

September 25, 2007

MEMORANDUM TO: James L. Caldwell, Regional Administrator  
Region III

FROM: Aaron T. McCraw, IMPEP Project Manager **/RA/**  
Division of Materials Safety and State Agreements  
Office of Federal and State Materials  
and Environmental Management Programs

SUBJECT: OPPORTUNITY TO COMMENT ON THE DRAFT REGION III  
INTEGRATED MATERIALS PERFORMANCE EVALUATION  
PROGRAM REPORT

A review team comprised of members from the Office of Federal and State Materials and Environmental Management Programs, Region I, Region IV, and the State of North Carolina performed an Integrated Materials Performance Evaluation Program (IMPEP) review of the Region III radioactive materials program during the week of August 27, 2007. I was the team leader for the review. Enclosed for your review is the draft IMPEP report, which documents the review. The review team's findings were discussed with you, Mr. Mark Satorius, Mr. Steven Reynolds, and other Region III managers on August 30, 2007.

The review team's proposed recommendation is that the Region III nuclear materials program be found adequate to protect public health and safety. The final determination of the adequacy of your program, based on the review team's report, will be made by a Management Review Board (MRB) composed of U.S. Nuclear Regulatory Commission managers and an Agreement State program manager who serves as a liaison to the MRB.

In accordance with procedures for implementation of IMPEP, we are providing you with a copy of the review team's draft report for your review and comment prior to submitting the report to the MRB. Comments are requested within four weeks from your receipt of this memorandum. This schedule will permit the issuance of the final report in a timely manner that will be responsive to your needs.

The team will review your response, make any necessary changes to the report, and issue it to the MRB as a proposed final report. Our preliminary scheduling places the Region III MRB meeting in the week of November 12, 2007. I will coordinate with you to establish the date for the MRB review of the Region III report.

If you have any questions regarding the enclosed draft report, please contact me at (301) 415-1277.

Enclosure: Draft Region III IMPEP Report

cc: M. Satorius, RIII  
S. Reynolds, RIII

J. L. Caldwell

September 25, 2007

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INTEGRATED MATERIALS PERFORMANCE EVALUATION PROGRAM  
REVIEW OF THE NRC REGION III RADIOACTIVE MATERIALS PROGRAM

August 27-30, 2007

**DRAFT REPORT**

**ENCLOSURE**

## 1.0 INTRODUCTION

This report presents the results of the review of the U.S. Nuclear Regulatory Commission (NRC) Region III radioactive materials program. The review was conducted during the period of August 27-30, 2007, by a review team comprised of technical staff members from the NRC and the State of North Carolina. Team members are identified in Appendix A. The review was conducted in accordance with the "Implementation of the Integrated Materials Performance Evaluation Program and Rescission of Final General Statement of Policy," published in the *Federal Register* on October 16, 1997, and the February 26, 2004, NRC Management Directive 5.6, "Integrated Materials Performance Evaluation Program (IMPEP)." Preliminary results of the review, which covered the period of March 29, 2003, to August 30, 2007, were discussed with Region III managers on the last day of the review.

[A paragraph on the results of the Management Review Board (MRB) meeting will be included in the final report.]

The Region III radioactive materials program is administered by the Director, Division of Nuclear Materials Safety (the Division), who reports directly to the Regional Administrator. Organization charts for Region III and the Division are included as Appendix B. At the time of the review, the Division regulated approximately 1,250 specific licenses authorizing the possession and use of radioactive materials.

In preparation for the review, a questionnaire addressing the common performance indicators was sent to the Division on April 12, 2007. The Division provided its response to the questionnaire on August 10, 2007. A copy of the questionnaire response may be found in the NRC's Agencywide Documents Access and Management System (ADAMS) using Accession Number ML072680482.

The review team's general approach for conduct of this review consisted of: (1) examination of the Division's response to the questionnaire; (2) analysis of quantitative information from the licensing, inspection, and allegation databases, as well as ADAMS; (3) technical review of selected regulatory actions; (4) field accompaniments of four of the Division's radioactive materials inspectors; and (5) interviews with staff and managers to answer questions or clarify issues. The review team evaluated the information gathered against the established criteria for each common performance indicator and made a preliminary assessment of the Division's performance.

Section 2.0 of this report covers Region III's actions in response to any recommendations made during the previous review. Results of the current review for the common performance indicators are presented in Section 3.0, and Section 4.0 summarizes the review team's findings.

## 2.0 STATUS OF ITEMS IDENTIFIED IN PREVIOUS REVIEWS

During the previous IMPEP review, which concluded on March 28, 2003, the review team made no recommendations in regard to program performance.

### 3.0 COMMON PERFORMANCE INDICATORS

IMPEP identifies five common performance indicators to be used in reviewing NRC Regional and Agreement State radioactive materials programs. These indicators are: (1) Technical Staffing and Training, (2) Status of Materials Inspection Program, (3) Technical Quality of Inspections, (4) Technical Quality of Licensing Actions, and (5) Technical Quality of Incident and Allegation Activities.

