

July 23, 2010

EA-10-135

Mr. Scott Ward
Senior Vice-President and General Manager
Analytical Bio-Chemistry Laboratories, Inc.
7200 East ABC Lane
Columbia, MO 65202

SUBJECT: NRC INSPECTION REPORT 030-05154/2010-001(DNMS) AND NOTICE OF VIOLATION – ANALYTICAL BIO-CHEMISTRY LABORATORIES, INC.

Dear Mr. Ward:

This letter refers to the U.S. Nuclear Regulatory Commission (NRC) inspection conducted on May 19 through 20, 2010 and June 22 through 23, 2010, at the Analytical Bio-Chemistry Laboratories site in Columbia, Missouri. The purpose of the inspection was to evaluate whether the decommissioning and final status survey activities regarding release of Buildings A, B, and D for unrestricted use were being conducted in accordance with NRC regulations and license conditions. On June 23, the inspector completed the inspection and held a final exit meeting with members of your staff. The enclosed report presents the results of this inspection.

This inspection examined decommissioning activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas, the inspection included an examination of licensing documentation and representative records, observations of activities, and interviews with personnel. In addition, the NRC performed limited confirmatory and independent radiological surveys of Building D.

Based on the results of this inspection, two apparent violations were identified and are being considered for escalated enforcement action in accordance with the NRC Enforcement Policy. The current Enforcement Policy is included on the NRC's website at <http://www.nrc.gov/about-nrc/regulatory/enforcement/enforcement-pol.html>.

The apparent violations involve failure to: 1) notify the NRC in writing within 60 days of decision to cease operations in Buildings D and F as required by Title 10 Code of Federal Regulations (CFR) 30.36(d); and 2) submit a decommissioning plan and receive NRC approval of procedures utilized in aggressive remediation activities as required by 10 CFR 30.36(g). The circumstances surrounding these apparent violations, the significance of the issues, and the need for lasting and effective corrective actions were discussed with members of your staff at the inspection exit meeting on June 23, 2010.

Before the NRC makes its enforcement decision, we are providing you an opportunity to: (1) respond to the apparent violations addressed in this inspection report within 30 days of the date of this letter; or (2) request a Pre-decisional Enforcement Conference (PEC). If a PEC is held, it will be open for public observation and the NRC will issue a press release to announce

the time and date of the conference. Please contact Katie Streit at 630-829-9621 or Mike McCann at 630-829-9856 within 7 days of the date of this letter to notify the NRC of your intended response.

If you choose to provide a written response, it should be clearly marked as a "Response to Apparent Violation in Inspection Report No. 030-05154/2010-001(DNMS); EA-10-135" and should include for each apparent violation: (1) the reason for the apparent violation, or, if contested, the basis for disputing the apparent violation; (2) the corrective steps that have been taken and the results achieved; (3) the corrective steps that will be taken to avoid further violations; and (4) the date when full compliance will be achieved. Your response may reference or include previously docketed correspondence, if the correspondence adequately addresses the required response. If an adequate response is not received within the time specified or an extension of time has not been granted by the NRC, the NRC will proceed with its enforcement decision or schedule a pre-decisional enforcement conference.

If you choose to request a PEC, the conference will afford you the opportunity to provide your perspective on the apparent violation and any other information that you believe the NRC should take into consideration before making an enforcement decision. The topics discussed during the conference may include: information to determine whether a violation occurred, information to determine the significance of a violation, information related to the identification of a violation, and information related to any corrective actions taken or planned to be taken. In presenting your corrective actions, you should be aware that the promptness and comprehensiveness of your actions will be considered in assessing any civil penalty for the apparent violations.

Please be advised that the number and characterization of apparent violations described in the enclosed inspection report may change as a result of further NRC review. You will be advised by separate correspondence of the results of our deliberations on this matter.

In addition, two Severity Level IV violations of NRC requirements occurred. The violations were evaluated in accordance with the NRC Enforcement Policy. The violations include failure to: 1) complete an adequate survey prior to release for unrestricted use of buildings A and B; and 2) to comply with emergency spill procedures. These violations are cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding them are described in detail in the subject inspection report. The violations are being cited in the Notice because they were identified by the NRC inspectors.

