IMAGING & SENSING TECHNOLOGY

300 Westinghouse Circle
Horseheads, NY 14845
(607) 796-4400
FAX (607) 796-4579

January 26, 1998

United States Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

re: Reply to a Notice of Violation
Docket No. 070-03061
Inspection No. 070-03061/97-001
License No. SNM-1982

Dear sirs:

In reply to the referenced Notice of Violation:

A. Enclosed is the response to the Confirmatory Action Letter, CAL No.1-97-025 showing the dose calculations as required for the bioassay results and air emission tests. These calculations were not previously done due to the bioassays being close to detectable limits and the air emissions were within levels per 10CFR20, Appendix B (effluent concentrations). However, these dose calculations will be performed for all future tests.

B. A review of the Radiation Safety Program was performed for 1997(copy enclosed) and submitted in response to the Confirmatory Action Letter. This had been scheduled prior to the NRC inspection but postponed due to a conflict with an inspection by the NYSDOL Radiation Bureau. The 1996 review had been partially completed but not formally reported.

This annual audit of the Radiation Safety Program will now be established as a part of the IST Quality Assurance Program and placed on their schedule of annual audits. The Radiation Safety Committee will also be responsible to confirm the audit is performed.

Very truly yours,

Lou Binetti
Executive Vice President

IE07

cc: John D. Kinneman, NRC Region 1
Thomas M. Mike, Radiation Safety Officer

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

January 6, 1998

Docket No. 070-03061 License No. SNM-1982

Lou Binetti, Executive Vice President
Imaging and Sensing Technology Corporation
Westinghouse Circle
Horseheads, NY 14845-2299

SUBJECT: INSPECTION NO. 070-03061/97-001

Dear Mr. Binetti:

On September 17-18, 1997, Keith Brown of this office conducted a safety inspection at the above address of activities authorized by the above listed NRC license. The inspection was an examination of your licensed activities as they relate to radiation safety and to compliance with the Commission's regulations and the license conditions. The inspection consisted of observations by the inspector, interviews with personnel, and a selective examination of representative records. The findings of the inspection were discussed with you during a telephone conversation on September 25, 1997 at the conclusion of the inspection.

Based on the results of this inspection, it appears that your activities were not conducted in full compliance with NRC requirements. A Notice of Violation is enclosed and categorizes each violation by severity level in accordance with "General Statement of Policy and Procedure for NRC Enforcement Actions," (Enforcement Policy), NUREG 1600. You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. In your response, you should document the specific actions taken and any additional actions you plan to prevent recurrence. Your response may reference or include previous docketed correspondence, including your response to CAL No. 1-97-025, if the correspondence adequately addresses the required response. After reviewing your response to this Notice, including your proposed corrective actions and the results of future inspections, the NRC will determine whether further NRC enforcement action is necessary to ensure compliance with NRC regulatory requirements.

In accordance with Section 2.790 of NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and your reply will be placed in the Public Document Room (PDR). To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be placed in the PDR without redaction. However, if you find it necessary to include such information, you should clearly indicate the specific information that you desire not to be placed in the PDR, and provide the legal basis to support your request for withholding the information from the public. The responses directed by this letter and the accompanying Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Your cooperation with us is appreciated.

Sincerely,

/s/ Pamela J. Henderson

John D. Kinneman, Chief
Nuclear Materials Safety Branch 2
Division of Nuclear Materials Safety

Docket No. 070-03061
License No. SNM-1982

Enclosure:
1. Notice of Violation
2. Inspection Report 070-03061/97-001

cc w/enclosure:
Thomas M. Mike, Radiation Safety Officer
State of New York

NOTICE OF VIOLATION

Imaging and Sensing Technology Corporation
Horseheads, New York

Docket No. 070-03061
License No. SNM-1982

During an NRC inspection conducted on September 17-18, 1997 a violation(s) of NRC requirements was (were) identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," the violation(s) is (are) listed below:

A. 10 CFR 20.1501 requires that each licensee make or cause to be made surveys that may be necessary for the licensee to comply with the regulations in Part 20 and that are reasonable under the circumstances to evaluate the extent of radiation levels, concentrations or quantities of radioactive materials, and the potential radiological hazards that could be present.