#### 3.1 Technical Staffing and Training

Issues central to the evaluation of this indicator include the Division's staffing level and staff turnover, as well as the technical qualifications and training histories of the staff. To evaluate these issues, the review team examined the Division's questionnaire response relative to this indicator; interviewed Division managers and staff; and reviewed job descriptions, training plans, and training records. The review team also considered any possible workload backlogs in evaluating this indicator.

During the 2003 IMPEP review, the Division was composed of four branches: the Materials Licensing Branch, the Materials Inspection Branch, the Decommissioning Branch, and the Fuel Cycle Branch. During the review period, the NRC's Regional Fuel Cycle Inspection Program was consolidated in the Region II Atlanta Office, effectively eliminating the Division's Fuel Cycle Branch. The Division currently operates with the Materials Licensing Branch, the Inspection Branch, and the Decommissioning Branch; each headed by a Branch Chief.

At the time of the review, the Division was staffed with 23 direct full time equivalents (FTEs), a reduction of 2.5 direct FTE from the previous IMPEP review. The decrease in FTE can be attributed to the transfer of approximately 415 radioactive materials licenses to two States that became Agreement States during the review period (Wisconsin in 2003 and Minnesota in 2006). Overall, staffing was relatively stable over the review period. The review team noted that there was considerable turnover in the Decommissioning Branch Chief position; however, the turnover did not appear to affect the Decommissioning Branch's performance during the review period. At the time of the review, the Division had no vacant positions.

The review team determined that the Division's Operational Management Information (OMI) reports help Division managers efficiently use their staff resources. Despite the reduction in direct FTE, the Division has been capable of taking on additional workload, such as Increased Controls inspections. The Division is also assisting the Region I radioactive materials program by performing inspections in Region I while Region I is focusing its resources on the proposed Section 274b. (of the Atomic Energy Act) Agreement with the Commonwealth of Pennsylvania. The Division has also been very active in contributing resources to NRC Working Groups and IMPEP reviews of other NRC Regional Offices and Agreement State programs.

The Division uses Inspection Manual Chapter (IMC) 1246 and associated procedures as its qualification and training program. During the review period, one individual successfully completed the Nuclear Safety Professional Development Program (NSPDP) and achieved inspector qualification. At the time of the review, one NSPDP participant in the Decommissioning Branch was undergoing inspector qualification and training. This individual is expected to complete the required qualifications and training by July 2008. Division managers

are supportive of staff training opportunities. A majority of the Division's radioactive materials inspectors have attended the NRC's Security Systems and Principles Course.

To promote knowledge management, the Division takes advantage of mentoring opportunities of less experienced staff. New staff is assigned a specific senior technical staff member as a mentor. The review team found that all senior technical staff members are willing to provide guidance and assist newer staff on their assigned projects.

Based on the IMPEP evaluation criteria, the review team recommends that Region III's performance with respect to the indicator, Technical Staffing and Training, be found satisfactory.

### 3.2 Status of Materials Inspection Program

The review team focused on five factors while reviewing this indicator: inspection frequency, overdue inspections, initial inspections of new licenses, timely dispatch of inspection findings to licensees, and performance of reciprocity inspections. The review team's evaluation was based on the Division's questionnaire response relative to this indicator, data gathered from the Division's database, examination of completed inspection casework, and interviews with Division managers and staff.

The review team verified that the Division adheres to the inspection priorities prescribed in IMC 2800. The Division appropriately modified inspection schedules in response to revisions to IMC 2800 during the review period. The review team noted that the Division continues to implement its broad scope inspection initiative as discussed in the 1999 and 2003 IMPEP reports. This initiative allows several partial inspections of major broad scope licensees to be conducted within the inspection cycle, as long as all inspection objectives are met through the aggregation of the partial inspections.

The review team determined that the Division conducted 752 inspections of Priority 1, 2, and 3 licensees during the review period. The review team identified five of these inspections as performed overdue by more than 25 percent of the inspection frequency listed in IMC 2800. Three of the overdue inspections can be attributed to input errors into the Licensing Tracking System (LTS). For these three cases, the inspection priorities changed because of program code changes; however, the dates of the next inspections were not modified in LTS, thereby causing the inspections to be performed based on their previous inspection priority. The review team determined that the Division conducted 207 initial inspections of new radioactive materials licenses during the review period. Of the 207 initial inspections, two were performed greater than 12 months after license issuance. Overall, the review team calculated that the Division performed 0.7 percent of all Priority 1, 2, and 3 inspections and initial inspections overdue during the review period.

During the on-site portion of the review, the Division demonstrated its Inspection Planner Database to the review team. This database was independently developed by the Division to gain efficiency in the inspection planning process. The database is populated and updated by monthly downloads from LTS. Information provided from LTS, such as a licensee's address and inspection dates, can be automatically entered into the respective fields on the planning form when a licensee's name or license number is selected, saving the inspector time by not having to look up or hand-write the information. After the inspections are entered, the database

produces a hard copy of the inspector's proposed inspection trip for approval from his or her supervisor. Following the inspection and/or report issuance, the inspector can input the completion data to generate an update for LTS. At this time, the database cannot automatically update LTS. Any changed information must be manually entered into LTS. With the ability to automatically update LTS, the Division's database would be a more powerful, time-saving tool. The review team believes that the Division's database could be a beneficial tool for the other NRC Regional Offices. The database is also capable of generating the inspection information for the monthly OMI reports.

