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Department of Energy
Carlsbad Field Office
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JUL - 2 2013

Mr. Jon E. Hoff, Manager
Quality Assurance
Nuclear Waste Partnership, LLC
P.O. Box 2078
Carlsbad, New Mexico 88221-2078

Subject: Transmittal of Audit Report for Audit A-13-16, NWP QAP Related to NWP RADCON and Dosimetry Programs

Dear Mr. Hoff:

The Carlsbad Field Office performed Audit A-13-16 to evaluate the adequacy, implementation, and effectiveness of the Nuclear Waste Partnership, LLC (NWP) Quality Assurance Program (QAP) related to NWP RADCON and Dosimetry Programs. The audit was conducted April 9-11, 2013. The results of the audit and conclusions of the audit team are provided in detail in the enclosed audit report.

The audit team identified two Conditions Adverse to Quality documented in Corrective Action Reports (CARs) 13-027 and 13-028, which were transmitted under separate correspondence.

The team identified one concern that was corrected during the audit, provided one Observation, and offered one Recommendation to NWP management, as described in the report.

The audit team concluded that overall, the processes evaluated were adequately established for compliance with upper-tier requirements, satisfactory in the implementation of those requirements, and effective in achieving the desired results.

If you have any questions regarding the enclosed report, please contact me at (575) 234-7491.

Sincerely,

D. S. Miehls

Dennis S. Miehls
Acting Director, Office of Quality Assurance

Enclosure

cc w/enclosure:

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*ED denotes electronic distribution

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U.S. DEPARTMENT OF ENERGY
CARLSBAD FIELD OFFICE

AUDIT REPORT

OF THE

NUCLEAR WASTE PARTNERSHIP LLC

FOR

NWP DOSIMETRY AND RADIOLOGICAL CONTROL PROGRAMS

CARLSBAD, NEW MEXICO

AUDIT NUMBER A-13-16

APRIL 9 – 11, 2013

Prepared by: _____ **Date:** July 2, 2013
Paul C. Gomez, CTAC
Audit Team Leader

Approved by: _____ **Date:** 7-2-13
Dennis S. Miehls, CBFO
Acting Quality Assurance Director

1.0 EXECUTIVE SUMMARY

U.S. Department of Energy (DOE) Carlsbad Field Office (CBFO) Audit A-13-16 was conducted April 9 – 11, 2013, to evaluate the adequacy, implementation, and effectiveness of the Nuclear Waste Partnership LLC (NWP) Dosimetry and Radiological Control (RADCON) Programs and related procedures.

As of October 1, 2012, the DOE Waste Isolation Pilot Plan (WIPP) management and operating contract has been transitioned from Washington TRU Solutions, LLC (WTS) to NWP. Distribution and contact lists for this report have been updated as provided by NWP.

Based upon the results of the evaluation, the audit team determined that the NWP programs reviewed adequately address upper-tier requirements, are satisfactorily implemented, and are effective in achieving the desired results. Two conditions adverse to quality were identified during the audit necessitating the initiation of Corrective Action Reports (CARs) 13-027 and 13-028. One condition adverse to quality was corrected during the audit (CDA), one Observation was identified, and one Recommendation was offered for management consideration.

2.0 SCOPE

The scope of the audit included evaluations of NWP Dosimetry and RADCON Program documents, implementing procedures, and records. Responsible management and personnel were interviewed to assess their understanding of requirements and to confirm that requirements were being fulfilled.

The following areas were evaluated.

NWP Dosimetry

- NWP Dosimetry Program
- Investigation of Potential Intake and Internal Dose Assessment
- Work Restriction
- External Dosimetry Background Monitoring
- Consequence Assessment Dose Projection
- Dosimetry Records

NWP RADCON

- Radiological Control Aboveground
- Radiological Control Underground
- Abnormal Radiological Conditions
- Radiation Exposure Control
- Radiological Surveys

- Source Control
- Radiological Control Responses and Reporting
- Software Quality Assurance

3.0 AUDIT TEAM AND OBSERVERS

D. Miehls	Management Representative, CBFO Office of Quality Assurance
Dr. H. Chiou	Observer, CBFO Office of Environment, Safety & Health
P. Gomez	Audit Team Leader, CBFO Technical Assistance Contractor (CTAC)
K. Martin	Auditor, CTAC
C. Castillo	Auditor, CTAC
P. Y. Martinez	Auditor, CTAC
T. Bowden	Auditor, CTAC
J. Harvill	Technical Specialist, CTAC
J. Schuetz	Technical Specialist, CTAC
J. Oliver	Technical Specialist, CTAC

4.0 AUDIT PARTICIPANTS

Individuals contacted during the audit are identified in Attachment 1. A pre-audit conference was held in the Waste Isolation Pilot Plant (WIPP) Support Building large conference room on April 9, 2013. The audit was concluded with a post-audit conference in the WIPP Support Building large conference room on April 11, 2013.

