

# APPENDIX Q

## EXAMPLE RADIATION SAFETY PROGRAM ANNUAL REVIEW

### 1. INTRODUCTION

This form documents performance of the annual radiation protection program review required by the Rules and Regulations for Control of Sources of Ionizing Radiation, Paragraph RH-1004, "Radiation Protection Programs". The review consists of an evaluation of the program's content and implementation, evaluating it's effectiveness in complying with regulatory requirements and keeping radiation exposures to workers and the general public as low as reasonably achievable (ALARA). Records of the annual review shall be maintained for inspection purposes and shall be retained for at least 3 years following the date the record was created.

License Name: \_\_\_\_\_

License No.: \_\_\_\_\_ Review Date \_\_\_\_\_

Auditor: \_\_\_\_\_

(name, title)

(signature)

Management Review: \_\_\_\_\_

(name, title)

(signature)

### 2. REVIEW HISTORY

A. Last review conducted on (date): \_\_\_\_\_

B. Any deficiencies noted?..... Yes No

C. Were corrective actions taken?.....Yes No N/A  
(look for signs of recurrence)

D. Brief description of prior deficiencies, corrective actions taken: \_\_\_\_\_

---

---

---

---

---

3. **INDEPENDENT REVIEWS/AUDITS/INSPECTIONS**

A. Any independent reviews/audits/inspections conducted since the last internal review (e.g. Consultant or Department inspection)?.....Yes No

B. Brief description of prior deficiencies, corrective actions taken: \_\_\_\_\_

---

---

4. **ORGANIZATION AND SCOPE OF PROGRAM**

A. If the mailing address or permanent address changed, has the license been amended to reflect the change? .....N/A Yes No

B. If ownership has changed or bankruptcy has been filed, was the Arkansas Department of Health notified?.....N/A Yes No

C. Current Radiation Safety Program organization matches description in license (if not amend license to reflect changes in organization).....Yes No

D. Is company management appropriately involved with the radiation protection program and oversight of the RSO's activities? .....Yes No

E. **Does Management/RSO emphasize the ALARA Program to radiography personnel, along with the importance of maintaining occupational radiation dose ALARA?**.....Yes No

.....F. **Are good radiological work practices used by radiography personnel?**.....Yes No

.....G. Does the license authorize all sources and devices possessed? ....Yes No

H. If the RSO has changed, has the license been amended to identify the new RSO?.....N/A Yes No

I. Is the RSO meeting the duties and responsibilities for the position?.....Yes No

J. Does RSO have sufficient time and support to perform all duties and responsibilities?.....Yes No

K. Staffing sufficient to support to Radiation Protection Program?.....Yes No

L. Do all temporary job sites meet regulatory definition.....Yes No

M. If no to A., has the Department been notified? .....Yes No

**5. FACILITIES AND EQUIPMENT**

**A.** Is the facility correctly described in the license (i.e., any changes impacting Radiographic operations have been submitted to and approved by the Department)?.....Yes No

**B.** Permanent radiographic installation

1. Correctly posted?.....Yes No

2. Entrance controls and alarms present and operable?.....Yes No

**C.** Temporary High Radiation Area entry controlled?.....Yes No

**D.** Storage Area

1. Storage facilities correctly described in license?.....Yes No

2. Facilities adequate to hold all authorized sources?.....Yes No

3. Sources locked in devices?.....Yes No

4. Radiographic devices secured as described in license?.....Yes No

**E.** Temporary job site radiography

1. Radiography performed as described in license?.....Yes No

2. Correctly posted?.....Yes No

3. Job site controlled as described in license?.....Yes No

**F.** Radiography equipment

1. Radiographic devices, source assemblies, and source changers currently in use comply with regulatory requirements?.....Yes No

2. Licensee registered with the USNRC as a Type B package user for all Type B models in use and documentation of registration on file?.....Yes No

3. Source changers and storage containers meet radiation level limits?.....Yes No

4. Equipment exempted by specific license condition is used in accordance with license commitments and authorization?.....Yes No