You are required to respond to the Severity Level IV violations in this letter and should follow the instructions specified in the enclosed Notice when preparing your response. The guidance in NRC Information Notice 96-28, "Suggested Guidance Relating to Development and Implementation of Corrective Action," may be helpful. You can find the information notice on the NRC website at: <http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/1996/in96028.html>. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

S. Ward

-3-

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC website at <http://www.nrc.gov/readingrm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

We will gladly discuss any question you may have regarding this inspection.

Sincerely,

/RA/

Steven A. Reynolds, Director
Division of Nuclear Materials Safety

Docket No. 030-05154
License No. 24-13365-01

Enclosures:

1. Notice of Violation
2. Inspection Report 030-05154/2010-001(DNMS)

cc w/encls: J. Langston, Missouri Department of Health and Senior Services (MDHSS)
K. Henke, MDHSS
E. McCoy, Radiation Safety Officer

S. Ward

-3-

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosures, and your response, will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC website at <http://www.nrc.gov/readingrm/adams.html>. To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

We will gladly discuss any question you may have regarding this inspection

Sincerely,

/RA/

Steven A. Reynolds, Director
Division of Nuclear Materials Safety

Docket No. 030-05154
License No. 24-13365-01

Enclosures:

- 1. Notice of Violation
- 2. Inspection Report 030-05154/2010-001(DNMS)

cc w/encls: J. Langston, Missouri Department of Health and Senior Services (MDHSS)
K. Henke, MDHSS
E. McCoy, Radiation Safety Officer

DISTRIBUTION:

See next page

*See previous concurrence

DOCUMENT NAME: G:\Work in progress\IR- ANALYTICAL BIO-CHEMISTRY LABORATORIES INC (ABC) clipa (2).docx

Publicly Available Non-Publicly Available Sensitive Non-Sensitive

To receive a copy of this document, indicate in the concurrence box "C" = Copy without attach/encl "E" = Copy with attach/encl "N" = No copy

OFFICE	RIII DNMS	C	RIII DNMS	C	RIII	C	RIII	
NAME	KNStreit; jm*CL for		SKOrth*		CALipa*		SAReynolds	
DATE	07/23/10		07/23/10		07/23/10		07/23/10	

OFFICIAL RECORD COPY

Letter to Scott Ward from Steven A. Reynolds dated July 23, 2010

SUBJECT: NRC INSPECTION REPORT 030-05154/2010-001(DNMS) AND NOTICE OF VIOLATION – ANALYTICAL BIO-CHEMISTRY LABORATORIES, INC.

DISTRIBUTION:

RidsSecyMailCenter.Resource
OCADistribution
Bill Borchardt
Michael Weber
Roy Zimmerman
Andy Campbell
Nick Hilton
Kerstun Day
Mark Satorius
Cynthia Pederson
Marvin Itzkowitz
Catherine Scott
Charles Miller
Robert Lewis
Michele Burgess
Glenda Villamar
Duane White
Daniel Holody
Carolyn Evans
William Jones

Holly Harrington
Hubert Bell
Cheryl McCrary
Cynthia Rheame
Mona Williams
Patrick Louden
Tamara Bloomer
Geoffrey Warren
Jared Heck
Allan Barker
Harral Logaras
James Lynch
Viktoria Mitlyng
Prema Chandrathil
Patricia Lougheed
Paul Pelke
Magdalena Gryglak
Patricia Buckley
Tammy Tomczak
OEMAIL
OEWEB EA-10-135 File

NOTICE OF VIOLATION

**Analytical Bio-Chemistry Laboratories, Inc.
Columbia, Missouri**

**Docket No. 030-05154
License No. 24-13365-01**

During an U.S. Nuclear Regulation Commission (NRC) inspection conducted from May 19 through June 23, 2010, violations of NRC requirements were identified. In accordance with the Enforcement Policy, the violations are listed below:

- A. Condition 21 of License Number 24-13365-01 states, in part, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the application dated July 16, 2007.

Item 10 titled "Safe Use of Radionuclides and Emergency Procedures" of the application states, in part, that the licensee will survey their facilities and maintain contamination levels in accordance with survey frequencies and contamination levels published in Appendix S of NUREG-1556, Volume 11, "Program-Specific Guidance About Licenses of Broad Scope."