5.0 SUMMARY OF AUDIT RESULTS

5.1 Program Adequacy, Implementation, and Effectiveness

The audit team concluded that the NWP Dosimetry and RADCON Programs and associated implementing procedures evaluated are adequately established and effectively implemented for compliance with requirements.

5.2 Audit Details

The following sections provide details of the audit and describe the methods used to conduct the evaluations for each of the areas and organizations evaluated. Requirements are cited as applicable to the program areas evaluated.

5.2.1 NWP Dosimetry Program

NWP procedures and governing documents were reviewed and used to develop checklists prior to the audit. Audit activities commenced on April 9, 2013, in the WIPP Safety Building (building 452). Audit activities were performed in the Dosimetry Processing Center (room 105), including examination of records and materials such as

thermoluminescent dosimeters (TLDs) used and stored in that office and the adjoining laboratory.

Field activities to monitor background radiation were also observed. The audit team found that TLD cards are prepared, stored, distributed, read, and maintained in accordance with requirements. Objective evidence, both written and electronic, was found to be technically satisfactory. The following objective evidence was reviewed during the audit:

- TLD Reader #1 Logbooks (4/4/12 – 4/3/13, 12/8/09 – 12/17/10, and 12/20/10 – 4/9/12)
- TLD REMS Daily Reports (March 8, 2013, October 10, 2012)
- TLD REMS Periodic Report (October 10, 2012)

Investigation of Potential Intake and Internal Dose Assessment

The audit team conducted interviews with NWP personnel and determined that there have been no cases of intake of radioactive materials that would have required implementation of applicable sections of procedure WP 12-DS1361, Rev. 9, *Bioassay Scheduling, Sampling, Shipping, and Analysis Results Receipt.* The audit team determined that personnel are familiar with procedure steps regarding investigation of potential intake and internal dose assessment for future implementation as necessary.

The audit team reviewed records supporting the processes for in vitro dosimetry activities. In several cases, urinalysis records, particularly WP 12-DS1361 Attachment 2, Required Urine Sample Information, were misaligned when copied, and identifying information (such as employee name) was inadvertently cut off in the file copies. In addition, record copies of Request for Analysis forms were found to be incomplete in that the "Received By" section was not signed by an individual representing the receiving organization. As stated in WP 12-DS1361, the Attachment 2 and Request for Analysis forms are generated records to be handled in accordance with departmental Records Inventory and Disposition Schedules (RIDS). These findings resulted in the issuance of Corrective Action Report (CAR) 13-027 (see section 7.1).

Work Restriction

The audit team conducted interviews with NWP personnel and reviewed objective evidence of implementation of procedure steps related to restriction of work to limit exposure to radiation. There have been no events of excessive exposure of personnel that would require implementation of applicable sections of procedure WP 12-DS3304, Rev. 6, *Radiation Work Restriction.*

The audit team reviewed records of the one declaration of pregnancy made within the last 12-month period. The declaration was submitted, documented, reviewed, and approved in accordance with procedure. Dose limits were modified to appropriate

levels and were entered in the Dosimetry Computer System (DCS) database for tracking.

Work Restriction activities to limit radiation exposure were determined to be adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

External Dosimetry Background Monitoring

The audit team conducted interviews with NWP personnel and reviewed objective evidence of implementation of procedure steps related to external dosimetry background monitoring per WP 12-DS3324, Rev. 7, *External Dosimetry Background.* The audit team visited a sample of locations where personal area monitoring (PAM) and control TLDs are placed. PAM TLDs are used for measurement of background radiation in various areas occupied by personnel. Control TLDs are used to check measurements at locations where workers place their individual monitoring TLDs in racks when performing work activities that do not require them to be worn. The audit team determined that PAM and control TLDs were placed and labeled in accordance with procedure. The audit team reviewed a sample of quarterly reports of analysis of these TLDs and determined that values are reported and reviewed in accordance with procedure.