Pursuant to 10 CFR 20.1003, *survey* means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation.

Contrary to the above, as of September 18, 1997, the licensee did not make surveys to assure compliance with 10 CFR 20.1201, which limits radiation exposure to occupational workers, and 10 CFR 20.1101(d), which limits radiation exposure to individual members of the public. Specifically, the licensee did not evaluate the results of urinalysis to determine the dose to the worker, and did not perform an evaluation of the dose received by the individual likely to receive the highest dose from air emissions from licensed operations.

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

B. 10 CFR 20.1101(c) requires that the licensee shall review the radiation protection program content and implementation at least annually.

Contrary to the above, between June 29, 1995 and September 17, 1997, the licensee did not review the radiation protection program content and implementation.

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

Pursuant to the provisions of 10 CFR 2.201, Imaging and Sensing Technology Corporation is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555, with a copy to the Regional Administrator, Region I, 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, (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.

Because your response will be placed in the NRC Public Document Room (PDR), to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be placed in the PDR without redaction. However, if you find it necessary to include such information, you should clearly indicate the specific information that you desire not to be placed in the PDR, and provide the legal basis to support your request for withholding the information from the public. If safeguards information is necessary to provide an acceptable response, please provide the level of protection described in 10 CFR 73.21.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

JAN 20 1998

CAL No. 1-97-025

Lou Binetti, Executive Vice President
Imaging and Sensing Technology Corporation
Westinghouse Circle
Horseheads, NY 14845

SUBJECT: CLOSURE OF CONFIRMATORY ACTION LETTER 1-97-025

Dear Mr. Binetti:

This refers to your letters dated November 20, 1997, December 16, 1997 and December 22, 1997, in response to our Confirmatory Action Letter (CAL) 1-97-025, dated September 26, 1997. Based on your response letters, the NRC has found that no further response is required regarding the CAL. We will review the revised Radiation Safety Manual and Special Nuclear Material Inventory Procedure, included with the letter, as part of the amendment requested in your letter of December 16,1997. You will receive a separate letter requesting any additional information necessary to complete that amendment. Your annual audit for calendar year 1998 will be reviewed as part of a future inspection of your licensed activities.

Thank you for informing us of the actions documented in your letter. Based on the documents submitted, it appears these actions have been effective in bringing your program into compliance with our regulations. These actions will be examined in more detail during a future inspection of your licensed program to ensure that they are effective in correcting the violations identified in recent inspections. Your cooperation with us is appreciated.

In accordance with 10 CFR 2.790, a copy of this letter will be placed in the NRC Public Document Room.

Sincerely,

A. Randolph Blough, Director
Division of Nuclear Materials Safety

Docket No. 070-03061
License No. SNM-1982

cc:
Thomas M. Mike, Radiation Safety Officer
State of New York

9801260307 1p

IMAGING & SENSING TECHNOLOGY

300 Westinghouse Circle
Horseheads, NY 14845
(607) 796-4400
FAX (607) 796-4576

December 22, 1997

Keith D. Brown
U.S. Nuclear Regulatory Commission
Region 1
475 Allendale Road
King of Prussia, PA 19406-1415

re: Imaging and Sensing Technology Corporation (IST)
Confirmatory Action Letter
CAL No. 1-97-025

Dear Mr. Brown:

As required by the Confirmatory Action Letter dated September 26, 1997, enclosed are the evaluations of air emissions, showing compliance with 10CFR20.1101(d) and bioassays, showing dose to each worker, to satisfy Items 2 & 3 of the action letter. The evaluations were performed by Thomas McGiff, a Certified Health Physicist, whom IST retains as a consultant.

This submission completes all actions required by the referenced Confirmatory Action Letter.

Please advise if you require anything further at this time.

