

NOTE: All areas indicated in field notes are not required to be addressed during each inspection.

INDUSTRIAL RADIOGRAPHY INSPECTION FIELD NOTES
Region III

Inspection Report No. 91001

License No. 14-24479-01

Licensee (name and address)

Docket No. 030-18662

MASON & HANGER-SILAS MASON
COMPANY, INC.
LOWA ARMY AMMUNITION PLANT
MIDDLETOWN, IA 52638

Licensee Contact JOE E. SHANNAN

Telephone No. 319-753-7308

Last Amendment No. 03

Date of Amendment JULY 5, 1980

Priority: C-1

Program Codes: 03310 - Fixed
 03320 - Temporary

Date of Last Inspection MAY 23, 1980

Date of This Inspection AUGUST 6, 1981

Type of Inspection: Announced Unannounced
 Routine Special
 Initial Reinspection

Next Inspection Date 9208 Normal Reduced Extended

Summary of Findings and Action:

- No violations, Clear 591 or letter issued
 Violations, 591 or letter issued
 Action on Previous Violations

Inspector: D. R. Gibson
(Signature)

Date August 10, 1981

Approved: William H. Schultz
(Signature)

Date 8-13-91

B-10

1. ORGANIZATION

a. Briefly describe the organizational structure:

JOE SHANNAN is RSO WITH
NICHOLAS KIELAK AS ALTERNATE RSO
BOTH REPORT TO RICH LOBHRY - PLANT MCA

b. Organizational structure meets license requirements. [L/C] Y N

c. Radiographers and Assistants named in license Y N

d. List radiography personnel:
(Indicate if they are radiographers or assistants)

CARL BEARD
DENNIS BROBSON - PERFORMED PERIODICALLY SINCE LAST INSP.
JOHN CARLSON - The only active personnel at this time
PHIL CLEM
ROY SMITH
ROB JOHNSON - PERFORMED PERIODICALLY SINCE LAST INSP.
PAULINE OSBORN

2. INSPECTION HISTORY

a. Last inspection conducted on MAY 23, 1990

b. Violations or deviations were identified Y N

c. Response letter or 591 dated MAY 23, 1990

d. Violations from Previous Inspection

<u>Requirement</u>	<u>Violation</u>	<u>Corrective Action Taken (Y/N)</u>	<u>Status</u>

e. Any previous violations not corrected Y N

Explain.

3. SCOPE OF PROGRAM

- a. License has multiple authorized locations of use () Y (X) N
- b. If so, list location(s) inspected (X) N/A
They have two locations, but one is not being used at present
- c. List those individuals contacted during inspection
**NICHOLAN KIEFER
* RICK LOGHRY - PLT MGR
* CAPT. ROBERT RIVAS - ARMY SAFETY OFFICER*

*Indicates presence at exit meeting

- d. Briefly describe scope, including types of equipment, types of use involving byproduct material, frequency of use, staff size, etc.
*This program is a fixed facility (2 areas) with
BLDC310 ~~3A180 BLP~~ 3A180 BLP
a 527 Ci Co-60 source and a 406 Ci Co-60 source.
Radiographs are taken of heavy munition shells placed in
holders that are moved by conveyor belts that are
operating continuously through the radiation chamber.
T/o 180 cameras are used. They are operated by the
radiography personnel mostly day shift. The units operate
in shielded areas.*

4. OPERATING AND EMERGENCY PROCEDURES

- a. Licensee maintains current procedures [34.32] (X) Y () N
- b. Procedures contain all information specified in [34.32] (X) Y () N
- c. Procedures are approved by NRC [34.11] (X) Y () N

Remarks. *most are part of back up to the license*

5. TRAINING, RETRAINING, AND INSTRUCTIONS TO WORKERS

- a. Instructions to workers per [10 CFR 19.12] Y () N
- b. Parts 19, 20 , and 34; the license; and Operating and Emergency Procedures furnished to all radiographers and assistants [34.31(a)(2),(b)(1)] Y () N

Remarks.