NUREG-1556, Volume 11, Appendix S requires, in part, that when facilities that are potentially contaminated are to be released for unrestricted use, that the carbon-14 average fixed contamination maximum acceptable residual level is 5,000 disintegrations per minute per 100 centimeters square (dpm/cm²) and that contamination surveys are to be conducted for both removable and fixed contamination before these facilities are released for unrestricted use, to ensure that they meet these limits.

Contrary to the above, on September 13, 2009, the licensee released Buildings A and B for unrestricted use without conducting a survey that met the requirements of NUREG-1556, Appendix S. Specifically, the licensee's minimum detectable activity for the survey meter utilized in the release of Buildings A and B was 10,271 dpm/100 cm², which exceeds the licensee's fixed average maximum acceptable residual level of 5,000 dpm/100 cm² for carbon-14.

This is a Severity Level IV violation (Supplement VI).

- B. Condition 21 of License Number 24-13365-01 states, in part, that the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the application dated July 16, 2007.

Item 10, "Safe Use of Radionuclides and Emergency Procedures" in the application states, in part, that the licensee will follow the model programs published in Appendix R of NUREG-1556, Volume 11, "Program-Specific Guidance About Licenses of Broad Scope."

NUREG-1556, Volume 11, Appendix R requires, in part, workers are to report minor spills of liquids or solids to the Radiation Safety Officer (RSO) promptly and that no one was allowed to return to work in the area unless approved by the RSO.

Contrary to the above, on June 21, 2010, a worker did not promptly inform the RSO after a minor spill of potentially contaminated liquid occurred and the worker returned to work in the area without approval from the RSO. Specifically, during demolition activities on a

fume hood drain line, an unexpected spill of a radioactive contaminated liquid from the vent duct drain line occurred contaminating a laboratory countertop. The worker did not properly inform the RSO, but continued decontamination efforts.

This is a Severity Level IV violation (Supplement VI).

Pursuant to the provisions of 10 CFR 2.201, Analytical Bio-Chemistry Laboratories is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, Region III, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level; (2) the corrective steps that have been taken and the results achieved; (3) the corrective steps that will be taken to avoid further violations; and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an Order or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's Agency Documents Access and Management System (ADAMS), accessible from the NRC website at <http://www.nrc.gov/reading-rm/adams.html>, to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information).

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this 23rd day of July 2010.

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No.: 030-05154

License No.: 24-13365-01

Report No.: 030-05154/2010-001(DNMS)

Licensee: Analytical Bio-Chemistry Laboratories, Inc.

EA No. EA-10-135

Facility: 7200 ABC Lane
Columbia, Missouri

Dates: May 19 - 20, 2010 and June 22 - 23, 2010

Inspector: Katie Streit, Health Physicist

Approved by: Christine A. Lipa, Chief
Materials Control, ISFSI,
and Decommissioning Branch
Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Analytical Bio-Chemistry Laboratories, Inc. NRC Inspection Report 030-05154/2010-001(DNMS)

The U.S. Nuclear Regulatory Commission (NRC) inspection evaluated Analytical Bio-Chemistry Laboratories' (ABC) performance related to the conduct of final status surveys used for the release of Buildings A and B for unrestricted use. The inspection also evaluated decommissioning activities and surveys completed in Building D in preparation for unrestricted release. The inspection scope included evaluation of radiation protection practices, conduct of surveys, appropriateness of remediation activities, and licensing documents.

Decommissioning Activities

- The inspector identified two apparent violations regarding the licensee's remediation and decommissioning activities in Buildings D and F.
 - The licensee appears to have failed to notify the NRC in writing within 60 days of the decision to cease operations in Buildings D and F in accordance with the requirements of Title 10 Code of Federal Regulations (CFR) 30.36(d)(2). (Section 3.2)
 - The licensee appears to have conducted remediation activities outside of the scope of the bounds of their license without prior submittal of a decommissioning plan and NRC approval of procedures as required by 10 CFR 30.36(g). The licensee has committed to stop all aggressive remediation activities and evaluate the need for a decommissioning plan as required by 10 CFR 30.36. (Section 3.2)
- The inspector identified a violation involving the failure to conduct an adequate survey to identify whether residual contamination exceeded the licensee's maximum acceptable residual levels for unrestricted use prior to releasing Buildings A and B for unrestricted use. (Section 1.2).
- The inspector identified that a worker failed to promptly notify the Radiation Safety Officer when liquid spilled out of a fume hood drain line after the worker cut out the fume hood. This was a violation of licensee procedures tied down in the License. (Section 3.3)