Very truly yours,

Thomas M. Mike
Radiation Safety Officer

cc: L. Binetti, Executive Vice President, IST
bcc: C. Negri
K. DeWalt
C. Amrine
T. Hughes
J. Lynch

9801280317 4pp.

3069 North Triphammer Road
Lansing, NY 14882
(607) 533-7064

December 20, 1997

Imaging and Sensing Technology
300 Westinghouse Circle
Horseheads, NY 14845
Attn: Thomas M. Mike

Dear Mr. Mike:

Per your request, I determined dose estimates for the bioassay results that you provided to me. The results are listed on the attached calculation summary. Individuals are identified by their initials. The intake of each radionuclide was calculated from the bioassay results, the time lapse between exposure and urine collection and the intake retention function for the radionuclide according to "Interpretation of Bioassay Measurements, NUREG/CR-4884. Doses were calculated as the ratio of the calculated intake of the nuclide to the ALI of the nuclide times 5,000 mrem. Additional assumptions used in the calculations are listed as notes to the calculation summary.

All estimated doses were considerably less than one mrem. All urine analysis results were less than or seemed close to the detection limit of the analysis procedure. This may be the reason that the reported ratios of U234, U235 and U238 are not the same ratios expected from the composition of the uranium metal. The results confirm no significant intake occurred.

To assist you in performing a quick assessment of future bioassay results, I suggest comparing them to the activity that will result in a dose of approximately 100 mrem. The relationship between activity in the urine and dose changes dramatically as the time between the day of exposure and the day of urine collection changes. If the time difference is either 1 or 4 days, the following reference values can be used.

1 day - 5,700 pCi total activity of U234, U235 and U238 in the entire urine sample
4 days - 490 pCi total activity of U234, U235 and U238 in the entire urine sample

You also requested a dose assessment for an air sample that found an activity concentration of 1.6E-12 uCi/ml during a 5 hour sampling period. The simplest assessment approach is to compare this to the Derived Air Concentration or DAC listed in ICRP 30. An exposure to a concentration of airborne radioactive material equal to one DAC for 2000 hours will result in a committed effective dose equivalent equal to 5,000 mrem.

The measured concentration of 1.6 E-12 uCi/ml is equal to 5.9E-02 Bq/m3. The DAC for uranium as a class D aerosol is 2.0E+01 Bq/m3. The air concentration reported is 3.0E-03 DAC. If an individual were exposed to this concentration for 5 hours, the resulting dose would be 0.04 mrem.

If you have any additional questions, let me know and I'll be happy to try to answer them. Thank you,

Sincerely,

Thomas McGiff

mi971220.ltr

Conversion of Urine Bioassay Results to Committed Effective Dose Equivalent

worker	dates of exposure	date of sample	Delta T (days)	urine volume (l)	Nuclide	(pCi / l)	(pCi)	IRF for 24h urine	intake estimate (pCi)	intake estimate (Bq)	Inhalation ALI Class D U238 (Bq)	Dose (mrem)
ca	3.6E+04	3/13/97	1	0.962								
					U234	0.11	0.106	1.87E-01	5.66E-01	2.09E-02	5.00E+04	2.E-03
					U235	0.03	0.029	1.87E-01	1.54E-01	5.71E-03	5.00E+04	6.E-04
					U238	0.04	0.038	1.87E-01	2.06E-01	7.61E-03	5.00E+04	8.E-04
					total		0.173					3.E-03
sd	3.5E+04	2/2/96	4	1.034								
	3.5E+04				U234	0.1	0.103	1.82E-02	5.68E+00	2.10E-01	5.00E+04	2.E-02
	3.5E+04				U235	0.1	0.103	1.82E-02	5.68E+00	2.10E-01	5.00E+04	2.E-02
					U238	0.1	0.103	1.82E-02	5.68E+00	2.10E-01	5.00E+04	2.E-02
					total		0.310					6.E-02
sd	3.5E+04	3/8/97	4	0.895								
	3.5E+04				U234	0.14	0.125	1.82E-02	6.88E+00	2.55E-01	5.00E+04	3.E-02
	3.5E+04				U235	0.06	0.054	1.82E-02	2.95E+00	1.09E-01	5.00E+04	1.E-02
					U238	0.1	0.090	1.82E-02	4.92E+00	1.82E-01	5.00E+04	2.E-02
					total		0.269					5.E-02