External Dosimetry Background Monitoring was determined to be adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

Consequence Assessment Dose Projection

The audit team conducted interviews with NWP personnel and reviewed objective evidence of implementation of procedure steps related to projection of radiation levels and plume areas as a consequence of release of materials stored at WIPP per WP 12-ER4916, Rev. 18, *Consequence Assessment Dose Projection.* The audit team determined that there have been no releases to date that would have required implementation of applicable sections of this procedure.

The audit team reviewed records of projection estimates that were performed as part of emergency drills. Data for simulated releases were found to be collected properly, recorded on appropriate forms, and entered into calculation software. Reports of projections were evaluated and reviewed in accordance with procedure WP 12-ER4916. Two individual National Atmospheric Release Advisory Center (NARAC) software applications are available and were used during drills: HotSpot, and a separate web-based software. Selection of the software to be used for projection calculations is at the discretion of the operator, depending on how fast a result is needed and how fast a software application can return a projection. Both applications provide comparable results and both may be used for a specific projection for comparison and to increase confidence in a result. The audit team determined that personnel are familiar with implementation of the procedure, use of the projection

calculation software, and gathering and documenting data on forms. The team found that personnel have demonstrated satisfactory implementation of procedure steps during drills requiring consequence assessment dose projection.
The audit team evaluated the application of software quality assurance (SQA) to the HotSpot software. Section 5.0 of NWP procedure WP 16-2, Rev. 13, *Software Screening and Control*, gives requirements for SQA for the HotSpot software, which is defined in accordance with the procedure as an item that is "acquired ... for use without modification ... downloaded software." The audit team identified one concern related to SQA: the software custodian had not performed installation testing and had not completed an installation/check-out form for operation of the HotSpot software on the current operating platform. The concern was determined to be an isolated case, and the software custodian performed testing and completed the QA forms during the audit. The concern was dispositioned as corrected during the audit (see section 7.2, CDA-1).

Consequence Assessment Dose Projection was determined to be adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

Dosimetry Records

The audit team conducted interviews with dosimetry personnel and reviewed documentation to verify dosimetry records activities meet upper-tier requirements and other requirements outlined in implementing procedures WP 12-3, Rev. 19, *WIPP Dosimetry Program*, and WP 12-DS3310, Rev. 10, *Processing Radiation Dose Records and Radiation Dose Reporting*.

Interviews were conducted with both the RC&D Manager and the Dosimetry Team Leader (DTL) to address checklist questions, to obtain objective evidence, and to verify the adequacy of processing and reporting radiation dose records activities conducted at the WIPP site.

Records reviews included current dose estimate reports, individual dose summary/termination reports, dose history request reports, visitor radiation and individual annual exposure reports, employee temporary TLD radiation exposure reports, and documented email notifications of quarterly dose results. All records were found to be maintained in accordance with the departmental RIDS dated January 8, 2013.

Training documentation was verified for the RC&D Manager, DTL, and individuals who have completed WIPP Qualification Card DS-01, WIPP Dosimetry Section Distribution Center Qualification Program.

Overall, Dosimetry Records activities were determined to be adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

5.2.2 NWP RADCON

Radiological Control Program Aboveground

The audit team reviewed NWP RADCON and emergency or off-normal procedures and governing documents prior to the audit and prepared checklists. The activities generally described as RADCON are handled by a number of organizations within NWP and by outside facilities such as the Carlsbad Environmental Monitoring and Research Center (CEMRC), known as the URS WIPP Laboratories. Numerous personnel interviews were conducted to track the collection of sample media through storage and analysis, to data collection and aggregation, to compliance report roll-up and publication.

Radiation Engineering, Emergency Response, and Health Physics are involved in the collection of samples and data, the analysis of samples, the modeling of data and, ultimately, the delivery of data to decision-makers and response elements within and outside NWP. Sample media collection and distribution was observed and found to be technically sound and compliant with procedural requirements.