NRC Closeout Survey Results

- During inspection of licensee activities in production building D, which was undergoing radiological characterization activities, the inspector determined that the direct survey methods employed by the licensee may not be adequate for determining acceptability for unrestricted use. The licensee advised the inspector that the building surveys will be re-evaluated, and additional characterization surveys will be performed. (Section 2.3)

Report Details

1.0 Closeout Inspection and Surveys for Buildings A and B (IP 83890)

1.1 Inspection Scope

The inspector interviewed the licensee's radiation safety management and staff regarding decommissioning surveys and activities completed for Buildings A and B. These two buildings were released for unrestricted use and were subsequently demolished. The inspector evaluated the survey technique of the radiation safety technician (RST) who performed the close-out survey of the buildings. In addition, the inspector reviewed and evaluated the following documents: 1) Final Status Survey (FSS) submitted to the U.S. Nuclear Regulatory Commission (NRC) by letter dated September 17, 2009; 2) Calibration Record for radiological survey instruments used in the final status survey of Buildings A and B; 3) Radiation Safety Technician training records; 4) September 30, 2009 Radiation Safety Committee Meeting Minutes; and 5) the Final Status Survey for Buildings A and B.

1.2 Observations and Findings

The licensee possesses a Type A Broadscope license, which allows the licensee to internally evaluate buildings and areas where licensed materials have been used, and if determined to be below NRC regulatory limits, release these buildings and areas for unrestricted use without prior NRC approval. The FSS dated September 17, 2009, enclosed two memoranda's dated September 4, 2009, and August 14, 2009, which stated Buildings A and B were suitable for release for unrestricted use. Buildings A and B were released for unrestricted use during the September 30, 2009, radiation safety committee meeting. The licensee demolished the buildings after their release.

The licensee's final status surveys for Buildings A and B involved the performance of radiation scan measurements taken on the surface of the floor, walls, and ceilings and the collection of samples for the determination of removable contamination. The licensee used a one meter by one meter reference grid system for collecting samples for removable contamination. The samples were analyzed in a calibrated liquid scintillation counter (LSC).

The licensee's RST performed scan measurements on the buildings' surface area using a calibrated analog Geiger-Mueller (GM) survey meter with a pancake probe (14.5 cm² detection area attached). The survey meter did not have the capability to perform integrated timed measurements. The licensee was provided a minimum detectable activity (MDA) from their calibration services of 10,271 disintegrations per minute (dpm) per 100 cm². The licensee's staff did not perform independent calculations to determine the survey meter's MDA.

Condition 21 of Amendment No. 34 to ABC's License dated December 1, 2008 states, in part, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the application dated July 16, 2007. Item 10 in the application titled "Radiation Safety Program" requires, in part, that the licensee will survey their facility and maintain contamination levels in accordance with the survey frequencies and contamination levels established in Appendix S to NUREG-1556, Volume 11. Appendix S specifies that the maximum average fixed contamination

levels for unrestricted use of facilities and equipment where carbon-14 has been used is 5,000 dpm/100 cm². Additionally, Appendix S specifies that surface contamination surveys are to be conducted for both removable and fixed contamination before these facilities are released for unrestricted use, to ensure that they meet these limits.

By using a survey meter not capable of detecting radiological levels at or below 5,000 dpm/100 cm², the licensee failed to conduct an adequate survey to demonstrate that the two buildings released for unrestricted use met the average fixed contamination levels for carbon-14 as required by Appendix S. The failure to demonstrate compliance with license radiological unrestricted use limits constitutes a violation of license requirements. This is a Severity Level IV violation (VIO 03005154/2010-01-01).

Conclusions

The inspector identified a violation involving the failure to conduct an adequate survey to identify whether residual contamination exceeded the licensee's maximum acceptable residual levels for unrestricted use prior to releasing Buildings A and B for unrestricted use.

2.0 Closeout Inspection and Surveys for Building D (IP83890)

2.1 Inspection Scope

The inspector observed and evaluated the licensee's personnel during the final status survey for release of Building D. The inspector reviewed the licensee's procedure titled, "Facility and Equipment Contamination Surveys," revision dated June 21, 2010. The inspector observed licensee activities pertaining to the proper calibration and use of survey instrumentation in the release for unrestricted use. The inspector also performed side-by-side radiological measurements inside Building D to verify the licensee's survey results and instrument response.