- c. Training program required [L/C, 34.31] Y () N

(1) If so, briefly describe training program: *The RSO or alternate train personnel in the licensee's procedure. Most personnel attend amersham's course.*

- (2) Training program implemented Y () N
- (3) Written tests completed by all radiographers and assistants [34.31(a)(4), (b)(3)] Y () N
- (4) Oral tests [34.31(b)(3)] Y () N
- (5) Inspector reviewed test results FOR CARLSON Y () N *NO NEW PERSONNEL*
- (6) All radiographers completed on-the-job training Y () N
- (7) Retraining program required Y () N
- (8) Retraining program implemented Y () N
- (9) Records maintained [34.31(c)] Y () N

Remarks. *ANNUAL RETRAINING EACH JANUARY 98 + 97% on tests after the training. Personnel have a test after each training session.*

6. INTERNAL AUDITS OR INSPECTIONS

- a. Audits or inspections of each radiographer and assistant are conducted per [34.11(d)] Y () N
- b. Equipment check prior to use each day [34.28(a)] Y () N
- c. Equipment inspection and maintenance performed at 3-month intervals per procedures [34.28(b)] Y () N

The A 310 Rldt area is inspected even though the unit is not in use

Issue Date:

Appendix D, 87100

d. Records maintained.

() Y () N

Remarks.

7. FACILITIES

a. Permanent radiographic installation [34.2] () N/A

(1) High Radiation Area entrances and exits controlled in accordance with [20.203(c)] () Y () N

(2) Entrance controls are of type described in [34.29(a)] () Y () N

If YES, complete (a)-(e) below: () N/A
[34.29(b)]

(a) Visible and audible signals warn of radiation () Y () N

(b) Visible signal actuates when source is exposed () Y () N

(c) Audible signal actuates if entry is attempted when source is exposed () Y () N

(d) System tested at 3-month intervals () Y () N

(e) Records maintained () Y () N

Remarks. *Both units at 3 month intervals*

b. Temporary High Radiation Area entry controlled in accordance with [20.203(c)(4) and 34.41] () Y () N () N/A

c. Field location
(1) Field work authorized [L/C] () Y () N () N/A
(2) Field inspection conducted () Y () N () N/A

NOTE: If inspector performs field inspection, a separate radiography field audit report should be completed and attached to these field notes.

d. Storage Area

- (1) Storage facilities as described in license [L/C] Y () N
- (2) Sources locked in devices [34.22] Y () N
- (3) Devices secured to prevent tampering or unauthorized removal [34.23] Y () N

Remarks.

8. MATERIALS AND EQUIPMENT

- a. Describe any special equipment used by licensee: (shields, collimators, etc.) *SPECIAL COLLIMATORS ON EACH UNIT*
- b. Radiographic exposure devices and storage containers meet radiation level limits per [34.21] (new rule eff. 01/10/90) Y () N
- c. During radiographic operations, sources are locked in shielded position each time source is returned to that position [34.22(a)] Y () N
- d. All sealed sources not fastened to or contained in a radiographic exposure device are tagged per [34.25(e)] Y () N

Remarks. *The doors will not open with the source exposed. They have a fail safe safe unit that retracts the source if air is lost. The air pressure is checked daily before any exposures.*

e. Leak tests

- (1) Leak test method approved [34.25(c)] Y () N
- (2) Model of leak test kit Ed House
- (3) Leak tests performed at intervals not to exceed six months [34.25(b)] Y () N
- (4) Records maintained [34.25(c)] Y () N

f. Inventory

- (1) Quarterly physical inventories conducted [34.26] Y () N
- (2) Inventories contain all required information [34.26] Y () N
- (3) Materials possessed as authorized by license [L/C] Y () N
- (4) Procurement and use in accordance with license [L/C] Y () N
- (5) Most recent BPM inventory conducted on July 22, 1981

Source Changer Model #	Activity	Isotope	Source S/N	Camera Model and S/N
PERFORMED BY AMERSHAM N/A	527 u	Co-60	2107	T/O 180
	406	↓	1873	T/O 180
	~112 Mci	CS-137		T/O 773 Calibrator

Remarks.

g. Utilization logs

- (1) Utilization logs maintained [34.27] Y () N
- (2) Logs contain all required information [34.27] Y () N

Remarks. The licensee reported a loss of log information for 3 yrs prior to Oct 22, 1980. These records were of work performed at 3A-100 Bldg. These records were reviewed by NRC inspectors up to May 22, 1980. The unit has not been used, except for leak tests, inventory,

(OVER) on and equipment check. Records have been up to date since then. This was explained in a letter to BETH and telecon.