Notes:
When exposure takes place over several days, dose is calculated as if all exposure takes place on the first day.
Intakes of radioactive material calculated according to "Interpretation of Bioassay Measurements, NUREG/CR-4884.
Doses were calculated as the ratio of the calculated intake of the nuclide to the ALI of the nuclide times 5,000 mrem.
ALI amounts taken from "Annals of the ICRP, ICRP Publication 30, Part 1, Limits for Intakes of Radionuclides by Workers".
Exposure was assumed to be inhalation of uranium as a class D aerosol of 1 micrometer AMAD.
When analysis results are given as "less than" values, dose is calculated on the value given.

Worker:
CA Charles Amrine
SD Shirley Daugherty

IMAGING & SENSING TECHNOLOGY

300 Westinghouse Circle
Horseheads, NY 14845
(607) 796-4400
FAX (607) 796-4579

November 20, 1997

Keith D. Brown
U.S. Nuclear Regulatory Commission
Region 1
475 Allendale Road
King of Prussia, PA 19406-1415

re: Imaging and Sensing Technology Corporation (IST)
Confirmatory Action Letter
CAL No. 1-97-025

Dear Mr. Brown:

As required by the Confirmatory Action Letter dated September 26, 1997, enclosed is the annual audit for 1997. This audit was performed by our consultant, Thomas McGiff, CHP.

IST will proceed to implement, through the Radiation Safety Committee, those suggestions that we feel are necessary to improve the Radiation Protection Program.

The remaining issues of the Confirmatory Action Letter are essentially completed and will be submitted to you shortly.

Very truly yours,

Thomas M. Mike
Radiation Safety Officer

cc: L. Binetti, Executive Vice President, IST
bcc: C. Negri
K. DeWalt
C. Amrine
T. Hughes
J. Lynch

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IE81SA

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Radiation Safety Program Audit

for

Imaging and Sensing Technology Corporation

Submitted by:

Thomas McGiff

November 20, 1997

Introduction

This report is a summary of the discussions that took place during an audit of Imaging and Sensing Technology Corporation's radioactive materials safety program. The goal of the audit was to review the policies, procedures, records facilities associated with the program and provide feedback on the degree to which the program is achieving protection for workers and the environment and to offer suggestions for program enhancements.

The audit was not a comprehensive review of the program's compliance with regulatory requirements. Rather, is was a peer review process whereby the policies and methods of the program were compared to those familiar to the author. It is up to the Radiation Safety Officer and the Radiation Safety Committee to determine if the opinions and suggestions contained in this report should be adopted.

1. Program Administration

1.1 Safety Committee has written charter.

Yes.
See section I-2.0 of RSM.

1.2 Committee charter is adequate.

Yes.

1.3 Committee membership is adequate.

Yes.
Suggestion - Appoint an additional member who is appropriate to represent the company administration.

1.4 Committee meets at required frequency.

Yes.
Comment- The committee meets quarterly as specified in the RSM.

1.5 Committee documents activities and actions.

Yes.
Suggestion - Wording of committee minutes could be more explicit about decisions reached and actions taken. Also, consider using an "action list" to track progress on items selected for action by the committee.

1.6 Committee actively reviews and approves operations.

No.
Comment- The committee does not actively review operations, except those that appear on the agenda for meetings.

Suggestion - Implement a system through which the Committee issues "permits" for use of radioactive material. Permits can specify such issues as personnel, locations, inventory limits, supervisory responsibility and any special precautions deemed appropriate by the Committee. Each operation involving radioactive material has a written standard operating procedure (SOP) that the worker is trained to follow. The Committee could review these documents to see that appropriate precautions for radiation protection are included.

1.7 Committee has enforcement policy or other demonstrated means of enforcement.

Yes.
Comment- Item 5 in section I-2.1 of RSM states that the committee has enforcement authority.
Suggestion - Document the decision to empower the committee with an additional communication from the company administration.