During the May 19, 2010, on-site inspection, the inspector performed independent radiological surveys in Building D, which included direct radiological measurements and the collection of 4 samples for removable contamination in biased areas. The inspector used a GM detector with an associated pancake detector to conduct a direct radiological scan survey. Daily checks of the instrument for operability prior to and during the conduct of the survey were performed. The samples for removable contamination were sent to the NRC's contract laboratory, the Oak Ridge Institute for Science and Education (ORISE), for carbon-14 and hydrogen-3 analysis. The NRC inspectors performed surveys of 3 previously radiological controlled laboratories, office and entry areas, and one non-radiological controlled laboratory. The survey focused on biased areas, such as previously used fume hoods, walls and floors around previous work areas, and sinks.

During the June 22, 2010 on-site inspection, the inspector performed independent radiological surveys focusing on laboratory fume hood ventilation systems, piping and countertops where licensed materials had been used.

2.2 Observations and Findings

The RSTs demonstrated adequate methodology for performing radiological scanning surveys and collecting test samples for removable contamination during the Building D

final status survey. During the May 19 inspection, an RST was utilizing a GM survey meter with a pancake probe similar to the instrument and method described above used in Buildings A and B. The inspector noted that the MDA for this survey meter also exceeded the licensee's maximum acceptable unrestricted use limit for fixed contamination limit of 5,000 dpm/100 cm² for carbon-14.

During the May 19 on-site inspection, the inspector's surveys of laboratories in Building D identified several areas of fixed carbon-14 contamination. The fixed contamination was identified in fume hoods above 22,000,000 dpm/100 cm², on floors above 2,800,000 dpm/100 cm², and on countertops and sinks above 1,000,000 dpm/100 cm². The NRC's contract laboratory ORISE reported the results of the 4 wipe tests for removable carbon-14 ranging from MDA to 7,800 dpm/100 cm² (ADAMS Accession Number ML101800141).

During the June 22, on-site inspection, the RST was observed using a GM survey meter with a pancake probe with the ability to perform integrated time measurements. The inspector was informed that the licensee's contamination investigation level is 1,000 counts per minute (cpm). The RST performed a scan survey over each survey grid and performed 1 minute integrated counts in areas above the investigation limit of 1,000 cpm. The inspector noted that the licensee's action limit would be approximately 222,000 dpm/100 cm², after correcting the measurement to adjust for instrument efficiency and detector probe area. The licensee's instrument calibration certificate noted a carbon-14 efficiency of 3.14%, and the probe had an active area of 14.5 cm². Therefore, the licensee's investigation limit exceeds the maximum acceptable residual levels for carbon-14 for average fixed contamination of 5,000 dpm/100 cm². Additionally, the inspector's surface scan surveys of laboratories in Building D identified several areas of fixed carbon-14 contamination in previously used radioactive material laboratories. Fixed contamination was identified in fume hood ventilation lines of 48,000 to 1,300,000 dpm/100 cm² and several countertops and cabinets of 20,000 to 70,000 dpm/100 cm². Based on the inspector's findings, the licensee informed the inspector that the previous radiological building surveys will be re-evaluated, and that additional characterization surveys will be performed.

2.3 Conclusions

During inspection of licensee activities in production building D, which was undergoing radiological characterization activities, the inspector determined that the direct survey methods employed by the licensee may not be adequate for determining acceptability for unrestricted use. The licensee advised the inspector that the building surveys will be re-evaluated and additional characterization surveys will be performed.

3.0 **Decommissioning Inspection Procedure for Materials Licensees (IP87104)**

3.1 Inspection Scope

The inspector interviewed the licensee's radiation safety management and staff regarding the timeline associated with the decision to cease radiological principal activities in Buildings D and F.

The inspector also evaluated the aggressive remediation activities performed in Building D by the licensee. The aggressive techniques involved the sawing and removal

of several fume hoods, laboratory floors, ventilation ducts and laboratory counter tops, to prepare the release for unrestricted use. The inspector interviewed licensee's radiation safety management and staff in regards to remediation activities conducted on the weekend of June 19 to 21, 2010. The inspector evaluated the licensee's conduct and results of the survey of sawed fume hood survey ventilation lines, pipes, countertops and cabinets. The inspector performed independent surveys of fixed contamination on several of the cut objects.

