. Calibration standards are traceable to the National Institute of Standards and Technology.

10.4 ENVIRONMENTAL PERMITS

Table 10.4-1 lists the environmental permits and plans that are required prior to operation of the MFFF.

Attachment 3
LA Chapter 10 Revision Log

- Section 10.1 has been expanded to respond to Radiological Protection RAI HP-5. And, Section 10.1.1 has been revised from "Reports are made in accordance with 10 CFR §20.2203 if the 10 mrem/yr dose constraint is exceeded during all operating conditions." to "...is exceeded during off-normal operations."
- Section 10.1.4, Removed reference to "many other design features..." eliminated the redundant last paragraph in the section and reworded the remainder of the section for clarity.

COMMITMENT INPUT/CLOSURE FORM Page 1 of 1

Commitment Tracking Identifier:
(year - sequential number, revision: XXXX-XXXX RX) 2009-0002 R0

Source Document DCS-NRC-000233 Date: 26 May 09

Commitment Description: New Commitment ☒ Commitment Closure ☐

Commitment for MOX QA organization to perform supplier audit of SRS environmental surveillance program prior to MOX Services commencing pre-operational environmental monitoring.

Comments:
This commitment is a result of Environmental RAIs provided in NRC-DCS-000403

Commitment Due /Closure Date:

03 Dec 2012

(Attach additional sheets, as necessary)

REFERENCES

List documents (e.g., procedures, regulatory submittals, etc.) affected by this commitment.

Description
DCS-NRC-000233

Prepared by: Douglas Yates [signature]

Signature Billy Jeffers [signature] 26 May 09
Review *Date*

Signature [signature] 27 MAY 09
Approval *Date*

Shaw | AREVA
MOX SERVICES, LLC

REGULATORY AGENCY COMMUNICATIONS TRAVELER

INSTRUCTION FOR USE:

The assigned L&RC Responsible Individual (RI) shall coordinate completion of this Regulatory Agency Communications Traveler for submittal of written correspondence to a regulatory agency. This completed form will serve to document that the appropriate MOX Services managers or designated representatives have reviewed and approved the referenced document(s) identified below which are being formally transmitted to the:
US Nuclear Regulatory Commission .
(Regulatory Agency Addressee)

DOCUMENT(S) BEING TRANSMITTED:

(1) DCS-NRC-000233, (Response to Environmental RAI)

(2) N/A

(3) N/A

MOX SERVICES APPROVER(S):

Name	Approval Signature	Date
A.B. Robinson	A.B. [signature]	26 May 09
W.P. Hennessy	[signature]	26 May 09
D.W. Gwyn	Noel Simpson for Dean Gwyn	26-MAY-09
W.L. Elliott	[signature] for WLElliott	26 MAY 09

Security Review Completed: ☒ YES ☐ N/A

Proprietary Review Completed: ☒ YES ☐ N/A

DOE Review Completed: ☒ YES ☐ N/A

Commitments Contained in Transmittal(s): ☒ ~~YES~~ ~~☒ NO~~ NB 26-MAY-09 (if YES, attach PP8-2 form)

This Traveler completed by: L&RC RI Noel Simpson Date: 26-May-09
Signature

Form PP8-1A
Rev. 2
Eff. Date: 26 Jan 09
Page 1 of 1