1.8 Committee reviews radiation safety program on annual basis.

Not in recent years. This audit was undertaken to correct this issue.

1.9 RSO has written definition of responsibility and authority.

Yes.
Comment- See section I-2.3 and I-3.0.

1.10 RSO's reporting structure is adequate to ensure support for both policy decisions and emergency actions.

Yes.
Suggestion - The information on the RSO's reporting structure in the current version of RSM is out of date and should be revised.

1.11 RSO receives adequate financial support for necessary operations and maintenance of professional level of knowledge.

Yes.
Comment- RSO indicates financial resources are adequate and the RSO plans to attend a professional development course within one year. A technician was recently assigned to assist with radiation safety program on a part time basis.

2. Personnel Dosimetry and Bioassay

2.1 Written procedure defines when and how personal dosimeters must be worn.

Yes.
Comment - See section II-5.1 of RSM.
Suggestion - Confirm all entrances to areas with access restrictions for radiation safety purposes are marked appropriately.

2.2 Dosimeters are provided and processed by vendor with NAVLAP certification.

Yes.

2.3 Dosimetry results reviewed by RSO in a timely manner.

Yes.
Comment - All Dosimetry reports are reviewed and initialed by the RSO.

2.4 ALARA guidelines established for doses to personnel.

Not formally.
Comment- The RSO investigates all dosimeter readings that indicate a measurable dose. This, or some other appropriate level, should be formally designated as an ALARA investigation level.

2.5 RSO follows up on dose reports that exceed the ALARA guideline.

Yes, in effect. See item 2.4.

2.6 Dosimetry results are provided to the individual.

Yes.
Comment- All dosimeter readings that indicate a measurable dose are verbally reported to the worker by the RSO.
Suggestion - Use a form letter to the worker to document 1) the RSO's investigation into the circumstances that may have caused the dose and 2) corrective actions, if any. Also, consider providing workers an annual written dosimetry summary [this may be available as a service by the dosimeter vendor].

2.7 In lab check confirms dosimeters are worn when and how they are required.

Not determined.

2.8 Written procedures define how and when bioassays are performed .

Yes.
Comment- See section II-5.2 of RSM.
Suggestion - Reword this section of the RSM to be more specific to your plant's specific operations. Have the vendor providing analysis services provide documentation of their qualifications and written procedures for collection, preservation, storage and transportation of samples. Document that these procedures are followed.

2.9 Bioassay results reviewed by RSO in a timely manner.

Yes.
Suggestion - Reports need to be initialed and dated by the RSO. Intake and/or dose need to be calculated for samples that indicate measurable radioactivity.

2.10 ALARA guidelines established for bioassay results.

Yes.
Comment- See section II-5.2 of the RSM.

2.11 RSO follows up on dose reports that exceed the ALARA guideline.

No.
Comment- ALARA guideline for bioassay results is specified as "10 percent of the Annual Limits of Intake (ALI's)". Bioassay results can not be compared directly to this criteria. The information in the report is presented as activity concentrations in the sample. This information must be converted to intake activities.
Suggestion - A method to determine intake needs to be developed.

2.12 Bioassay results are provided to the individual.

No.

3. Calibration of Radiation Detection Equipment

3.1 Inventory listing of required equipment.

Yes.
Comment- See section II-7.1 of the RSM. The current list is correct.

3.2 Calibration procedures and contractor license on file.

No.
Comment- The RSO indicated he is in the process of obtaining them from the calibration service provider.

3.3 Calibration sources NIST traceable.

Yes.
Comment- Calibration certifications on file indicate this is so.

3.4 Calibration information available to user.

Yes.
Comment- The calibration information provided to the user was not always appropriate with the use of the instrument.
Suggestion - For each radiation detection instrument, review the calibration information provided by the calibration service and the information provided to the user to be sure the calibration data and calibration sticker provide the necessary information.

3.5 Calibration frequency adequate.

Yes.