Sample storage, transport, and analysis were also tracked and found to be technically adequate. Data generation and aggregation were found to meet requirements. The WIPP site has not experienced an emergency involving the release of radiation, so the procedural requirements have been implemented only through drills and training exercises. Review of applicable procedures and interviews with responsible personnel provided evidenced of adequate implementation. The audit team reviewed Air Sampling Chain of Custody Forms for A2 0304 0813, A3 0304 0813, and Blank 13-0221, and evaluated the following objective evidence:

- CEMRC WIPP Laboratories 2012-4, Alpha Spectroscopy ALP001 Sample Counting Log, 10/10/12 to present
- CEMRC WIPP Laboratories 2012-2, LB4100 Gas Proportional Counter GAB002 Sample Counting, Log 6/25/12 – 12/3/12
- CEMRC WIPP Laboratories 2012-2, Gamma Spectroscopy GAM002 and GAM003 Sample Counting Log, 6/28/12 to present
- CEMRC URS WIPP Laboratories STLC-07 Sample Tracking Logbook, 7/3/12 to present

One area of concern was noted in WP 12-RC.01, Rev. 9, *Quality Assurance Program Plan for Sampling Emissions of Radionuclides to the Ambient Air at the Waste Isolation Pilot Plant* (QAPP). Section 2.2 of the QAPP, Safety and Health Department, states that the RC&D Section has primary responsibility for operating the WIPP Effluent Monitoring System.

In the RC&D group, the RADCON group responsibilities include having a statement of work (SOW) between the NWP RADCON groups, Site Environmental Compliance, and the WIPP Laboratories that details the radiochemical analyses, QA, and reporting requirements. A copy of this approved SOW could not be provided. The language in section 2.2 of a draft copy of Rev. 10 of the QAPP (currently in revision in the Quality and Manufacturing Integrated System) is identical to the information contained in Rev. 9. This finding was dispositioned as CAR 13-028.

Radiological Control Program Underground

The audit team conducted interviews and reviewed documentation to verify that the RADCON Program Underground meets upper-tier requirements and the requirements outlined in implementing procedures.

Staff interviews were conducted with the radiological engineer (RE), QA personnel, and training personnel to address checklist questions and verify the adequacy of radiological controls underground, nonconformances, training, management assessments, and measuring and testing equipment on radiological survey equipment.

Records reviews included radiological work permits; calibration records; radioactive source control logs; management assessment reports, Environment, Safety & Health (ES&H)/Radiological Control RIDS; training records for ALARA (as low as reasonably achievable) personnel, radiological control technicians, and source custodians; NCR logs and NCRs; and Computerized History and Maintenance Planning System (CHAMPS) work orders.

Since work activities during the audit did not include direct surface or swipe contamination surveys, the audit team verified the records of previous surveys. Equipment was verified to be properly calibrated, including thorium probes, cesium meters, and alpha/beta bench counters.

The audit team also verified RADCON support for air monitoring using procedures WP 12-HP1304, Rev. 10, *Canberra iCAM Alpha/Beta Certified Air Monitor*; WP 12-HP1305, Rev. 11, *Air Sampling Equipment*; WP12-HP1306, Rev. 8, *Canberra Alpha Sentry Continuous Air Monitor*; WP 12-HP1307, Rev. 12, *Portable Instrument and Portal Monitor Operability Checks*; and WP 12-HP1308, Rev. 4, *Portable Alpha-6 Continuous Air Monitors*.

All access-controlled areas in the underground were found to be properly posted during contact-handled waste handling activities. The audit team verified that radiation source materials were properly labeled.

Radiological Control Program activities were determined to be adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

Abnormal Radiological Conditions

The audit team interviewed the RADCON Team Leader and verified through records that no abnormal radiological conditions have occurred in the past three years.

Radiation Exposure Control

The audit team conducted interviews with NWP personnel and reviewed objective evidence of implementation of procedure steps related to activities performed to control radiation exposure per WP 12-HP3300, Rev. 2, *Radiation Exposure Control.* The audit team determined that temporary shielding equipment has not been placed within the 12-month term evaluated during this audit.

The audit team reviewed a sample of records documenting radiation monitoring of contractor equipment used for soil density testing. Records indicate that monitoring was performed and that contract personnel were qualified in the use of the density testing equipment. Through interviews with NWP personnel, the audit team determined that procedure sections related to monitoring and control of internal sources is implemented mainly for the Remote Handled Facility Cask Loading Room Sentinel Source. Records of the use of this source for annual calibration of detectors were reviewed and the audit team determined that monitoring was performed and that documents were satisfactorily generated in accordance with procedure. The audit team determined that activities for control of radiation exposure were performed in accordance with procedure WP 12-HP3300.