3.2 Observations and Findings

During the inspection on May 19, 2010, the inspector was informed that the licensee was preparing Building D for release for unrestricted use. On November 16, 2009, the licensee's management decided to cease operations in Buildings D and F and planned to demolish the building by July 2010.

Building D was a laboratory research facility, which utilized carbon-14. Building F was the licensee's radiological waste storage building. The RSO informed the inspector that both buildings were expected to require decontamination. During the May inspection, the RSO believed that the decontamination activities would involve cleaning, such as wiping down areas with a decontaminating agent or removing contaminated equipment, to meet license unrestricted use criteria described in Section 2.2 above. The licensee was in the process of relocating laboratories, removing equipment, and conducting final status surveys in Building D.

Title 10 CFR 30.36(d)(2) requires, in part, that licensees provide notification to the NRC in writing within 60 days of the licensee deciding to permanently cease principal activities in any separate building that contains residual radioactivity such that the building is unsuitable for release in accordance with NRC requirements. The inspector determined that the licensee made a decision to cease licensed activities in Building D on November 16, 2009. Since the licensee's records and inspector findings revealed that radiological levels in Building D exceeded the licensee's license unrestricted use limits, the licensee pursuant to 10 CFR 30.36(d) should have notified the NRC in writing by January 16, 2010. The licensee provided notification of the decision to cease operations in Building D to the NRC on July 14, 2010.

The inspector determined that the licensee made a decision to cease operations in Building F during February 2010. Based on inspector discussions with the licensee's management, the review of licensee's records, and past NRC inspection findings, the inspector determined that radiological levels in Building F exceeded the licensee's unrestricted contamination use limits. Therefore, pursuant to 10 CFR 30.36(d), the licensee should have notified the NRC in writing by April 30, 2010. The licensee's failure to notify the NRC by the dates specified above, informing the NRC that licensed activities had ceased in buildings exceeding NRC unrestricted use radiological limits constitutes an apparent violation of 10 CFR 30.36(d)(2) (AV 03005154-2010-01-02).

The licensee performed aggressive remediation activities in Building D, involving the sawing and removal of radiologically contaminated fume hoods, laboratory floors, ventilation ducts and laboratory counter tops. The inspector review of the licensee's license and reference materials incorporated into the license by reference, did not identify NRC reviewed and approved procedures addressing aggressive remediation activities involving sawing, or other destructive demolition activities. The inspector also

determined that the licensee had not developed any work plans or performed evaluations addressing the radiological consequences prior to doing the aggressive work.

On June 22, 2010, the licensee completed a survey to determine the extent of removable contamination on ventilation ducts around the sawed areas. The samples were analyzed in the licensee's liquid scintillation counter (LSC). Removable carbon-14 contamination was found in excess of 5,000 dpm/100 cm², which exceeded the licensee's operational limit of 1,000 dpm/100 cm² for removable contamination. The NRC inspector's independent survey identified fixed carbon-14 contamination ranging from 48,000 to 1,300,000 dpm/100 cm² on the insides of fume hood ventilation piping located in the ceiling. The inspector's survey also identified fixed carbon-14 contamination of approximately 550,000 dpm/100 cm² on the handle of a cut water line and 100,000 dpm/100 cm² on several sawed countertops and cabinets.

Title 10 CFR 30.36(g)(1) states, in part, that a decommissioning plan must be submitted if the procedures and activities necessary to carry out decommissioning of a separate building have not been previously approved by the Commission and these procedures could increase potential health and safety impacts to workers or to the public, such as: 1) procedures would involve techniques not applied routinely during cleanup or maintenance operations; 2) workers would be entering areas not normally occupied when surface contamination and radiation levels are significantly higher than routinely encountered during operation; or 3) procedures could result in significantly greater airborne concentration of radioactive materials than are present during operation. In addition, 10 CFR 30.36(g)(3) states that procedures such as those listed in paragraph (g)(1) of this section with potential health and safety impacts may not be carried out prior to approval by the NRC of the decommissioning plan. In addition, 10 CFR 30.36(g)(3) states that procedures such as those listed in paragraph (g)(1) of this section with potential health and safety impacts may not be carried out prior to approval of the decommissioning plan.

The licensee's performance of aggressive decontamination work, which was not done during routine licensed operations, and was not done under the auspices of an NRC approved decontamination plan nor NRC approved procedures appears to be an apparent violation of 10 CFR 30.36(g)(1) and 10 CFR 30.36(g)(3) (AV 03005154/2010-01-03).

During an inspector interview of a licensee worker, it was indicated that on June 21, 2010, liquid spilled out of a fume hood drain line after the worker completed sawing activities. The worker stated that the liquid was surveyed and found to be radioactive and that the worker proceeded to clean the liquid with absorbent towels, disposing of the towels as radiological waste. The worker informed the inspector that the RSO was not promptly informed of the spill instead the worker proceeded with the demolition effort by sawing a countertop to remove radiological contamination. On June 23, 2010, a smear sample was taken on the inside of the pipe in the area of the cut and did not indicate elevated levels of contamination.

Condition 21 of Amendment No. 34 to ABC's License dated December 1, 2008, states, in part, that the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the application dated July 16, 2007.

Item 10, "Safe Use of Radionuclides and Emergency Procedures" in the application states, in part, that the licensee will follow the model programs published in Appendix R of NUREG-1556, Volume 11, "Program-Specific Guidance About Licenses of Broad Scope." Appendix R states, in part, that workers are to report minor spills of liquids or solids to the Radiation Safety Officer (RSO) promptly, and that no one was allowed to return to work in the area unless approved by the RSO. The worker's failure to notify the RSO promptly and the worker's return to work without RSO approval is a violation of license Condition 21. This is a Severity Level IV violation (VIO 03005154-2010-01-04).

3.3 Conclusion

The inspector identified an apparent violation of 10 CFR 30.36(d)(2) of the licensee's failure to notify the NRC in writing of their decision to cease operations in two buildings in accordance with 10 CFR 30.36(d)(2). The inspector identified an apparent violation of 10 CFR 30.36(g)(1) and (g)(3) for the licensee's failure to submit a decommissioning plan and have NRC approved procedures prior to the conductance of aggressive remediation activities. Additionally, the inspector identified one potential violation on the licensee's procedures for failure to notify the RSO promptly of a spill of potentially contaminated liquid.

4.0 **Exit Meeting**

The NRC inspectors presented inspection findings to members of licensee management at the conclusion of the on-site inspection on May 19, 2010, and a final exit was conducted at the conclusion of the on-site inspection on June 23, 2010. The licensee did not identify any documents or processes reviewed by the inspectors as proprietary.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Sheila Hecht, Radiation Safety Officer*#
Elaine McCoy, Director, Human Resources*#
Troy DeVault, Director, Director of Corporate Services#
Thomas Sandors, Safety Coordinator

* Persons present at the preliminary exit meeting on May 20, 2010.

Persons present at the exit meeting on June 23, 2010.

INSPECTION PROCEDURES USED

IP 83822 Radiation Protection
IP 87104 Decommissioning Inspection Procedure for Material Licensees
IP 83890 Closeout Inspection and Survey

ITEMS OPENED, CLOSED, AND DISCUSSED

<u>Opened</u>	<u>Type</u>	<u>Summary</u>
03005154/10-01-01	VIO	Failed to conduct adequate surveys prior to release for unrestricted use of Buildings A and B
03005154/10-01-02	AV	Failed to notify the NRC in writing of decision to cease principal activities in Buildings D and F
03005154/10-02-03	AV	Failed to submit a decommissioning plan and have procedures approved by the commission prior to performance of aggressive remediation activities
03005154/10-01-04	VIO	Failed to follow emergency spill procedures

Closed None

Discussed None

PARTIAL LIST OF DOCUMENTS REVIEWED

Licensee documents reviewed and utilized during the course of this inspection are specifically identified in the "Report Details" above.

LIST OF ACRONYMS USED

ADAMS	Agencywide Documents Access and Management System
CFR	Code of Federal Regulations
cpm	counts per minute
dpm/cm ²	disintegrations per minute per centimeters square
FFS	final status survey
IP	Inspection Procedure
GM	Geiger-Mueller
LSC	liquid scintillation counter
mda	minimum detectable activity
mdc	minimum detectable concentration
NRC	Nuclear Regulatory Commission
ORISE	Oak Ridge Institute for Science and Education
RST	radiation safety technician
RSO	Radiation Safety Officer