

- Foundation Investigations
- Soil & Rock Engineering
- Groundwater Hydrology
- Subsurface Exploration
- Construction Observation

**JOHN MATHES  
& ASSOCIATES, INC.**

**ENGINEERING CONSULTANTS IN THE APPLIED EARTH SCIENCES**

Applicant: 5767  
Check no. 440/34  
Amount, Fee Category  
Type of Fee: Amendment  
Date Check Rec'd. 3/12/82  
Received By: Brown

030-14139

February 10, 1982

2/25/82 REG  
Feb 18 1982  
Brown  
3/15/82

U.S. Nuclear Regulatory Commission  
Material Licensing Section  
799 Roosevelt Road  
Glen Ellyn, Illinois 60137

Gentlemen:

John Mathes & Associates, Inc., is currently expanding both the scope and geographical limits of its services. In keeping with these expansion plans, we would like to make certain modifications in our nuclear materials license. Our license number is 12-18760-01. The license expiration date is April 30, 1985.

The remainder of this letter will deal with the changes we wish to make and the procedures we will use to effect the changes. These changes have already been discussed verbally with Ms. B. J. Holt of your organization on February 10, 1982.

Desired License Modifications

- I. Authorized Locations For Gauge Use - Our present license authorizes our use of nuclear materials in the states of Missouri and Illinois. In keeping with our expansion plans, we would like to modify our materials license to read as follows: Licensed material will be used at 123 Wedgewood Drive, Columbia, Illinois and at temporary job sites anywhere NRC maintains jurisdiction.
- II. Licensed Material - John Mathes & Associates, Inc., is currently authorized to use Campbell Pacific Nuclear MC series moisture-density gauges and their corresponding Cesium 137 and Americium 241/Be sources. In keeping with our expansion plans, we would like to modify our license to include the below listed nuclear gauges.

These new gauges will be used for the same purposes as listed in our present license. They will also be used in accordance with all procedures, safety regulations, etc., that are listed in our present license.

Our firm will also comply with any additional safety regulations the NRC feels is necessary in the use of the down hole gauges. All licensed operators from our firm will attend a manufacturer's training course in the use of the down hole gauges before they are authorized to use them.

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CONTROL NO. 05939

Proposed Additions To Licensed Material

Element And Mass No.	Chemical And/Or Physical Form	Name of Mfgr. And Model No. (If Sealed Source)	Max. No. Of Millicuries And/Or Sealed Sources And Maximum Activity Per Source Which Will Be Pos- sessed At Any One Time
A	B	C	D
Cesium 137	Sealed Source Troxler Drawing A102112	Troxler Electronics Model #1351	Not to exceed 9 mc/ source ea. gauge. Not to exceed 2 gauges.
Cesium 137	Sealed Source Troxler Drawing A102112	Troxler Electronics Model #1352	Not to exceed 9 mc/ source ea. gauge. Not to exceed 2 gauges.
Cesium 137	Sealed Source Troxler Drawing A102112	Troxler Electronics Series 3400	Not to exceed 9 mc/ source ea. gauge. Not to exceed 4 gauges.
Americium 241/Be	Sealed Source Troxler Drawing 102451	Troxler Electronics Series 3400	Not to exceed 40 mc/ source ea. gauge. Not to exceed 4 gauges.
Cesium 137	Sealed Source CPN-131	Campbell Pacific Nuclear 500 Series Soil Gauge	Not to exceed 10 mc/ source ea. gauge. Not to exceed 2 gauges.
Americium 241/Be	Sealed Source CPN-131	Campbell Pacific Nuclear 500 Series Soil Gauge	Not to exceed 50 mc/ source ea. gauge. Not to exceed 2 gauges.

CONTROL NO. 05939

III. Individuals who will use or directly supervise the use of licensed material. - The modifications we wish to make to this part of our license are in two parts. The two modifications and explanations of the purpose of and procedures used to effect the modifications are listed below:

A: Additions to Item 6 (individuals who will use or directly supervise the use of licensed material).

