



Formerly MAGNAFLUX Quality Services

November 12, 1990

U.S. Nuclear Regulatory Commission  
Document Control Desk  
Washington, DC 20555

Attention: Document Control Desk

Subject: Reply to a Notice of Violation License 12-00622-07

Gentlemen,

In accordance with 10 CFR Part 2.201 and the letter of November 1, 1990, this letter describes our actions concerning the issues identified in the Notice of Violation. Several of the identified items are addressed collectively in this letter since many of the contributing factors and corrective measures are identical. A copy of the Notice of Violation attachment to the letter of November 1, 1990 (docket no. 030-04041) is also attached to this letter for reference. Rather than reiterate each of the seven described violations, each addressed violation is identified numerically as indicated on the attached report.

Violation numbers 1, 2a, 2b, 3a, 3b, and 4

All involved personnel were immediately removed from radiographic operations and an investigation was started. The investigation included interviews with associated personnel, immediate processing of each associated persons film badge, inspection of associated equipment, evaluation of the training of each person, the performance of reenactments, and drug screening.

Our investigation concluded that the persons functioning as the radiographers during the events of April 19, 1990 and May 9, 1990 were knowledgeable and familiar with the requirements of our Operating and Emergency procedures and the pertinent regulations. Specifically, they were familiar and knowledgeable of the requirements and practice to accomplish a proper exposure device survey, the requirement and practice concerning the securing of the isotope in the shielded position within the exposure device after each exposure, the proper use of direct reading pocket dosimetry including charging the instrument prior to initiating daily radiographic operations and actions to be employed in the event of an off scale pocket dosimeter.

Our investigation also concluded that the radiographers involved in the April 19, 1990 and May 9, 1990 occurrences, although knowledgeable of the requirements and managements position concerning safety, had elected to violate prescribed required safe practice.

The certification of the person that had functioned as the radiographer during the April 19, 1990 event has been revoked. The certification of the person that had apparently functioned as the assistant radiographer during the May 9, 1990 event has been suspended and the radiographers' employment with MQS Inspection, Inc. has been terminated. These actions precluded these persons from performing any

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activities as a radiographer or radiographer assistant while employed with this company. The suspended certification of the person involved in the May 9, 1990 event may be reactivated only after he is provided additional training, a performance evaluation is performed, and he exhibits to management an acceptable attitude towards safety. These actions serve to correct and to avoid recurrence of these violations. Additional actions that were taken to avoid further violations are detailed later in this letter. Compliance had been achieved May 16, 1990.

Violation number 5

An oversight resulted in the utilization of a person as a radiographer that had not passed our radiographer examination. We had immediately removed this person from radiographic activities as a result in his involvement in the April 19, 1990 event. The cause of the oversight leading to the violation had been apparently due to the fact that the certification approval signature was formerly required to be placed on the back side of the approval record. At a glance, the certification was not noted to be unapproved. Our actions included transmittal of a record from our corporate office to the location management listing all approved personnel certifications. Also, we have modified our certification forms to place required certification approval signatures on the front of the form to enable easier determination of approved and unapproved certifications. Full compliance had been achieved April 27, 1990.

Violation number 6

The individual allegedly had removed his personnel monitoring device(s) in an effort to conceal his radiation exposure from management. Management previously observed that he had received, during prior radiographic operations, greater than typical radiation exposures. Although the prior exposures were not above permissible regulatory level, it appeared that prudent safe practices that could minimize his exposure were not being employed by the radiographer. Management consulted the radiographer and expressed its concern, the necessity of adherence to prescribed safe practice and the consequences of failure to comply with the requirements. This individual had been immediately removed from radiographic operations. Reenactments were performed to enable calculation of his whole body and extremity exposures. The calculated radiation exposure data has been added to his radiation exposure history record. This radiographer is no longer in our employ. Full compliance had been achieved May 22, 1990. Additional actions that were taken to avoid recurrence are detailed later in this letter.

Violation number 7

The permanent radiographic installation referenced by this violation description is designed with a maze type entrance. The entrance to the maze from outside the installation had been equipped with a light activated entrance control interlock. The exposure device remote control device cable was not long enough to extend outside the maze entrance, therefore requiring the radiographer to be positioned on the wrong side of the access control during the exposure (crank out) and retract (crank in) process. We immediately moved the light access control deeper into the maze. This enabled the radiographers to be positioned on the correct side of the control system during the exposure device operation and remain outside of the high radiation area. Additionally, we have purchased and placed into use a longer exposure device remote control. Full compliance had been achieved May 2, 1990.