3.6 Equipment calibrated within appropriate time period.

Yes.
Comment- Data verified for two instruments. Procedures and records for instrument calibration appear well maintained.

3.7 Equipment checked for proper operation during use (check source).

Yes for some units, not on others.
Comment- RSO confirmed he is in the process of obtaining more check sources.

Suggestion - As part of annual retraining, remind workers of the procedure for checking proper operation.

4. Training

4.1 Content of training program is documented.

Yes.
Comment- See *Radiation Safety Training Manual* dated December 1994. Course outline was attached to sign-in sheets for each training program. Each operation involving radioactive material has a written standard operating procedure (SOP) that the worker is trained to follow.

4.2 Content of training program is adequate.

Yes.

4.3 Attendance at training program is documented.

Yes.

4.4 Effectiveness of training is documented (test results).

No.
Comment- The RSO indicated he planned to re-institute the practice of requiring each worker using radioactive material to pass a quiz based on the material contained in the radiation safety training program.

4.5 In lab check confirms effectiveness of training.

Not evaluated.

5. Un-sealed Material Inventory

5.1 RSO tracks on-hand inventory and maintains levels within license limits.

Yes.
Comment- The quantity of radioactive material on-hand is tallied every 4 to 6 months and prior to giving approval to purchase new material.
Suggestion - Confirm the on-hand inventory on a monthly or quarterly basis. Include all items in storage for disposal.

5.2 In lab checks confirm inventory is accurate.

Yes.
Suggestion - Review all procedures for tracking amount of radioactive material uses and on hand with the individuals keeping these records. Confirm that the procedures would catch situations where an unauthorized or un-recorded use had taken place (ex. a slow leak from a gas cylinder).

6. Sealed Source Wipe Test & Inventory

6.1 RSO maintains up-to-date list of all sealed sources.

Yes.
Comment - The list is maintained as part of the RSM.
Suggestion - If the list of all sealed sources were maintained on a log apart from the RSM, it would be easier to up-date.

6.2 Wipe tests and inventory checks for all sources made at the required frequency.

Yes.
Comment - Frequency is 6 months. Wipe tests taken July 8, 1997 - results still pending. Wipe tests taken January 22, 1997 - results dated 2/20/97. Wipe tests taken July 12, 1996 - report dated 7/22/96.

6.3 Labeling, signage and security adequate for all sources.

Not determined.

6.4 Documentation of wipe test results is adequate.

Yes for some reports, but not for all.
Comments - The format of wipe test analysis reports changed between 7/22/96 and 2/20/97. The latter report, the results do not indicate the total activity determined for the sample.
Suggestion - RSO needs to indicate on each report that the results for each source are or are not satisfactory. The report format should indicate the total activity determined per wipe. Leak tests are not required for sources #11 and #12 because of their low activity.

6.5 Follow up action taken as needed.

No follow-up action has been needed.

7. Compliance Inspections of Radioactive Material Use Areas

7.1 Inspections of use area are performed routinely.

No.
Suggestion - An inspection program should be developed and carried out on a quarterly or semi-annual basis. One individual should be designated as responsible for maintair compliance with inspection criteria. Prior to initiating inspection program, the inspection criteria should be explained to the individuals responsible for maintaining compliance.

7.2 Inspections are properly documented.

No.

7.3 Inspections cover appropriate items.

No.

7.4 Inspections are reviewed by RSO.

No.

7.5 Follow up, if needed, is carried out.

No.

7.6 See inspection report for individual areas for results of inspection conducted by this auditor.

Inspection conducted of Mounting Room Area 12. See attached report.

8. Radiation Protection Surveys of Radioactive Material Use Areas

8.1 Surveys of use area are performed routinely.

Yes.

8.2 Surveys are properly documented.

Wipe test surveys satisfactory. Improvement needed for meter surveys.
Suggestion - A written procedure should be developed for how surveys are performed. Survey data sheets should identify the radiation detection instrumentation used for the survey. Survey reports should show results in DPM and mrem/h.