Radiation Exposure Control activities were determined to be adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

Radiological Surveys

The audit team verified the results of direct surface contamination surveys and surface contamination swipe surveys. No readings were recorded with results greater than action levels in reports 12-8501 and 12-8504 from payload reports ID0306 and ID0269. Also reviewed were report packages 13-0031 and 13-0035. No results were greater than action levels.

During the walkthrough of the radiological instrument area the audit team verified the following instrument procedures:

- WP 12-HP1315, Rev. 2, *Ludlum Model 2350-1 Data Logger Remote Handled*
- WP 12-HP1317, Rev. 0, *Canberra iSolo Alpha/Beta Counting System*
- WP 12-HP1245, Rev. 7, *Tennelec Series 5XLB Low Background Alpha/Beta Counting System Opertation*
- WP 12-HP1303, Rev. 4, *Operation of the Xetex Digital Dosimeter Model 415A*

Radiological Survey activities were determined to be adequately documented and established for compliance to upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

Source Control

The audit team reviewed control of sources maintained at the Radiological Assistance Program (RAP) External Emergency Management office in the Skeen-Whitlock Building (room 152). The team examined WIPP Form WF13-015, dated 1-15-13, which documented small quantity sources that had been exempted under the current revision of WP 12-HP3200, Rev. 16, *Radioactive Material Control.* As a corrective action, this procedure is being revised to remove this exemption. Therefore, the sources were reviewed for compliance with the site source control program. The sources (or at least the lockbox containing the sources) are stated to be surveyed for contamination annually, in accordance with WP 12-HP3200. No survey results were available for review at the Skeen-Whitlock Building. There is no apparent check-in/checkout process for the sources. The inventory list provided was checked against the sources available in the lockbox. Two sources on the list (Cs137, 1 microcurie each, SN676 and SN840) were not found in the lockbox, but were said by the RAP Captain to be "on the truck," i.e., the RAP Region 4 truck. One source was present in the lockbox but was not on the list (Cs137, 1 microcurie, SN55). Because this issue is being addressed using a WIPP Form generated through a site management assessment, the audit team dispositioned this concern as an Observation (see Observation 1, section 7.3). Completion of the identified corrective action to close-out the WIPP Form was in process during this audit.

Radiological Control Responses and Reporting

The audit team conducted interviews with RC&D personnel and reviewed documentation to verify the program meets upper-tier requirements and other requirements outlined in implementing procedures WP 12-ER4903, Rev. 15, *Radiological Event Response*; WP 12-HP4000, Rev. 6, *Emergency Radiological Control Responses*; and WP 12-HP3700, Rev. 5, *Radiological Event Reporting.*

Staff interviews were conducted with the Central Monitoring Room Operators and the RE to address checklist questions, obtain objective evidence, and verify the adequacy of emergency radiological control responses and radiological event reporting/response activities conducted at the WIPP site.

The events reported and actions taken are documented in Operating Logs as required by WP 14-AD3008, *Shift Operating Logs and Round Sheets,* but that activity is not included in procedure WP 12-HP3700. A recommendation was made to reference WP 14-AD3008, in section 6.0 of WP 12-ER4903, Rev. 15, *Radiological Event Response* (see Recommendation 1, section 7.3).

Records reviews included radiological logbooks and incident reports. The audit team verified that radiological event reporting records/forms (generated from procedure WP

12-HP3700) were retained in accordance with applicable RIDS; however, no new records/forms have been created since the previous audit. New records/forms will be added to the RIDS when they are created. The team examined the following event reporting records/forms:

- Attachment 1 – Initial Radiological Event/Sample Data
- Attachment 2 – Gamma Spectroscopy Data
- Attachment 3 – Raw Alpha Spectroscopy Data
- Attachment 4 – Additional Analysis Data
- Attachment 5 – Emergency Sample Logic Matrix

Training documentation was verified for the RC&D Manager, RC&D Team Leader, technical experts, and REs. No concerns were identified.