The quarterly inspection records are up to date and indicate that this ~~so~~^{unit} had not been used since last inspection.

The licensee will be getting rid of the two units now. They will be replaced with an accelerator.

9. INSTRUMENTATION

a. Describe the type and number of survey instruments possessed by the licensee:

VICTOREK 592,
440
400

- b. Instruments are capable of measuring 2 mR/hr through 1 R/hr [34.24] (✓) Y () N
c. Operable and calibrated survey instruments available and used on each job [34.43(a)] (✓) Y () N
d. Calibration performed at intervals not to exceed three months [34.24] (✓) Y () N
e. Records maintained [34.24] (✓) Y () N

Remarks. CALIBRATION PERFORMED BY MR. KILGER

10. RADIATION SURVEYS

- a. Area or facility surveys conducted to show compliance with 20.105 [20.201(b)] (✓) Y () N
b. Records maintained [20.401(b)] (✓) Y () N
c. Survey after each exposure, including guide tube and entire circumference of device (No Guide Tube) [34.43(b)] PERFORMED AFTER EACH SERIES OF EXPOSURE (✓) Y () N
d. Survey of device when placed in storage, including entire circumference of device [34.43(c)] ~~PERFORMED~~ THE DEVICE IS INSIDE A (✓) Y () N
e. Records maintained of final survey made when devices are stored for day [34.43(d)] (✓) Y () N

Remarks.

WELL SHIELDED AND COLLIMATED SHIELD. THE SOURCE DOES NOT LEAVE THE SHIELD.

j. Alarm ratemeters (eff. 01/10/91)

- (1) Type B.F. SMITH
- (2) Range 30 MR/HR
- (3) Alarm checked at start of each shift [34.33(f)(1)] Y () N
- (4) Alarm preset at 500 mr/hr [34.33(f)(2)] Y () N
- (5) Alarm ratemeters calibrated (±20%) at intervals not to exceed one year [34.33(f)(4)] Y () N

Remarks. This licensee is not required to have alarms, but does issue them as an added safety feature.

The pocket dosimeter readings back from Oct. 1990 were lost during a "Clean up" of Bld 3A100. The records were reviewed by NRC Inspector to May 1990. The unit has not been used since ~~that~~ that inspection except for 3 month checks and 6 mo. leak tests. These records are in the maintenance logs.

12. NOTIFICATION AND REPORTS

- a. Licensee in compliance with [19.13] (reports to individuals) Y () N () N/A
- b. Licensee in compliance with [20.402] (theft or loss) Y () N () None
- c. Licensee in compliance with [20.403] AND [34.30 - eff. 01/10/91] (incidents) Y () N () None
- d. Licensee in compliance with [20.405] AND [34.30 - eff. 01/10/91] (overexposures) Y () N () None
*EXCEPT LOSS OF PK WORDS
NO EXPLANATION FOR NOTES*
- e. Annual reports furnished to NRC per [20.407] Y () N
- f. Termination reports furnished to NRC per [20.408] Y () N

Remarks.

13. POSTING AND LABELING

- a. Radiation Areas properly posted [20.203(b)] Y () N
- b. High Radiation Areas properly posted [20.203(c)(1)] Y () N
- c. Use or storage areas posted "Caution - Radioactive Materials" [20.203(e)(1)] Y () N
- d. Containers or devices properly labeled [20.203(f)] Y () N
- e. NRC-3 "Notice to Workers" is posted [19.11] Y () N
- f. Parts 19 and 20 and license are posted or a notice indicating where documents can be examined is posted [19.11] Y () N

Remarks.