The review team evaluated the timeliness of issuance of inspection findings to licensees using the inspection casework reviews and the Division's monthly OMI reports. Inspection reports were generally issued to the licensee within 30 days, with the majority of findings being issued at the conclusion of the inspection via NRC Form 591.

During the review period, the Division granted 36 reciprocity permits to candidate licensees based upon the criteria in IMC 1220. The review team determined that the Division exceeded the NRC's goal of inspecting 20 percent of candidate licensees operating under reciprocity in each of the four years covered by the review period.

The review team determined that with respect to Commission Staff Requirements Memorandum (SRM) for COMSECY-05-0028, on Increased Controls, the Division planned for the initial set of inspections of these licensees in accordance with the SRM. The Division's prioritization methodology was consistent with the prioritization methodology provided by NRC Headquarters. The Division has 80 licensees that are implementing the Increased Controls. At the time of the review, the Division had performed 48 Increased Controls inspections, including all 18 inspections that were to be completed in the first year of implementation. Division managers were confident that all Increased Controls inspections would be completed within the Commission's allotted time frame.

Based on the IMPEP evaluation criteria, the review team recommends that Region III's performance with respect to the indicator, Status of Materials Inspection Program, be found satisfactory.

### 3.3 Technical Quality of Inspections

The review team evaluated the inspection reports, enforcement documentation, inspection field notes, and interviewed inspectors for 21 radioactive materials inspections conducted during the review period. The casework reviewed included inspections conducted by 12 of the Division's inspectors and covered inspections of various license types, including: medical broad scope, medical institutions requiring written directives, mobile medical, fixed and portable gauges, industrial radiography, research and development broad scope, irradiator, medical therapy, nuclear pharmacy, manufacturer and distribution broad scope, exempt distribution, special nuclear material, decommissioning, Increased Controls, and reciprocity. Appendix C lists the inspection casework files reviewed, as well as the results of the inspector accompaniments.

The review team found that inspection reports were generally thorough, complete, consistent, and of high quality, with sufficient documentation to ensure that a licensee's performance with respect to health, safety, and security was acceptable. Inspection findings led to appropriate

and prompt regulatory action, when necessary. Based on the review of casework, the review team concluded that routine inspections covered all aspects of the licensees' radiation safety programs commensurate with licensed activities.

The inspection procedures utilized by the Division are generally consistent with the inspection guidance outlined in IMC 2800 and other NRC inspection procedures. The most notable deviation is the Division's broad scope inspection initiative. This initiative increases the communication with several large licensees and provides the Division some flexibility in scheduling and completing inspections of these facilities.

Supervisory accompaniments were generally conducted annually for all inspectors. The Branch Chiefs made a total of 144 accompaniments during the review period. Two inspectors each had one annual accompaniment which was missed; however, both of these inspectors have many years' experience inspecting radioactive materials licensees. Inspectors receive verbal feedback at the time of the accompaniments, and a portion of the inspectors' annual performance appraisals address their inspection skills, as demonstrated during the accompaniments.

The review team observed that the Division maintains an adequate supply of survey instruments to support their inspection program. Appropriate, calibrated survey instrumentation, such as Geiger-Mueller (GM) meters, scintillation detectors, ion chambers, and micro-R meters, was observed to be available. Instruments are calibrated annually through a commercial calibration service. The Division uses a contract laboratory for radioanalysis of samples taken during inspections.

Accompaniments of four Division inspectors were conducted by two IMPEP team members during the weeks of July 30, August 6, and August 20, 2007. The inspectors were accompanied during health and safety inspections of medical institutions and Increased Controls inspections. The accompaniments are identified in Appendix C. During the accompaniments, all of the inspectors demonstrated appropriate inspection techniques, knowledge of the regulations, and conducted performance-based inspections. The inspectors were trained, well-prepared for the inspection, and thorough in their audits of the licensees' radiation safety programs and implementation of the Increased Controls orders. The inspectors conducted interviews with appropriate personnel, observed licensed operations, conducted confirmatory measurements, and utilized good health physics practices. The inspections were adequate to assess radiological health and safety and Increased Controls at the licensed facilities.

Based on the IMPEP evaluation criteria, the review team recommends that Region III's performance with respect to the indicator, Technical Quality of Inspections, be found satisfactory.

### 3.4 Technical Quality of Licensing Actions

The review team examined completed licensing casework and interviewed license reviewers for 22 specific licenses. Licensing actions were reviewed for completeness, consistency, proper radioisotopes and quantities, qualifications of authorized users, adequate facilities and equipment, adherence to good health physics practices, financial assurance, operating and emergency procedures, appropriateness of the license conditions, Increased Controls, and



overall technical quality. The casework was also reviewed for timeliness, use of appropriate deficiency letters and cover letters, reference to appropriate regulations, product certifications, supporting documentation, consideration of enforcement history, pre-licensing visits, supervisory review as indicated, and proper signatures. The casework was checked for retention of necessary documents and supporting data.