Overall, emergency Radiological Control Responses and Reporting activities were determined to be adequately established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

Software Quality Assurance

The audit team evaluated the adequacy of SQA procedure WP 16-2, Rev. 13, *Software Screening and Control*, with respect to the CBFO QAPD and determined that the procedure contains adequate flow-down of upper-tier requirements. No new software applications have been developed over the last 36-month period. Testing was performed and documented where existing exempt operating system software was updated, ensuring that existing production software applications and versions operate properly using the updated system software. One concern was identified, classified as a condition adverse to quality, and corrected during the audit (see CDA-1, section 7.2).

The audit team reviewed the following software-related items from WP 12-ER4916, Rev. 18, *Consequence Assessment Dose Projection:*

- Plume calculation using HotSpot software
- Plume calculation using National Atmospheric Release Advisory Center software
- Manual plume calculation
- SQA implementation related to acquired software

The audit team concluded that software development, problem reporting, control, management, and the revision, review, and approval of life-cycle documentation activities are adequate.

Overall, Software Quality Assurance activities were determined to be adequately

established for compliance with upper-tier requirements, satisfactory in the implementation of these requirements, and effective in achieving the desired results.

6.0 CONCLUSION

Based upon the examination of the verified and collected evidence and interviews with responsible personnel, the NWP Dosimetry and RADCON Programs were determined to be adequately established for compliance with the QAPD, effectively implemented, and effective in achieving the desired results. Eight concerns were identified during the audit necessitating the initiation of two CARs, one CDA, one Observation, and one Recommendation.

7.0 SUMMARY OF DEFICIENCIES

7.1 Corrective Action Reports (CARs)

During the audit, the audit team may identify CAQs, as defined below, and document such conditions on CARs.

Condition Adverse to Quality (CAQ) – An all-inclusive term used in reference to any of the following: failures, malfunctions, deficiencies, defective items, nonconformances, and technical inadequacies.

Significant Condition Adverse to Quality (SCAQ) – A condition which, if uncorrected, could have a serious effect on safety, operability, waste confinement, TRU waste site certification, regulatory compliance demonstration, or the effective implementation of the QA program.

Two CAQs were identified during Audit A-13-16, necessitating the initiation of CARs 13-027 and 13-028, described below.

CAR 13-027

Procedure WP 12-DS1361, step 6.2.14 states, "File all paperwork in Dosimetry Records." Many of the filed copies of WP 12-DS1361 Attachment 2, Required Urine Sample Information, were copied in such a manner that the top lines of the forms identifying the individual being tested were cut off, thereby leaving an incomplete record. In addition, Request for Analysis (RFA) forms (for example, RFA 1207181) were incomplete because the "Received By" block was not signed prior to filing of the laboratory copy.

The requirement is found in procedure WP 12-DS1361, *Bioassay Scheduling, Sampling, Shipping, and Analysis Results Receipt*: "Performance of this procedure generates the following records, as applicable ... Attachment 2-Required Urine Sample Information Chain-of-Custody Request for Analysis." Step 6.2.9 of the procedure states, "Complete Chain-of-Custody (COC) Record and Request for Analysis," and step 6.2.14 states, "File all paperwork in Dosimetry Records."

CAR 13-028

WP 12-RC.01, Rev. 9, *Quality Assurance Program Plan for Sampling Emissions of Radionuclides to the Ambient Air at the Waste Isolation Pilot Plant* (QAPP), section 2.2 states that the RC&D group has primary responsibility for operating the WIPP Effluent Monitoring System.

In the RC&D group, the RADCON responsibilities include having a SOW between the NWP RADCON groups, Site Environmental Compliance, and the WIPP Laboratories that details the radiochemical analyses, QA, and reporting requirements. A copy of this SOW could not be provided. The language in section 2.2 of draft Rev. 10 of the QAPP is identical to that contained in Rev. 9.

7.2 Deficiencies Corrected During the Audit (CDAs)

Corrected During the Audit (CDA) – Isolated deficiencies that do not require a root cause determination or actions to preclude recurrence, and where correction of the deficiency can be verified prior to the end of the audit. Examples include one or two minor changes required to correct a procedure (isolated), one or two forms not signed or dated (isolated), and one or two individuals who have not completed a reading assignment.