14. RECEIPT AND TRANSFER OF RADIOACTIVE MATERIAL

- a. Procedures established and followed for picking up, receiving, and opening packages [20.205(d)] Y () N
- b. Incoming packages wiped per [20.205(b)] 1987 Y () N
- c. Incoming packages surveyed per [20.205(c)] Y () N
- d. Shipment of sources since last inspection N/A
 - (1) Used container authorized by license [L/C] () Y () N
 - (2) Shipping papers and package labeling properly completed [71.5] Y () N
 - (3) Transfer(s) performed per [30.41] Y () N
- e. Records of surveys and receipt/transfer maintained per [20.401(b) and 30.51] Y () N

Remarks.

15. TRANSPORTATION (10 CFR 71.5(a) and 49 CFR 171-189)

- a. Licensee makes shipments of RAM () Y () N
- b. Shipments are:
- () delivered to common carriers
 - () transported in licensee's own private vehicle
 - () both
 - () no shipments since last inspection

Remarks.

Complete only if shipments made since last inspection:

c. Shipments

- (1) Authorized packages used [173.415,416] *nc* () Y () N () N/A
- (2) Package type used _____ *A*
- (3) For DOT-7A packages, performance test record on file [173.415(a)] () Y () N () N/A
- (4) For DOT-55 packages, use is approved by NRC [173.416(a)] () Y () N () N/A
- (5) Other Type B packages used are approved [173.416(a)] () Y () N () N/A
- (6) Licensee has COCs on file with NRC [71.12(c)(1)] () Y () N () N/A
- (7) Licensee has a QA program approved by NRC [71.12(b)] () Y () N () N/A
- (8) For special form sources, performance test record on file [173.476(a)] () Y () N () N/A
- (9) Packages properly labeled [172.403, 173.441] () Y () N () N/A
- (10) Packages properly marked [173.200] () Y () N () N/A
- (11) Proper shipping papers prepared and used [172.200-204] () Y () N () N/A
- (12) Shipping papers readily accessible during transport [177.817(e)] () Y () N () N/A
- (13) Vehicles placarded as necessary [172.500, 504] () Y () N () N/A
- (14) Cargo blocked and braced [177.842(d)] () Y () N () N/A

(15) Any incidents reported to DOT
[171.15-16]

() Y () N () None

Remarks. EXCEPT LOSS OF SOME RECORDS AS EXPLAINED IN
PREVIOUS SECTIONS

16. RECORDKEEPING FOR DECOMMISSIONING

() N/A

- a. Records of information important to the safe and effective decommissioning of the facility maintained in an independent and identifiable location until license termination [30.35(g)] () Y () N
- b. Records include all information outlined in [30.35(g)] () Y () N

Remarks. Except for book tests and surveys.

17. BULLETINS AND INFORMATION NOTICES

- a. Bulletins, Information Notices, etc., received by the licensee () Y () N
- b. Licensee took appropriate action in response to Bulletins, INs, etc. () Y () N

Remarks. info only.

18. INDEPENDENT MEASUREMENTS

- a. Survey instrument used LuDerm 14-C
- b. NRC Serial No. 019738
- c. Last date of calibration 3-21-91
- d. Inspector's measurements were compared to licensee's Y N
- e. Describe the type and results of measurements:

*Both instruments
in close
AGREEMENT*

*Qty to 0.2 m/s/hr near in
Course area with source exposed,
maximum of 90 m/s/hr on roof
with source exposed. The roof is
properly marked "High Radiation Area".
1.2 m/s/hr CONTACT WITH SHIELDING MAX.*

19. CONTINUATION OF REPORT ITEMS - USE BACK OF PAGE IF NECESSARY

20. LIST OF VIOLATIONS

21. PERFORMANCE EVALUATION FACTORS

Licensee (name & location) MASON-HANCK-SILAS
MASON CO. INC
MIDDLETOWN, IOWA

Inspector D. R. GIBBONS
Inspection Date August 6, 1991

- a. Lack of senior management involvement with the radiation safety program and/or Radiation Safety Officer (RSO) oversight () Y () N
- b. RSO too busy with other assignments () Y () N
- c. Insufficient staffing () Y () N
- d. Radiation Safety Committee fails to meet or functions inadequately () Y () N () N/A
- e. Inadequate consulting services or inadequate audits () Y () N () N/A

Remarks (consider above assessment and/or other pertinent PEFs):

Regional follow-up on above PEFs citations: