NORCHEM
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October 11, 1985
RDM-45-85

Regional Licensing Section
Material Licensing Branch
Division Of Fuel Cycle & Material Safety
Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, IL 60137

Re: Training Requirements
12-13972-02

Dear Sirs:

I have enclosed the agenda of material covered by the Radiation Safety course offered by Texas Nuclear Corporation. If we have some of our personnel attend, pass the written examinations, and receive a certificate and letter of certification; would we be permitted to include them in Condition 17, by an additional amendment to our Materials License?

If you have any questions please call me at (815)942-7481.

Dale Martin
R. Dale Martin
Radiation Safety Officer

RDM: dp

cc: F. Rahimi
B. R. Goedke
J. I. Eisenhauer

Radiation Safety Course

BACKGROUND:

Several years ago, in repsonse to many requests from users of nuclear gauges, Texas Nuclear established a RADIATION SAFETY COURSE. Since that time, it has been constantly augmented and up-dated by incorporating into the curriculum additions and changes in course content suggested by our many customers who have completed the course.

The present course structure covers such topics as radiation dosimetry, radiation detection and protection, licensing and regulatory controls, gauge installation and relocation, leak testing and radiation surveys for most industrial radiation devices. Participants are instructed in general principles rather than in specific characteristics of the Texas Nuclear equipment. At the completion of this course, each participant is awarded a certificate and letter certifying the nature of the training. Texas Nuclear will offer assistance in obtaining a specific license from the Nuclear Regulatory Commission or the particular Agreement State.

The Course material is presented as outlined on the agenda in Austin, Texas. The time is well used, as participants are given heavy evening assignments as well as written examinations.

Tuition for the course is ~~$600~~ 650 per person. This fee includes all necessary course and reference materials. Luncheon on each of the four days is also included in the tuition.

Texas Nuclear Corporation

Health Physics

As contributors to Radiation Research and as suppliers of industrial nuclear gauges and custom instrumentation, TN personnel have developed a technical capability, specialized techniques and instrumentation for Health Physics applications.

Tracer studies, using selected radioactive isotopes to solve industrial problems such as flow rate and patterns, leak detection, mixing efficiency, process tracing, dispersion of pollutants, and subsurface tracing of fluids can be carried out.

The Health Physics Group provides specialized assistance to users of radioactive materials and radiation producing devices. A list of the services presently available is:

- Training courses on radiation safety
- Aid in establishing in-house radiation safety programs
- Licensing and regulation compliance assistance
- Facility shielding and design consultation
- Radiation surveys around plant facilities
- Leak testing of radioactive sources
- Radioactive waste disposal service
- Tracer Studies

The Health Physics group maintains sophisticated capabilities for our in-house Radiological Safety program. This expertise is offered to our clients to solve, imaginatively, advanced problems in Health Physics Research and to design safety programs for their special needs.

RADIATION SAFETY

The Agenda

MONDAY—Beginning 4:00 p.m.

1. Introduction
   a. Contents and Purpose of Course
   b. Review Agenda
2. Review of Preparation Material
3. Reading Assignment

TUESDAY

1. Atomic Structure
   a. Nomenclature
   b. Periodic Table

Coffee Break

2. Radioactive Materials
   a. Isotopes
   b. Decay
   c. Half-life
3. Types of Radiation

Lunch

4. Radiation Interaction with Matter
   a. Ionizing Radiation
      1. Electromagnetic
      2. Charged particle
      3. Neutron
   b. Specific Ionization

Coffee Break

5. Radiation Dosimetry
   a. Definitions and Units of Dose
   b. Quality Factor

Review

HAPPY HOUR

WEDNESDAY

Question and Answer Session

1. Radiation Dosimetry (Continued)
   a. Gamma Exposure Rate
   b. Neutron Exposure Rate

Coffee Break

   c. Biological Effects
   d. Dose Limits
   e. Radiation Protection Guides

Lunch

Radiation Detection
1. Detection Instruments
   a. Basic Operation
   b. Survey Meters
2. Personnel Dosimetry
3. Distance, Time, Shielding
   a. Inverse Square Law
   b. Half-Value Layer

Coffee Break

Discussion and Review

Homework Assignment

Read Part I of Manual of Standards and Procedures
Complete Study Quiz I

THURSDAY

Question and Answer Session

1. Preparation for Laboratory
   a. Form Review
   b. Team Assignment
   c. Surveying and Leak Testing Demonstration

Travel to Texas Nuclear

2. Laboratory Work at Texas Nuclear Corporation
   a. Check-out and re-briefing on use of portable radiation survey meters
   b. Survey Density, Level or Belt Weigh Scales
   c. Leak Test Devices Using QT/1S Procedure
      1. Count Swabs
      2. Prepare Leak Test Certificates

Lunch

3. Working Definitions
   a. Radiation Areas and Posting
   b. Installation
   c. Surveying
   d. Leak Testing
   e. Shipping and Labeling

Coffee Break

4. Regulatory Control
   a. Title 10 Code of Federal Regulations
   b. Agreement States
   c. Licensing Procedures
   d. Purpose of Licensing
   e. User Responsibility

Homework Assignment

Read Part II of Manual of Standards and Procedures
Complete Study Quiz II
Review Material for Exam

FRIDAY

Question and Answer Session

1. Summary of Topics
   a. Role of Radiation Safety Personnel
   b. Class Discussion

Written Test on Lectures and Homework Assignments

2. Class Discussion on Remaining Questions

Lunch

ADJOURNMENT—1:00 P.M.