8.3 Surveys are reviewed by the RSO.

Yes.
Suggestion - The RSO should indicate whether results are or are not satisfactory.

8.4 Follow up, if needed, is carried out.

Yes.
Comments - Records show the results of both pre and post decontamination results.

9. Waste Management

9.1 Waste management procedures in place for all operations.

Yes.
Comment - SOP's explain how to handle radioactive waste.
Suggestion - The Radiation Safety Committee should review SOP's to determine that waste procedures are adequate.

9.2 Procedures provide waste minimization.

Yes.
Comment - The licensee uses re-distillation and evaporation to reduce waste volumes.

9.3 Waste storage procedures minimize possibility of spills or improper handling.

Improvement needed.
Suggestion - Require secondary containment for containers of liquids. Line trash containers with disposable plastic liners.

9.4 In lab checks confirm workers familiar with waste procedures.

Yes.
Comment - Based on a discussion with one worker in the Mounting Room.

9.5 Waste is collected at an appropriate frequency.

Yes.
Comment - One full container found in the Mounting Room with a date of 1995.

9.6 Waste is transported and/or stored in an appropriate manner.

Yes.

9.7 If practiced, disposal to the sanitary sewer is documented and conforms to applicable regulations.

No waste is added to the sanitary sewer.

9.8 Waste is transferred to licensed facility via a licensed broker.

Yes.

10. Authorization of Users and Operations of Radioactive Material

10.1 Standardized approval process.

Operations involving radioactive material are covered by SOP's. Some of these are reviewed by the RSO.
All users receive radiation safety training prior to being allowed to work in any radioactive material use area.
Suggestion - Develop a more formal process for the radiation safety committee to approve all of use of radioactive material. See suggestion for item 1.6. The review should take place prior to the initiation of any new procedure and take place periodically to confirm that operations continue to follow committee requirements.

10.2 Written operating procedures.

Exist for some operations.

Suggestion - The Radiation Safety Committee should review all SOP's that involve the use of radioactive material and ensure that they address radiation safety adequately.

10.3 Responsibility for compliance delegated to specific individual.

No.
Suggestion - Designate one specific individual to supervise each area where radioactive material is used.

10.4 Authorizations for selected areas reviewed and adequate.

No.

10.5 In lab check confirms compliance with conditions of authorization.

Not reviewed.

11. Emergency Response

11.1 Responsibility for emergency planning is delegated to a specific individual.

Yes, the RSO.

11.2 Potential emergency situations documented.

No.

11.3 Emergency plan and procedures are appropriate to the potential for emergency situations.

No.

11.4 All internal and external groups with responsibility for emergency response have confirmed their willingness to fulfill their part in the emergency plan.

Need for improvement.
Comments - Local hospital and fire department are aware that radioactive materials are used at the facility. Additional planning for emergency situations is recommended.

11.5 All material and equipment needed to carry out the emergency plan is in place ready for immediate use.

Yes.

11.6 Contents of emergency supplies checked on regular basis.

No.

11.7 Drills or other training activities are conducted with all groups at the appropriate frequency.

No.

11.8 Appropriate emergency procedures, including up-to-date contact numbers, are posted in all use areas.

Yes.

11.9 Actual emergency situations, if any, are documented, reviewed to determine if changes are needed in the plan. If so, changes are implemented.

No emergency situations have occurred.

12. Receiving of Radioactive Material

12.1 All orders for radioactive material receive prior approval of [illegible]

Yes.

12.2 Records of previous orders confirm RSO approves all [illegible] in advance.

Yes.

Comment - Purchase requests for radioactive material must be signed by the RSO before the Purchasing Department will act on them.

12.3 Written procedures available for opening incoming packages.

Yes.

Comment - See section II-11a&b of the Radiation Safety Manual.

12.4 Procedures are adequate.

Yes.

12.5 Arrangements are made for off-hours deliveries.

Yes. No shipments are accepted after hours.

12.6 Records of past shipments confirm all are received in a manner consistent with procedures.

No.

Procedures and form for receiving only recently instituted.