The licensing casework was selected to provide a representative sample of licensing actions completed during the review period. The review team evaluated 30 licensing actions, covering the work of 11 license reviewers. Licensing actions selected for evaluation included 6 new licenses, 2 renewals, 19 amendments, 2 terminations, and 1 reciprocity request. The sampling included the following license types: research and development broad (master material license), research and development, medical (broad, private practice - no written directive, gamma knife, and high dose-rate remote afterloader), industrial radiography, portable gauge, fixed gauge, panoramic irradiator, decommissioning, manufacturing and distribution, and nuclear pharmacy. A listing of the licensing casework evaluated may be found in Appendix D.

The review team found that the licensing actions were thorough, complete, consistent, and of high quality, with health, safety, and security issues properly addressed. License tie-down conditions were stated clearly, backed by information contained in the file, and auditable. Licenses and correspondence are generated using standardized conditions and formats. Licensing staff appropriately used licensing guides, policies, and standard license conditions. Licensees' compliance histories were taken into account when reviewing all renewal applications and major amendments. At the time of the review, the Division had no licensing actions pending beyond the established acceptable turnaround times. Licenses are issued for a 10-year period.

Each licensing action is given a technical review by a license reviewer. All license reviewers have signature authority. The Licensing Branch Chief performs a technical and supervisory review on files in accordance with established policy. Regular meetings of licensing staff allow opportunity for managers to introduce, implement, and provide and gather feedback on new or ongoing initiatives. Licensing actions selected by the Licensing Branch Chief are peer reviewed as part of quarterly meetings to augment the Division's other quality assurance and quality control measures.

The review team evaluated the Division's reciprocity licensing activities. Requests for reciprocity from Agreement State licensees and other NRC Regions are processed promptly. Expiration dates on Agreement State licenses are verified. For Agreement State licenses expiring within the current calendar year, authorization for reciprocal work in Region III terminates on the date of expiration unless the licensee can provide an updated license, which would extend their reciprocal recognition through the end of the calendar year.

The review team evaluated the Division's financial assurance and decommissioning activities. Ongoing financial assurance reviews are tracked through LTS, including milestones. Review of the files and milestones reported for open files revealed applicant/licensee turnaround times to be the source of delays in issuance. The review team found that terminations and amendments to remove or release locations for either controlled or uncontrolled use were well-documented, showing appropriate material transfer and survey records. The review team identified no performance issues with the Division's financial assurance and decommissioning activities.

The Division developed a decommissioning guidance website through Region III's internal website. The decommissioning guidance website contains links to pertinent information and guidance documents for decommissioning, such as NUREGs, and also includes a number of out-of-print and hard-to-find documents. Maintenance of the website is performed in-house by the Division, and as additional useful documents are identified or suggested, the webmaster adds them to the website. The review team recommends that the Division's decommissioning guidance website be identified as a good practice.

The review team examined the list of licensees that were determined to meet the criteria for the Increased Controls, per COMSECY-05-0028. The review team determined that the appropriate licensees were issued Orders that required implementation of the Increased Controls. While no new licenses requiring the Increased Controls have been issued since May 2006, the Division has a process in place for evaluating new license applications' subjectivity to the Increased Controls. During the amendment process, the Division reviews requested authorization limits and works with the licensees to either impose the Increased Controls via license condition or to cap authorization limits to eliminate the need for the Increased Controls.

Based on the IMPEP evaluation criteria, the review team recommends that Region III's performance with respect to the indicator, Technical Quality of Licensing Actions, be found satisfactory.

### 3.5 Technical Quality of Incident and Allegation Activities

In evaluating the effectiveness of the Division's actions in responding to incidents and allegations, the review team examined the Division's response to the questionnaire relative to this indicator, evaluated selected incidents reported for Region III in the Nuclear Material Events Database (NMED) against those contained in the Division's files, and evaluated the casework for 20 radioactive materials incidents. A listing of the incident casework examined may be found in Appendix E. The review team also evaluated the Division's response to 13 allegations involving radioactive materials.

The review team identified 202 radioactive materials incidents in NMED for Region III during the review period, of which 166 were reportable under NRC criteria. The incidents selected for review included the following categories: medical, lost/stolen material, exposure to embryo/fetus, and equipment failure. The review team discussed incident and allegation procedures, file documentation, NMED, and the role of the NRC Headquarters Operations Center with Division staff and managers. The Division is responsible for initial response and followup actions to radioactive materials incidents. The review team determined that the Division's response to incidents was complete and comprehensive. Initial responses were prompt and well-coordinated, and the level of effort was commensurate with the health and safety significance. The Division dispatched inspectors for on-site investigations in a majority of the cases reviewed and took suitable enforcement and followup actions.