**6. POSTING AND LABELING**

**A. Following documents posted at permanent facility**

- 1. Emergency Procedures.....Yes No
- 2. Department "Notice To Employees".....Yes No
- 3. Department letter containing "Notice of Violations" posted within 5 days.....Yes No
- 4. Other documents listed in Rules and Regulations posted, unless posted notice identifies where documents may be viewed.....Yes No
- 5. Above documents posted in conspicuous location(s) to allow workers to observe them on the way to/from work?.....Yes No

**B. Radiation Posting correctly displayed**

- 1. Caution Radioactive Material?.....Yes No
- 2. Caution Radiation Area?.....Yes No
- 3. Caution High Radiation Area?.....Yes No

**C. Devices and Containers correctly labeled**

- 1. Radiographic Devices?.....Yes No
- 2. Source Changers?.....Yes No
- 3. Storage or Transport Containers?.....Yes No

**D. Other required posting or labeling?.....Yes No**

**7. SECURITY**

Radioactive materials secured as described in the license?.....Yes No

**8. COMPLIANCE WITH PUBLIC DOSE LIMITS**

**A.** Public dose compliance study approved by the Department?.....Yes No

**B.** Have licensed activities changed during the year to increase potential for public dose limits being exceeded?.....Yes No

**C.** If Yes to **B**, has study been updated to demonstrate compliance with limits.....Yes No

**9. TRAINING, RETRAINING, AND CERTIFICATION**

- A. Radiation safety training and retraining is unchanged and is as described by license or as amended?.....Yes No  
If No, describe changes\_\_\_\_\_
- B. Radiation workers have received Radiation Awareness Training and Instructions To Workers Training?.....Yes No
- C. Workers with assigned duties affecting transportation safety of radioactive material have received USDOT HAZMAT training (49CFR 172.700-172.704)?.....Yes No
- D. Radiography personnel have been provided copies of required documents e.g. Rules and Regulations, License, Operating and Emergency Procedures)?.....Yes No
- E. Radiography personnel have received training as described by license?.....Yes No
- F. Radiography personnel have received at least 8 hours of radiation safety refresher training annually?.....Yes No
- G. All Radiography personnel are certified?.....Yes No
- H. Radiation workers cognizant of requirements for various dose limits (e.g., dose limits to the public, embryo/fetus and declared pregnant worker, annual limit for occupationally exposed personnel, etc.).....Yes No

**10. INTERNAL REVIEWS, AUDITS OR INSPECTIONS**

- A. Field audits demonstrate radiography personnel use of ALARA, safe work practices, and compliance with the license, Operating and Emergency Procedures and regulatory requirements?.....Yes No
- B. Equipment check before use each day?.....Yes No
- C. Equipment inspection and maintenance performed at 3-month intervals?.....Yes No

**11. OPERATING AND EMERGENCY PROCEDURES**

- A. Operating and Emergency Procedures as approved by Department and compatible with the Rules and Regulations?.....Yes No

- B. Procedures contain the correct telephone numbers of the Radiation Safety Officer, the Department, and the USNRC Regional Office?.....Yes No
- C. Radiography personnel take all required documents to field temporary job Sites and maintain copies of the required documents on site for the duration Of the job?.....Yes No

**12. PERSONNEL MONITORING (PM)**

- A. All radiography personnel have been assigned a PM badge?.....Yes No
- B. Pm badges are worn properly by radiography personnel and are protected from heat, light, moisture, and chemicals when not worn?.....Yes No
- C. PM badges are stored with control badge in a protected area?.....Yes No
- D. PM badges exchanged and processed at the required frequency?.....Yes No
- E. Have any PM badges been lost or damaged?.....Yes No
- F. If Yes to E, was the RSO properly notified and a record of the individual's estimated dose provided to the PM badge vendor and kept on file?.....Yes No
- G. Have any spare PM badges been assigned to individuals since the last review?.....Yes No
- H. If Yes to G, were spare PM badges marked to identify individuals they were assigned to, and PM badge vendor notified to add dose from spare badge to individual's occupational dose totals?.....Yes No
- I. If Yes to G and spare PM badges were used for newly-hired individuals, were assigned PM badges ordered and used during the next monitoring period?.....Yes No

