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Rockwell International

June 28, 1982

(89)

DOCKET NUMBER
PROPOSED RULE PR-34
(47 FR 19152)

Mr. James A. Jones
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Jones:

Subject: Comments on the 13 Questions

1. No
2. No
3. Yes - Big Brother Aspect
4. Present system rewards shoddy work.
   No penalties or after the fact remedial action.
5. Previous Work Experience
   Education
   Current Personal Training Programs
   Physical Examination with Emphasis on Eyesight and Hearing
   Written Job Examination Results in File.
6. All
7. Certificates issued valid with the current employer.
   Certificate to be reissued with the new employer.
8. Should Not
9. Yes
10. Third party is preferable, since examination or investigation requires preparation by the individual to be certified.
11. Certification should be revoked. Restored after proof of proficiency after a determined time interval (90 days) and training.

    The Radiographer can appeal his suspension with written proof of his capability.
12. It should not, since the costs are not any added features that meet minimum safety standards.

DS10
add: James Jones
5850 NL

13. Costs would vary, but should not require any additional costs as the current staff would adjust to the program.

At Rockwell International's Energy Systems Group (ESG) we train, under contract, all NRC Nondestructive Testing examiners. We would be interested in participating as third party certifiers. Enclosed is a copy of our 5-day Radiographic Safety Course outline certified by the State of California.

Thank you.

R M Micklich

R. M. Micklich
Training

RADIOGRAPHIC SAFETY COURSE OUTLINE

I. INTRODUCTION - SAFETY AS IT APPLIES TO THE RADIOGRAPHER OR RADIOGRAPHIC WORKER

II. FUNDAMENTALS OF RADIATION SAFETY

A. Structure of Atom Review

1. Basic Theory
2. Atomic Number (Z)
3. Mass Number (A)

B. Radiation and Ionization

1. Isotopes
2. Radioisotopes (sealed sources)
3. Decay - Specific Activity - Half-Life
4. X-Ray

C. Characteristics of Radiation

1. Gamma Radiation
2. X-Radiation
3. Alpha Particles
4. Beta Particles
5. Neutron Particles
6. Scatter-Photoelectric Effect-Bremsstralung
7. Penetration-Absorbtion

D. Methods of Controlling Radiation

1. Working Time
2. Working Distance (ISL)
3. Shielding (HVL)
4. Radiation Measuring Units

E. Radiological Effects

1. Radiation Effects to Various Parts of the Body System

   a. Radiosensitivity - Genetic Effects
   b. Radiation Exposure
   c. Radiation Absorbed (Dose)
   d. Laws Governing Absorbed Radiation
   e. Radiation Workers Lifespan and Mental Adjustment
   f. Films on Actual Cases

F. Monitoring and Radiation Instrumentation

1. Operating Equipment

   a. Operation
   b. Calibration and Maintenance
   c. Limitations

2. Laws, Rules, Regulations

   a. Government
   b. State
   c. Company

3. Instrument Demonstration

   a. Personal Monitoring Equipment
      (1) Badge
      (2) Dosimeter
      (3) Pocket Chambers
      (4) Survey Instruments (high and low energy types)

5. Area Monitoring Equipment
6. Practical Set Up of Radiation Areas
7. Survey Techniques
8. Remote Handling Equipment
9. Storage Containers
10. Checkout List

G. Review of Company Procedures in Detail

H. Examination

I. Final Critique and Review

Reference Material:

RADIATION SAFETY TECHNICIAN TRAINING COURSE
CALIF RADIATION CONTROL REGULATIONS TITLE 17
General Dynamics Radiation Safety Volume II
General Dynamics Origin & Nature of Radiation Volume I

STATE OF NEW YORK
DEPARTMENT OF LABOR
DIVISION OF SAFETY AND HEALTH
TWO WORLD TRADE CENTER
NEW YORK, N.Y. 10047

May 14, 1982

Address Reply to:
Radiological Health Unit

Re: Radiographer Certification

(88)

Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Mr. James Jones

Dear Mr. Jones:

We feel the present system has worked fairly well in N.Y.S. Code Rule 38, specifies the training that each radiograph and assistant radiograph must possess before he is qualified. During inspections we specifically question the radiographers on the material that he should he should have been taught. In addition at each temporary job site there must be two qualfied person-a radiographer and an assistant radiographer. Finally they are inspected more frequently that any other license category.

The present system has its drawbacks. Radiographers can come in under reciprocity and at least in the past their qualifications varied greatly. We would support a nationwide third party radiography certification program with the following features:

(1) A nationwide network of approved radiography training schools should be available. Since the schools would need to possess a radioactive material license and/or X-ray registration, a mechanism is already available for approval of schools.

(2) The schools would need to meet certain criteria as to: curriculium, instructor qualifications, hands-on experience with equipment and minimun course duration.

(3) Following successfull completion of an approved course the applicant would need to pass a test given by, for example, the Educational Testing Service. There probably would need to be several classes or categories of certificate as follows:

DS 10
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Class X: X-ray radiography only (less then 500 kVp)

Class Y: X-ray (<500 kVp) and gamma-ray radiography

Class Z: X-ray and gamma-ray radiography (no restriction on photon energy)

(4) There would need to be nationwide Radiography Examinining Board to establish Radiography Training School Criteria, approve exam questions, set passing grade, hear appeals and establish grandfather provisions (always important in certification).

(5) Finally the NRC, NRC-Agreement States, OSHA and OSHA-Agreement States would have to agree that after a certain date only certified radiographers of the appropriate class would be permitted to operate radiography equipment in their respective jurisdictions.

As noted this is not a minor undertaking. At this time I would like to nominate L. Cabasino, Senior Radiophysicist to be our representative at the Region I Meeting on June 23, 1982.

Very truly yours,

F.J. Bradley, Ph.D.
Principal Radiophysicist

FJB:ea
cc: J. Spath
L. Cabasino