The Division has created a picture gallery of radioactive material-related photographs. The gallery, which is organized by types of use and modality, contains photographs and schematic diagrams of devices, sources, and facilities. The gallery provides the Division with the ability to include pictures and diagrams in incident briefings to enhance the effectiveness of the briefings to individuals that may not be knowledgeable of such sources, devices, or facilities. The gallery

also provides the Division with an excellent source of visual aids for inclusion in non-incident-related discussions and presentations, such as in-house training courses or topical seminars. The gallery can also be used to educate new staff members on the appearance and use of such devices, sources, and facilities. The review team recommends that the Division's picture gallery be identified as a good practice.

In evaluating the effectiveness of the Division's actions in response to allegations, the review team evaluated the casework for 13 allegations. The review team held interviews with the Regional Allegations Coordinators, Division managers, and Division technical staff regarding the handling of allegations, as well as reviewed the Division's response to the questionnaire relative to this indicator. The Division adheres to NRC Management Directive 8.8 in the handling of allegations. The review team's evaluation of casework, associated documentation, and interviews with staff and managers revealed that the Division has an effective and efficient program for managing radioactive materials allegations. The casework review indicated that the Division took prompt and appropriate action in response to all concerns raised. All of the allegations reviewed were appropriately closed, and appropriate parties were notified of the actions taken.

Based on the IMPEP evaluation criteria, the review team recommends that Region III's performance with respect to the indicator, Technical Quality of Incident and Allegation Activities, be found satisfactory.

#### 4.0 SUMMARY

As noted in Section 3.0, the review team found Region III's performance to be satisfactory for all performance indicators reviewed. The review team made no recommendations regarding program performance and identified two potential good practices. Accordingly, the review team recommends that the NRC Region III radioactive materials program be found adequate to protect public health and safety. Based on the results of the current IMPEP review, the review team recommends that the next full IMPEP review of the NRC Region III radioactive materials program take place in approximately 4 years.

## LIST OF APPENDIXES

Appendix A	IMPEP Review Team Members
Appendix B	Region III Organization Charts
Appendix C	Inspection Casework Reviews
Appendix D	License Casework Reviews
Appendix E	Incident Casework Reviews

## APPENDIX A

### IMPEP REVIEW TEAM MEMBERS

<b>Name</b>	<b>Area of Responsibility</b>
Aaron McCraw, FSME	Team Leader Technical Staffing and Training Status of Materials Inspection Program
Stephen Hammann, Region I	Technical Quality of Inspections Inspector Accompaniments
Robin Rademacher, NC	Technical Quality of Licensing Actions
Richard Leonardi, Region IV	Technical Quality of Incident and Allegation Activities Inspector Accompaniments

APPENDIX B

REGION III ORGANIZATION CHARTS

ADAMS ACCESSION NO.: ML072680567

## APPENDIX C

### INSPECTION CASEWORK REVIEWS

NOTE: CASEWORK LISTED WITHOUT COMMENT IS INCLUDED FOR COMPLETENESS ONLY.

File No.: 1

Licensee: Mallinckrodt, Inc.

Inspection Type: Routine, Unannounced

Inspection Dates: 9/18-22/06

License No.: 24-04206-01

Priority: 2

Inspectors: DW, BH

File No.: 2

Licensee: Hayes Testing Laboratory

Inspection Type: Reciprocity

Inspection Date: 7/27/07

License No.: KY-201-168-05

Priority: N/A

Inspector: GP

File No.: 3

Licensee: Holland Community Hospital

Inspection Type: Routine, Unannounced

Inspection Date: 3/21/05

License No.: 21-18502-01

Priority: 3

Inspectors: SM, EK

File No.: 4

Licensee: Capital Pharmacy

Inspection Type: Routine, Unannounced

Inspection Date: 1/19/06

License No.: 1319-3

Priority: 2

Inspector: GP

File No.: 5

Licensee: Mathy Construction Company

Inspection Type: Routine, Unannounced

Inspection Date: 4/16/07

License No.: 48-18722-01

Priority: 5

Inspector: EK

File No.: 6

Licensee: Lone Star Industries, Inc.

Inspection Type: Routine, Unannounced

Inspection Date: 11/30/05

License No.: 13-12374-01

Priority: 5

Inspector: TG

File No.: 7

Licensee: Centocor Biologics, LLC

Inspection Type: Routine, Unannounced

Inspection Date: 3/28/06

License No.: 24-32396-01

Priority: 5

Inspector: ML

File No.: 8

Licensee: University of Minnesota

Inspection Type: Special

Inspection Dates: 1/31-2/23/05

License No.: 22-00187-46

Priority: N/A

Inspectors: ML, SB

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Inspection Casework Reviews

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File No.: 9

Licensee: MTI Industries, Inc.