We have employed several additional measures in an effort to avoid further violations. These measures include:

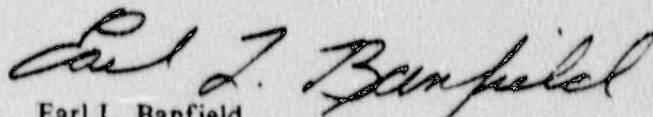
1. Temporarily increasing the frequency of personnel audits (radiographers and radiographer assistants) of personnel employed and based out of the Wilmington, DE facility.
2. Implementation of a Fitness for Duty Program (drug abatement program). This program includes pre-hire, post-accident, random, etc. drug screening as well as EAP provisions. All location management has been trained concerning the facets of this program including the observation of personnel behavior that may be indicative of drug or alcohol use.
3. Event details have been sent to all radiographic personnel and many non-radiographic personnel. Hopefully, we may benefit from the knowledge gained from these events.
4. A corporate radiation safety inspection has been performed concerning the Wilmington, DE facility activities. Our internal audit system provides for the identification of deficiencies, the implementation of effective corrective measures, it provides comprehensive information to management and it permits the tracking of deficiencies and trend analysis.
5. We have discussed the nature and the causes of these events with all of our location managers. This discussion included the methods to prevent recurrence and the reenforcement of MQS Inspection, Inc.'s commitment towards safety.
6. We hired a consultant to provide training to management regarding interpersonal skills and behavior trait identification. This training included methods to identify the desired behavioral traits, methods for reinforcement of desired behavioral traits, and the discouragement of undesirable behavioral traits.
7. MQS Inspection, Inc. continues its strong management approach regarding our safety program. This includes implementing appropriate internal enforcement measures when needed.
8. We are initiating a safety incentive program to promote safe practice.
9. We have scheduled a Supervisors meeting. A portion of this meeting will address safety issues including compliance matters, training of personnel, and identifications of hazardous or potentially hazardous situations, etc.
10. We have solicited feedback from our radiographic personnel regarding our safety program and recommendations to improve it.

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These actions in our opinion resolve the identified issues relating to the events of April 19, 1990 and May 9, 1990 and the subsequent inspections and will provide a positive impact on our program. If you have any questions, please contact me.

Very truly yours,

MQS INSPECTION, INC.



Earl L. Banfield  
Corporate Radiation Safety Officer

Enclosure

ELB/lmm:90-406

cc: A. Davis -Regional Administrator, Region III  
H. Doran  
R. Faloon  
E. L. Panfield  
All Location RSO's  
Wilmington Inspection  
Home Office Inspection  
File

NOTICE OF VIOLATION

MQS Inspection, Inc.  
Elk Grove Village, Illinois

License No. 12-00622-07  
Docket No. 030-04041  
EA 90-149

During inspections conducted on May 1 and August 23, 1990, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions", 10 CFR Part 2, Appendix C (1990) the violations are listed below:

1. License Condition No. 20 requires that the licensee conduct its program in accordance with the statements, representations, and procedures contained in the application dated October 27, 1987 (with attached manual).

The referenced manual, Radiation Safety and Control Program, 30.J.2, "Operating and Emergency Procedures," Section 6.1, requires that work be stopped immediately and the Radiation Safety Monitor/Facility Radiation Safety Officer contacted if a worker's dosimeter is saturated (off scale).

Contrary to the above, during radiographic operations on April 19, 1990, a radiographer's self-reading dosimeter was noted to be discharged off-scale and radiographic operations were not immediately stopped nor were immediate contacts made. Specifically, a radiographer's dosimeter was observed to be offscale after completing 6 or 7 radiographs and the individual continued to perform at least 8 additional exposures before stopping work and notifying the facility radiation safety officer the next day.

This is a Severity Level IV Violation (Supplement VI)

2. License Condition No. 20 requires that the licensee conduct its program in accordance with statements, representations, and procedures contained in the application dated October 27, 1987 (with attached manual).

The referenced manual, Radiation Safety and Control Program, 30.J.2, "Operating and Emergency Procedures," Section 13.1.4, requires that upon assuring that the source is in a safe position, survey and lock the exposure device. This procedure shall be conducted after each exposure.

10 CFR 34.22(a) requires that during radiographic operations, the sealed source assembly be secured in the shielded position each time the source is returned to that position.