During the audit, the audit team may identify CAQs. The audit team members and the Audit Team Leader (ATL) evaluate the CAQs to determine if they are significant. Once a determination is made that the CAQ is not significant, the audit team member, in conjunction with the ATL, determines if the CAQ is isolated requiring only remedial action and therefore can be corrected during the audit. Deficiencies that can be classified as CDA are those isolated deficiencies that do not require a root cause determination or actions to preclude recurrence, and those for which correction of the deficiency can be verified prior to the end of the audit.

Upon determination that the CAQ is isolated, the audit team member, in conjunction with the ATL, evaluates/verifies any objective evidence/actions submitted or taken by the audited organization and determines if the condition was corrected in an acceptable manner. Once it has been determined that the CAQ has been corrected, the ATL categorizes the condition as a CDA.

During the audit, one concern was identified and classified as a condition adverse to quality. Corrective action was completed during the audit and verified by the audit team.

The CDA, briefly described below, was discussed with the audit contact and presented during the Thursday daily management meeting.

CDA-1

The audit team determined that the software custodian for the HotSpot Version 2.07.1 software application had not performed installation testing and had not completed an installation/check-out form for the current operating platform.

Upon investigation, the software custodian determined that a computer hardware upgrade had been performed by the Information Technology department and that the software application and files from the old computer were migrated onto the new operating platform. The software versions were not changed and files were not revised during the migration process. Because of the method used to migrate the files, a Software Installation and Checkout Form (EA16-2-3-0) was not completed at the time of the upgrade.

The software custodian performed verification and validation testing of the HotSpot software application on the new operating platform using a test case supplied by the software creator. Testing was documented, a determination was made that test results were satisfactory, and a Form EA16-2-3-0 was completed. Review and approval signatures were obtained on the form and the document package was retained in Records in accordance with procedure.

The audit team verified that testing was adequate and that documentation was completed in accordance with procedure.

7.3 Observations and Recommendations

During the audit, the audit team may identify conditions that warrant input by the audit team to the audited organization regarding potential problems or suggestions for program improvement. The audit team members report these to the CBFO QA for evaluation and classification as observations or recommendations (using the following definitions).

Observation – A condition that is determined not to be a violation of procedure or requirement at the time but, if not controlled or addressed, may result in a CAQ during future activities.

Recommendation – A suggestion that is directed toward identifying opportunities for improvement and enhancing methods of implementing requirements.

Observations

One Observation was identified during this audit, as described below.

Observation 1

The audit team reviewed control of sources maintained at the RAP External Emergency Management office in the Skeen-Whitlock Building (room 152). The sources (or at least the lockbox containing the sources) are stated to be surveyed for contamination

annually, in accordance with WP 12-HP3200. No survey results of were available for review at the Skeen-Whitlock Building. There is no apparent check-in/checkout process. The inventory list provided was checked against the sources available in the lockbox. Two sources on the list were not found in the lockbox. One source was present in the lockbox but was not on the list (Cs137, 1 microcurie, SN55). Under an earlier NWP internal management assessment, WIPP Form WF13-015, dated 1-15-13, had been generated which documented that the small quantity sources used in the RAP were currently exempt under the current revision of WP 12-HP3200, *Radioactive Material Control*. During the period of this audit, corrective action to close-out the WIPP Form by removing this exemption was in process.

Recommendations

Recommendation 1

One Recommendation was identified during this audit.

Add a reference to procedure WP 14-AD3008, *Shift Operating Logs and Round Sheets*, in section 6.0 of WP 12-ER4903, Rev. 15, *Radiological Event Response*.

8.0 LIST OF ATTACHMENTS

Attachment 1: Personnel Contacted During the Audit

Attachment 2: Applicable NWP Documents Audited

PERSONNEL CONTACTED DURING THE AUDIT				
NAME	**ORGANIZATION/ DEPARTMENT**	**PRE-AUDIT MEETING**	**CONTACTED DURING AUDIT**	**POST-AUDIT MEETING**
Akbarzadeh, Mansour	URS, WIPP Laboratories		X	
Allen, B.	NWP, Quality Assurance	X		X
Beekman, Marsha	NWP, RAP Captain		X	
Billett, Robert	NWP, Dosimetry and RADCON Manager	X	X	X
Britain, Beau	NWP, RC&D		X	
Cannon, V.	NWP, Quality Assurance			X
Cortese, Sheree	NWP, ES&H Records Coordinator		X	
Flynn, Ed	NWP Maintenance		X	
Galloway, Glen	NWP RADCON Superintendent		X	
Hayes, Robert	NWP, Engineering & Technical Services		X	
Hoff, J.	NWP, Quality Assurance	X	X	
Jones, Ginny	URS, WIPP Laboratories		X	
Jones, Stewart	NWP, Manager		X	X
Mullins, M.	NWP, Quality Assurance		X	
Nance, Candice	NWP, Technical Training		X	
Proctor, Tricia	NWP, Quality Assurance		X	
Roybal, Eddie	NWP, ES&H Radiological Controls	X	X	
Sleeman, Ted	NWP, Radiological Control	X	X	X
Strait, Anne	NWP, Emergency Management		X	
Uroste, Caroline	NWP, ES&H Administration		X	