Inspection Type: Initial, Announced

Inspection Date: 5/25/05

License No.: 12-23905-01E

Priority: 5

Inspector: SM

File No.: 10

Licensee: Jackson Community College

Inspection Type: Special, Announced

Inspection Date: 7/13/05

License No.: SNM-1171

Priority: N/A

Inspector: GW

File No.: 11

Licensee: Mid-Michigan Diagnostic

Inspection Type: Initial, Announced

Inspection Date: 5/11/06

License No.: 21-32601-01

Priority: 3

Inspector: KL

File No.: 12

Licensee: Indiana University School of Medicine

Inspection Type: Special, Unannounced

Inspection Dates: 8/22/06, 10/25/06

License No.: 13-18384-01

Priority: 5

Inspector: JM

File No.: 13

Licensee: JANX Integrity Group

Inspection Type: Special, Announced

Inspection Dates: 1/17-19/07

License No.: 21-16560-01

Priority: 2

Inspector: BH

File No.: 14

Licensee: Michigan State University

Inspection Type: Special, Announced

Inspection Dates: 2/26-28/07

License No.: 21-00021-30

Priority: 2

Inspector: DW

File No.: 15

Licensee: Bronson Methodist Hospital

Inspection Type: Special, Announced

Inspection Dates: 8/23-24/07

License No.: 21-13125-01

Priority: 2

Inspector: DP

File No.: 16

Licensee: DBI, Inc.

Inspection Type: Reciprocity

Inspection Date: 2/15/07

License No.: NE-02-46-01

Priority: N/A

Inspector: GW



File No.: 17

Licensee: Hennepin County Medical Center  
Inspection Type: Routine, Unannounced  
Inspection Date: 3/11/05

License No.: 22-11070-01  
Priority: 2  
Inspector: DP

File No.: 18

Licensee: U.S. Steel Corporation  
Inspection Type: Routine, Unannounced  
Inspection Date: 2/12/07

License No.: 21-10459-01  
Priority: 5  
Inspector: SB

File No.: 19

Licensee: Sigma-Aldrich Company  
Inspection Type: Routine, Unannounced  
Inspection Dates: 9/29-30/05

License No.: 24-16273-01  
Priority: 3  
Inspector: DP

File No.: 20

Licensee: University of Michigan  
Inspection Type: Routine, Announced  
Inspection Dates: 8/29-9/2/05

License No.: 21-00215-04  
Priority: 2  
Inspectors: DW, SB

File No.: 21

Licensee: University of Michigan  
Inspection Type: Routine, Announced  
Inspection Dates: 1/22-25/07

License No.: 21-00215-04  
Priority: 2  
Inspector: DW

### INSPECTOR ACCOMPANIMENTS

The following inspector accompaniments were performed prior to the on-site IMPEP review:

Accompaniment No.: 1

Licensee: Bloomington Hospital  
Inspection Type: Routine, Unannounced  
Inspection Date: 8/9/07

License No.: 13-10408-02  
Priority: 3  
Inspector: GW

Accompaniment No.: 2

Licensee: Henry Ford Hospital  
Inspection Type: Special, Announced  
Inspection Dates: 8/23-24/07

License No.: 21-04109-16  
Priority: 1  
Inspector: ML

Accompaniment No.: 3

Licensee: Heart Care Group, The  
Inspection Type: Initial, Announced  
Inspection Date: 7/23/07

License No.: 24-32625-01  
Priority: 5  
Inspector: DP

Accompaniment No.: 4  
Licensee: SSM Depaul Health Center  
Inspection Type: Routine, Unannounced  
Inspection Date: 7/23/07

License No.: 24-02490-03  
Priority: 2  
Inspector: DP

Accompaniment No.: 5  
Licensee: Army, Department of The Radiological Laboratories  
Inspection Type: Special, Announced  
Inspection Dates: 7/24-25/07

License No.: 24-32221-01  
Priority: 3  
Inspector: DP

Accompaniment No.: 6  
Licensee: Army, Department of  
Inspection Type: Routine, Announced  
Inspection Date: 7/24/07

License No.: 24-15095-01  
Priority: 3  
Inspector: DP

Accompaniment No.: 7  
Licensee: St. Luke's Hospital  
Inspection Type: Routine, Unannounced  
Inspection Date: 7/26/07

License No.: 24-01570-03  
Priority: 2  
Inspector: DP

Accompaniment No.: 8  
Licensee: Community Memorial Hospital  
Inspection Type: Routine, Unannounced  
Inspection Date: 8/8/07

License No.: 21-20250-01  
Priority: 3  
Inspector: KL

Accompaniment No.: 9  
Licensee: Schoolcraft Memorial Hospital  
Inspection Type: Routine, Unannounced  
Inspection Date: 8/8/07

License No.: 21-16542-03  
Priority: 5  
Inspector: KL

Accompaniment No.: 10  
Licensee: Dickinson County Memorial  
Inspection Type: Routine, Unannounced  
Inspection Date: 8/9/07

License No.: 21-18889-01  
Priority: 3  
Inspector: KL

## APPENDIX D

### LICENSE CASEWORK REVIEWS

NOTE: CASEWORK LISTED WITHOUT COMMENT IS INCLUDED FOR COMPLETENESS ONLY.