John Mathes & Associates, Inc., would like to include the names of two new individuals, Mr. Mark Conder and Mr. T. Michael McMillen in this category of our license. A resume of each person's training and experience is included with this letter.

B: John Mathes & Associates, Inc., would like to start a training program in which it could certify its own technicians for nuclear moisture/density gauge use. We propose to train the individuals in the following manner:

1. Formal Training: Technicians must first attend and successfully complete one manufacturer's training course for the type of gauge they will be authorized to use, either down hole or surface moisture density.
2. On the Job Training: After completing the above course, each individual technician will go out on projects with the Radiation Safety Officer from our firm. The RSO will demonstrate all basic handling procedures and safety considerations pertinent to the appropriate gauges use. The RSO and trainee will spend no less than 8.0 hours on this type of training. Then the trainee will spend no less than 8.0 hours actually using the gauge in job situations. The RSO will closely observe the technicians use and handling of the gauge during this period and instruct the technician as to any incorrect use of the gauge. At the end of these two on the job training sessions, the technicians will demonstrate the correct handling of the gauge to the RSO. The demonstration will include actual physical measurements of the moisture and density of various construction materials, physical observance of all safety regulations covered in the formal training course and our materials license, and a demonstration of the various procedures to be used when an emergency such as gauge or source damage or theft occurs.

If the RSO observes that the technician cannot complete all the above demonstrations exactly correctly, the on the job training will be repeated. Once the technician has successfully completed the above demonstrations, John Mathes & Associates, Inc., will allow them to use nuclear gauges without direct supervision by a licensed operator.

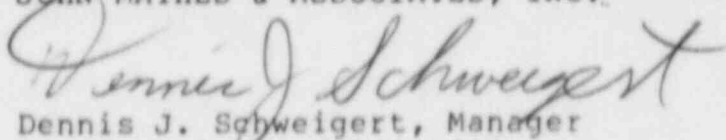
We are asking for this license modification because of the long period of time it actually takes to get a technician licensed with the NRC. We have been advised that it might take as long as two to three months to get approval for a new person to be added to our list of licensed technicians. This poses an extreme monetary and scheduling hardship for us as we have to keep a licensed technician with the new technicians when they are using nuclear materials even though the new technicians are adequately trained to handle the gauges on their own.

The RSO for John Mathes & Associates, Inc., will always be the person responsible for technician training and authorizing gauge use. The RSO will keep files on all technicians. The files will include certificates of completion for the manufacturer's training course(s) and records of successful completion of John Mathes & Associates, Inc., in-house training.

If you have any questions concerning the contents of this letter, please feel free to contact me.

Sincerely,

JOHN MATHES & ASSOCIATES, INC.

  
Dennis J. Schweigert, Manager  
Construction and Materials  
Testing Services

DJS/mb

Attachments

CONTROL NO. 05939

Resume of Training  
And Experience  
For  
T. Michael McMillen

Mr. McMillen successfully completed one eight hour formal course entitled, "Basic Training Course on Radiation Safety and Use of Nuclear Soil Gauges," given by a representative of Campbell Pacific Nuclear Corporation. Mr. McMillen has had 3 years experience with the use and operation of Seaman Nuclear Gauges for both surface moisture and density determination and depth density determination. Applications were in the measurement of coal and soil construction materials.

NOTE: Mr. McMillen will follow the instructions of the manufacturer and applicable NRC regulations when using the nuclear materials for which we are licensed.

Resume of Training  
And Experience  
For  
Mark Conder

Mr. Conder successfully completed one eight hour formal course entitled, "Basic Training Course on Radiation Safety and Use of Nuclear Soil Gauges," given by a representative of Campbell Pacific Nuclear Corporation. Mr. Conder also has 1.5 years on the job experience using a Seaman Model C75 Nuclear Moisture Density Meter and 1.5 years on the job experience using a Campbell Pacific Nuclear Model MC-2 Moisture Density Meter.

NOTE: Mr. Conder will follow the instructions of the manufacturer and applicable NRC regulations when using the nuclear materials for which we are licensed.

CONTROL NO. 05939