APPLICABLE NWP DOCUMENTS AUDITED

Number	Document Number	Applicable NWP Documents Audited
1.	WP 12-3	*WIPP Dosimetry Program*
2.	WP 12-4	*WIPP Radiological Assistance Plan*
3.	WP 12-5	*Waste Isolation Pilot Plant Radiation Safety Manual*
4.	WP 14-AD3008	*Shift Operating Logs and Round Sheets*
5.	WP 12-DS1321	*Material Requisition and Acceptance Testing of New Harshaw TLD Cards*
6.	WP 12-DS1323	*Storing Handling and Cleaning of Harshaw TLD Cards and Holders*
7.	WP 12-DS1329	*TLD Reader Operations*
8.	WP 12-DS1331	*Model 8800C TLD System Maintenance*
9.	WP 12-DS1339	*Harshaw TLD Dose Equivalent Determination*
10.	WP 12-DS1341	*External Dosimetry Program*
11.	WP 12-DS1361	*Bioassay Scheduling Sampling Shipping and Analysis Results Receipt*
12.	WP 12-DS1366	*Investigation of Potential Intake and Internal Dose*
13.	WP 12-DS3304	*Radiation Work Restriction*
14.	WP 12-DS3310	*Processing Radiation Dose Records and Radiation Dose Reporting*
15.	WP 12-DS3324	*External Dosimetry Background*
16.	WP 12-DS3325	*Processing Lost/Damaged TLD*
17.	WP 12-DS3326	*TLD Assignment Issue Retrieval*
18.	WP 12-DS3342	*Blind Testing*
19.	WP 12-ER4903	*Radiological Event Response*
20.	WP 12-ER4916	*Consequence Assessment Dose Projection*
21.	WP 12-HP1100	*Radiological Surveys*
22.	WP 12-HP1245	*Tennelec Series 5XLB Low Background Alpha/Beta Counting System Operation*
23.	WP 12-HP1303	*Operation of the Xetex Digital Dosimeter Model 415A*
24.	WP 12-HP1304	*Canberra iCAM Alpha/Beta Certified Air Monitor*
25.	WP 12-HP1305	*Air Sampling Equipment*
26.	WP 12-HP1306	*Canberra Alpha Sentry Continuous Air Monitor*
27.	WP 12-HP1307	*Portable Instrument and Portal Monitor Operability Checks*
28.	WP 12-HP1308	*Portable Alpha-6 Continuous Air Monitors*
29.	WP 12-HP1315	*Ludlum Model 2350-1 Data Logger Remote Handled*
30.	WP 12-HP1317	*Canberra iSolo Alpha/Beta Counting System*
31.	WP 12-HP1500	*Radiological Posting and Access Control*
32.	WP 12-HP2001	*Abnormal Radiological Conditions*
33.	WP 12-HP3000	*Radiological Control Administration*
34.	WP 12-HP3200	*Radioactive Material Control*
35.	WP 12-HP3300	*Radiation Exposure Control*
36.	WP 12-HP3500	*Airborne Radioactivity*
37.	WP 12-HP3600	*Radiological Work Permits*
38.	WP 12-HP3700	*Radiological Event Reporting*

Number	Document Number	Applicable NWP Documents Audited
39.	WP 12-HP4000	*Emergency Radiological Control Responses*
40.	WP 12-RC.01	*Quality Assurance Program Plan for the Sampling Emissions of Radionuclides to the Ambient Air at the Waste Isolation Pilot Plant*
41.	WP 12-RE3000	*Radiological Engineering Activities*
42.	WP 13-1	*NWP Quality Assurance Program Description*