Contrary to the above:

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- a. During radiographic operations on April 19, 1990, a radiographer retracted a 56 curie iridium-192 source into the exposure device after each of at least 14 radiographs taken that day, but did not lock the exposure device or otherwise secure the sealed source assembly in the shielded position after the sixth or seventh radiographs.
- b. During radiographic operations on May 9, 1990, a radiographer retracted a 46 curie iridium-192 source into the exposure device after each of 36 radiographs, and failed to lock or otherwise secure the sealed source assembly in the shielded position the exposure device after the 35th and 36th radiographs.

This is a Severity Level IV Violation (Supplement VI)

3. 10 CFR 34.43(b) requires that the licensee ensure a survey with a calibrated and operable radiation survey instrument is made after each exposure to determine that the sealed source has been returned to its shielded position. The entire circumference of the radiographic exposure device must be surveyed.

Contrary to the above:

- a. On April 19, 1990, a radiographer and a radiographer's assistant performed a series of at least 14 radiographic exposures and did not adequately survey the entire circumference of the radiographic exposure device after the sixth or seventh exposures to ensure the sealed source had been returned to its shielded position.
- b. On May 9, 1990, a radiographer performed approximately 36 radiographic exposures and did not adequately survey the entire circumference of the radiographic exposure device after the last two exposures to ensure the sealed source had been returned to its shielded position.

This is a Severity Level IV Violation (Supplement VI)

4. 10 CFR 34.33(a) requires that during radiographic operations, each radiographer and radiographer's assistant wear a direct reading pocket dosimeter and that the pocket dosimeter be recharged at the start of each shift.

Contrary to the above, a radiographer failed to recharge his pocket dosimeter at the start of the shift on April 19, 1990. The radiographer's pocket dosimeter registered 40 millirem prior to initiating radiographic operations that day.

This is a Severity Level IV Violation (Supplement VI)

5. 10 CFR 34 31(a)(4) requires that the licensee not permit any individual to act as a radiographer until such individual has demonstrated his understanding of the instructions provided him, by successful completion of a written test.

License Condition No. 20 requires that the licensee conduct its program in accordance with the statements, representations, and procedures contained in the application dated October 27, 1987 (with attached manual).

The referenced manual, Radiation Safety and Control Program, 30.G.3, "Personnel Certification Procedure," Sections 6.1.4 and 6.4.4, require that the prerequisite for certification as a radiographer include satisfactory completion of a written examination. A score of 80% or greater is required for successful completion of the written examination.

Contrary to this requirement, an individual acted as a radiographer on April 19, 1990 and on other prior occasions, and had not successfully completed the radiographer's written test.

This is a Severity Level IV Violation (Supplement VI)

6. 10 CFR 34.33(a) requires that the licensee not permit any individual to act as a radiographer during radiographic operations, unless the individual wears a direct-reading pocket dosimeter and either a film badge or thermoluminescent dosimeter (TLD).

Contrary to the above, the licensee permitted an individual to act as a radiographer during radiographic operations on May 9, 1990 and the individual failed to wear either a film badge or TLD.

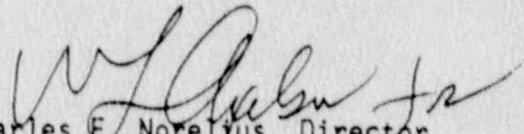
This is a Severity Level IV Violation (Supplement VI)

7. 10 CFR 34.29(b) requires that each entrance used for personnel access to a high radiation area in a permanent radiographic installation have both visible and audible warning signals to warn of the presence of radiation. The audible signal shall be actuated when an attempt is made to enter the installation while the source is exposed.

Contrary to this requirement, the audible warning signal for the licensee's permanent radiographic installation at its Wilmington, Delaware facility would not in all cases actuate if an attempt were made to enter the installation's high radiation area. Specifically, the "electric eye" associated with the installation's audible warning system provided an alarm signal only for entries made through the entrance door and not for entries by the radiographer who was already inside the maze entrance where he initiated radiographic exposures.

This is a Severity Level IV Violation (Supplement VI)

Pursuant to the provisions of 10 CFR 2.201, MQS Inspection, Inc. 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 III, U. S. Nuclear Regulatory Commission, 799 Roosevelt Road, Glen Ellyn, IL 60137, 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. If an adequate reply is not received within the time specified in this Notice, an order may be issued to show cause 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.



Charles E. Norelyus, Director  
Division of Radiation Safety and  
Safeguards

Dated at Glen Ellyn, Illinois  
this 5<sup>th</sup> day of November 1990