If No to I, describe why, and summarize the corrective action taken to prevent recurrence: \_\_\_\_\_  
 \_\_\_\_\_

- J. If Yes to E, and spare PM badge(s) used to replace lost or damaged badges(s), were the incidents investigated and documented?.....Yes No

If Yes to J, describe the investigation; if No, describe actions taken to prevent recurrence: \_\_\_\_\_  
 \_\_\_\_\_

**K.** Are dosimetry reports reviewed by the Radiation Safety Officer within 7 days of receipt?.....Yes No

**L.** Has a “Cumulative Occupational Exposure History”, Department Form Z, been completed for each monitored individual?.....Yes No

**M.** Has an “Occupational Exposure Record for a Monitoring Period”, Department Form Y, been completed for each monitored individual?.....Yes No

**N.** Female workers advised on risks to embryo/fetus; provided instructions for declaring pregnancy and receipt of instructions documented?.....Yes No

**O.** If female worker declared pregnancy, was declaration documented; individuals Provided instructions for limiting dose during pregnancy; and receipt of Instructions documented?.....Yes No

**P.** For declared pregnant individuals, records are maintained that document embryo/fetus dose is less than 500 millirem for the gestation period?.....Yes No

**Q.** Annual and Termination personnel radiation dose reports issued to individuals?.....Yes No

**R.** Personnel Monitoring Records reviewed from (dates) \_\_\_\_\_ to \_\_\_\_\_

1. Highest dose for monitoring period: \_\_\_\_\_ millirem Date: \_\_\_\_\_

2. Highest dose for a Quarter: \_\_\_\_\_ millirem Date: \_\_\_\_\_

3. Highest Annual dose: \_\_\_\_\_ millirem Date: \_\_\_\_\_

**S.** Describe the results of the review of the personnel monitoring badge, including any corrective actions taken or planned to address identified weaknesses:

---

---

**T.** Are occupational doses within regulatory limits?.....Yes No

**U.** Are occupational doses ALARA?.....Yes No

If No, describe actions being taken to reduce/eliminate unnecessary dose and achieve ALARA dose levels: \_\_\_\_\_

---

---

**13. POCKET DOSIMETERS OR ELECTRONIC PERSONAL DOSIMETERS**

- A. Adequate number of 0 – 200 R/hr range calibrated/operable dosimeters available?.....Yes No
- B. Adequate number of high-range calibrated/operable dosimeters available?.....Yes No
- C. Dosimeters calibrated at 12-month intervals?.....Yes No
- D. Dosimeters bear calibration labels and calibration records are maintained?.....Yes No
- E. Dosimeters checked on days of use?.....Yes No
- F. Out-of-service dosimeters tagged or stored to prevent use?.....N/A Yes No
- G. Dosimeters read and recorded at start of each shift?.....Yes No
- H. Daily readings recorded?.....Yes No
- I. Off-scale dosimeter procedure available; records maintained?.....Yes No

**14. ALARM RATEMETERS**

- A. Adequate number of calibrated/operable ratemeters available?.....Yes No
- B. Ratemeters set to alarm at 500 mR/hr?.....Yes No
- C. Ratemeters calibrated at 12-month intervals and after repair?.....Yes No
- D. Ratemeters bear calibration labels and calibration records are maintained?.....Yes No
- E. Ratemeters checked on days of use and receive quarterly inspection and maintenance?.....Yes No
- F. Out-of-service ratemeters tagged or stored to prevent use?.....Yes No
- G. Checked to insure that alarm functions properly at the start of each shift?.....Yes No