File No.: 1

Licensee: Saint Joseph's Hospital

Type of Action: Termination

Date Issued: 5/7/07

License No.: 13-32277-01

Amendment No.: 11

License Reviewer: WR

File No.: 2

Licensee: Heart & Wellness Institute, PC

Type of Action: New

Date Issued: 6/22/07

License No.: 21-32654-01

Amendment No.: N/A

License Reviewer: JM

File No.: 3

Licensee: William Beaumont Hospital

Types of Action: New, Amendments

Dates Issued: 12/13/06, 4/4/07, 7/30/07

License No.: 21-01333-02

Amendment Nos.: 0-2

License Reviewer: TS

File No.: 4

Licensee: William Beaumont Hospital

Type of Action: Amendments

Dates Issued: 10/10/06, 12/13/06

License No.: 21-01333-01

Amendment Nos.: 81, 82

License Reviewer: TS

File No.: 5

Licensee: Gateway Constructors

Type of Action: New

Date Issued: 6/27/07

License No.: 24-32656-01

Amendment No.: N/A

License Reviewers: KN, JM

File No.: 6

Licensee: St. Mary's University of Minnesota

Type of Action: Termination

Date Issued: 10/13/05

License No.: 22-00027-06

Amendment No.: 21

License Reviewer: KN

File No.: 7

Licensee: Goshen General Hospital

Type of Action: Amendment

Date Issued: 6/27/07

License No.: 13-18845-01

Amendment No.: 35

License Reviewer: TS

File No.: 8

Licensee: Warner-Lambert, LLC

Type of Action: Amendment

Date Issued: 12/19/06

License No.: 21-01443-06

Amendment No.: 60

License Reviewer: WS

File No.: 9

Licensee: American Radiolabeled Chemicals

Type of Action: Amendment

Date Issued: 7/28/06

License No.: 24-21362-01

Amendment No.: 37

License Reviewers: KN, PL

File No.: 10

Licensee: Warner-Lambert, LLC

Type of Action: Amendment

Date Issued: Pending

License No.: 21-01443-06

Amendment No.: N/A

License Reviewer: WS

File No.: 11

Licensee: Missouri Baptist Medical Center

Type of Action: Amendment

Date Issued: 1/26/07

License No.: 24-11128-02

Amendment No.: 64

License Reviewer: JM

File No.: 12

Licensee: Battelle Memorial Institute

Type of Action: Renewal

Date Issued: 6/7/07

License No.: SNM-7

Amendment No.: 33

License Reviewer: MM

File No.: 13

Licensee: Michigan Cardiology, P.C.

Types of Action: New, Amendments

Dates Issued: 8/25/03, 10/9/03, 6/30/05, 3/7/06

License No.: 21-32468-01

Amendment Nos.: 0-3

License Reviewers: CC, JM

File No.: 14

Licensee: Kraft Foods, Inc.

Types of Action: New, Amendment

Dates Issued: 5/17/04, 2/8/06

License No.: 12-32496-01

Amendment Nos.: 0, 1

License Reviewers: LH, WR

File No.: 15

Licensee: Radiopharmacy of Indianapolis

Type of Action: New

Date Issued: 4/3/07

License No.: 13-32637-01

Amendment No.: N/A

License Reviewer: TS

File No.: 16

Licensee: Testing Engineers & Consultants, Inc.

Type of Action: Renewal

Date Issued: 1/17/07

License No.: 21-18668-01

Amendment No.: 17

License Reviewer: LH

File No.: 17

Licensee: Midwest Research Institute

Type of Action: Amendment

Date Issued: 6/12/07

License No.: 24-02564-02

Amendment No.: 59

License Reviewer: KN

File No.: 18

Licensee: Whitney & Associates, Inc.

Type of Action: Reciprocity

Date Issued: 8/29/07

License No.: IL-01683-01

Amendment No.: N/A

License Reviewer: GP

File No.: 19

Licensee: Department of Veteran Affairs

Type of Action: Amendments

Dates Issued: 6/8/07, 8/28/07

License No.: 03-23853-01VA

Amendment Nos.: 5, 6

License Reviewer: CF

File No.: 20

Licensee: SSM DePaul Health Center

Type of Action: Amendment

Date Issued: 3/2/07

License No.: 24-02490-03

Amendment No.: 51

License Reviewer: CC

File No.: 21

Licensee: 3M Company

Type of Action: Amendment

Date Issued: 5/14/07

License No.: 22-00057-61

Amendment No.: 38

License Reviewer: CC

File No.: 22

Licensee: Elite Inspection Service Co., Inc.

Type of Action: Amendment

Date Issued: 5/2/07

License No.: 13-26712-01

Amendment No.: 10

License Reviewer: KN

## APPENDIX E

### INCIDENT CASEWORK REVIEWS

NOTE: CASEWORK LISTED WITHOUT COMMENT IS INCLUDED FOR COMPLETENESS ONLY.

File No.: 1

Licensee: University of Michigan

Date of Incident: 4/1/03

Investigation Date: 4/9/03

License No.: 21-00215-04

Incident Log No.: NMED 030267

Type of Incident: Medical

Type of Investigation: Site

File No.: 2

Licensee: Washington University/Medical Center

Date of Incident: 7/9/03

Investigation Date: 7/22/03

License No.: 24-00167-11

Incident Log No.: NMED 030564

Type of Incident: Medical

Type of Investigation: Site

File No.: 3

Licensee: Lakeland Medical Center

Date of Incident: 11/11/03

Investigation Date: 11/19/03

License No.: 21-04177-01

Incident Log No.: NMED 030921

Type of Incident: Medical

Type of Investigation: Site

File No.: 4

Licensee: Indiana University Medical Center

Date of Incident: 9/15/04

Investigation Date: 11/3/04

License No.: 13-02752-03

Incident Log No.: NMED 040819

Type of Incident: Lost/Stolen RAM

Type of Investigation: Licensee Report

File No.: 5

Licensee: Imaging Subsurface, Inc.

Date of Incident: 11/2/04

Investigation Date: 11/4/04

License No.: 21-32050-01

Incident Log No.: NMED 040798

Type of Incident: Unsecured RAM

Type of Investigation: Site

File No.: 6

Licensee: William Beaumont Hospital

Date of Incident: 6/8/04

Investigation Date: 6/10/04

License No.: 21-01333-01

Incident Log No.: NMED 040415

Type of Incident: Medical

Type of Investigation: Site

File No.: 7

Licensee: University of Minnesota

Date of Incident: 1/25/05

Investigation Date: 1/31/05

License No.: 22-00187-46

Incident Log No.: NMED 050065

Type of Incident: Medical

Type of Investigation: Site

File No.: 8

Licensee: St. John's Mercy Medical Center

Date of Incident: 3/9/05

Investigation Dates: 3/15-16/05

License No.: 24-00794-03

Incident Log No.: NMED 050143

Type of Incident: Medical

Type of Investigation: Site

File No.: 9

Licensee: Porter Valparaiso Hospital Campus

Date of Incident: 2/16/05

Investigation Date: 2/23/05

License No.: 13-17073-01

Incident Log No.: NMED 050098

Type of Incident: Medical

Type of Investigation: Site

File No.: 10

Licensee: Saint Mary's Health Care

Date of Incident: 2/16/06

Investigation Date: 2/28/06

License No.: 21-01078-01

Incident Log No.: NMED 060123

Type of Incident: Contamination

Type of Investigation: Licensee Report

File No.: 11

Licensee: Southeast Missouri State University

Date of Incident: 2/17/06

Investigation Date: 2/21/06

License No.: 24-09296-02

Incident Log No.: NMED 060124

Type of Incident: Contamination

Type of Investigation: Site

File No.: 12

Licensee: Indiana University Medical Center

Date of Incident: 3/29/06

Investigation Dates: 4/3-4/06

License No.: 13-02752-03

Incident Log No.: NMED 060216

Type of Incident: Medical

Type of Investigation: Site

File No.: 13

Licensee: Indiana University Medical Center

Date of Incident: 3/29/06

Investigation Dates: 4/3-4/06

License No.: 13-02752-03

Incident Log No.: NMED 060219

Type of Incident: Medical

Type of Investigation: Site

File No.: 14

Licensee: Saint Joseph Health Center

Date of Incident: 6/28/06

Investigation Dates: 7/10-11/06

License No.: 24-15159-01

Incident Log No.: NMED 060430

Type of Incident: Medical

Type of Investigation: Site

File No.: 15

Licensee: University of Missouri

Date of Incident: 10/3/06

Investigation Date: 10/4/06

License No.: 24-09296-02

Incident Log No.: NMED 060124

Type of Incident: Lost/Stolen RAM

Type of Investigation: Licensee Report

File No.: 16  
Licensee: Hackley Hospital  
Date of Incident: 1/8/07  
Investigation Dates: 1/11-12/07

License No.: 21-04125-01  
Incident Log No.: NMED 070024  
Type of Incident: Medical  
Type of Investigation: Site

File No.: 17  
Licensee: Community Hospitals of Indiana, Inc.  
Date of Incident: 4/18/07  
Investigation Date: 4/25/07

License No.: 13-06009-01  
Incident Log No.: NMED 070235  
Type of Incident: Medical  
Type of Investigation: Site

File No.: 18  
Licensee: Washington University in St. Louis  
Date of Incident: 5/29/07  
Investigation Date: 6/5/07

License No.: 24-00167-11  
Incident Log No.: NMED 070339  
Type of Incident: Overexposure  
Type of Investigation: Site

File No.: 19  
Licensee: Lester E. Cox Medical Center  
Dates of Incidents: 7/10,17,24/07  
Investigation Date: 8/2/07

License No.: 24-01143-06  
Incident Log No.: NMED 070471  
Type of Incidents: Medical  
Type of Investigation: Site

File No.: 20  
Licensee: Soil & Materials Engineers, Inc.  
Date of Incident: 6/25/07  
Investigation Date: 6/26-27/07

License No.: 21-17158-02  
Incident Log No.: NMED 070387  
Type of Incident: Equipment Failure  
Type of Investigation: Site