**15. RADIATION SURVEY INSTRUMENTS**

- A. Adequate number of 0 – 1 R/hr range calibrated/operable radiation survey instruments are available?.....Yes No
- B. Instruments are calibrated at 3-month intervals and after repair?.....Yes No
- C. Instruments bear calibration labels and calibration records are maintained?.....Yes No

D. Instruments checked on days of use and receive quarterly inspection and maintenance?.....Yes No

E. Out-of-service meters tagged or stored to prevent use?.....Yes No

**16. LEAK TESTING**

A. Sealed sources are leak tested as described in the license at 6 month Intervals?.....Yes No

B. Radiography devices and source changers are leak tested for depleted uranium contamination as described in the license at 12 month intervals?.....Yes No

C. Do leak test records include all the information required by the Rules and Regulations?.....Yes No

D. Have any sources or devices or containers been found to be leaking?.....Yes No

If Yes, was the Department properly notified as required by the license?.....Yes No

If No, Explain: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

E. Leak test records properly maintained?.....Yes No

**17. RADIATION SURVEYS**

A. Radiation surveys comply with the Rules and Regulations?.....Yes No

B. Radiation survey performed after each exposure, (including radiographic device and guide tube) to insure the radiation source has returned to the shielded position?.....Yes No

C. Radiation survey performed of radiographic device when placed in storage to insure the radiation source is in the shielded position?.....Yes No

D. Radiation survey performed to demonstrate protection of members of the public?.....Yes No

E. Radiation survey performed to verify that unrestricted area radiation levels do not exceed 2 millirem in any 1 hour?.....Yes No

F. Records of radiation surveys are properly maintained?.....Yes No

**18. TRANSPORTATION**

A. Radioactive material ordered, received, opened, and stored as described in the license and in accordance with USDOT regulations?.....Yes No

B. USDOT approved and authorized transport containers are the only containers used by the licensee?.....Yes No

C. The licensee is registered with the USNRC as a user of all Type B packages approved for use?.....Yes No

D. Transport of radioactive material to field sites by the licensee are performed as described in the license?.....Yes No

E. Shipments of radioactive material by a common carrier are performed as Described in the license?.....Yes No

F. Shipping papers are prepared and use as described in the license and in accordance with USDOT regulations?.....Yes No

**19. RECEIPT, TRANSFER, AND ACCOUNTABILITY OF RADIOACTIVE MATERIAL**

A. Receipt, transfer, and disposal of radioactive material as described in the license and is performed in accordance with the Rules and Regulations?.....Yes No

B. Radioactive material is physically inventoried at 3-month intervals?.....Yes No

C. Incidents of lost or missing radioactive material are promptly reported to the Department?.....Yes No

**20. EQUIPMENT INSPECTION AND MAINTENANCE**

A. Inspection and maintenance of radiography equipment (radiographic devices, source storage and transport containers, source changers, radiation survey instruments, etc.) is performed as described in the license?.....Yes No

B. Inspection and maintenance performed on a quarterly basis?.....Yes No

C. Copies of the manufacturer's operation and maintenance manuals are maintained by the licensee?.....Yes No

D. Manufacturer's recommendations for the operation and maintenance of radiography equipment are followed?.....Yes No

**21. RECORDKEEPING, NOTIFICATIONS, AND REPORTS**

A. All required documents maintained as described in the license?.....Yes No

B. Have any incidents or emergencies occurred since the last review?.....Yes No

C. If Yes to B, was the response adequate?.....Yes No

D. If No to C, briefly describe identified weaknesses: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

E. If No to C, describe the corrective actions taken or planned: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

F. Have all required reports been issued as described in the license?.....Yes No

**22. REVIEW FINDINGS**

**A. Summary of STRENGTHS identified during the review:**

---

---

---

---

---

**B. Summary of DEFICIENCIES identified during the audit:**

---

---

---

---

---

**C. Description of Corrective Action Taken or Planned:**

---

---

---

---

---

**D. Description of other recommendation for improvement:**

---

---

---

---

---