

**EASTERN MAINE MEDICAL CENTER**  
489 STATE STREET BANGOR, MAINE 04401-6674  
TEL. (207) 947-3711

April 3, 1985  
License # 18-01577-01

U. S. Nuclear Regulatory Commission  
Attention: John Glenn, Ph.D.  
631 Park Avenue  
King of Prussia, PA 19406

We have a new on-site physicist who we would like to assume the position of Radiation Safety Officer. Dr. Szal has been acting in the RSO capacity since our last physicist left this institution.

I have enclosed a copy of Larry Alquist's training and experience and resume for your review.

Sincerely,

*Gayle Thompson*

Gayle Thompson, CNMT  
Supervisor, Nuclear Medicine

GT/rm  
Enclosure

4/19/85  
April 8 I  
Brown  
Orig. To  
Action Compl. 6/13/85

Applicant.....  
Check No. 20689.....  
Amount/Fee Category \$120.70  
Type of Fee. Amendment  
Date Check Rec'd. 6/13/85  
Received By. J. Alquist

8508050551 850712  
REC1 LIC30  
18-01577-01 PDR

"OFFICIAL RECORD COPY"

03641

ML10

APR 09 1985

TRAINING AND EXPERIENCE  
AUTHORIZED USER OR RADIATION SAFETY OFFICER

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER

Larry Aquist

2. STATE OR TERRITORY IN  
WHICH LICENSED TO  
PRACTICE MEDICINE

## 3. CERTIFICATION

SPECIALTY BOARD  
ACATEGORY  
BMONTH AND YEAR CERTIFIED  
C

## 4. TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES

FIELD OF TRAINING A	LOCATION AND DATE(S) OF TRAINING B	TYPE AND LENGTH OF TRAINING	
		LECTURE/ LABORATORY COURSES (Hours) C	SUPERVISED LABORATORY EXPERIENCE (Hours) D
a. RADIATION PHYSICS AND INSTRUMENTATION	Iowa State University	10	
b. RADIATION PROTECTION	Battelle Northwest Laboratories		5
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY	Iowa State University	10	
d. RADIATION BIOLOGY	Rice Island Hospital		10
e. RADIOPHARMACEUTICAL CHEMISTRY			

## 5. EXPERIENCE WITH RADIATION. (Actual use of Radioisotopes or Equivalent Experience)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
$^{90}\text{Sr}$ , $^{147}\text{Sm}$ $^{232}\text{Th}$ , $^{238}\text{Pu}$	5.20 mCi	Iowa State University	1972-1975	Series sources for calibration of solid state detectors.
$^{242}\text{Cf}$ , $^{241}\text{Am}$ , $^{243}\text{Am}$ $^{244}\text{Pu}$ , $^{242}\text{Pu}$ $^{241}\text{Pu}$	5.20 mCi	Battelle Northwest Laboratories Richland, Washington	1975-1978	Produced by mass separator for research. $^{242}\text{Cf}$ used for calibration of neutron detector.
$^{234}\text{Th}$ , $^{234\text{m}}\text{Pa}$ $^{238}\text{Pu}$	5.20 mCi	University of Guelph, Wisconsin	1978-1981	Produced by mass separator for research.

## RESUME

Larry Alquist

31 Spruce Street  
Bangor, Maine 04401  
Phone: 207-942-7474

Department of Radiation Oncology  
Eastern Maine Medical Center  
Bangor, Maine 04401  
Phone: 207-947-3711

### Personal data:

Date of birth: 24-March-1949; married; 177 cm; 68 kg

### Education:

Ph.D. degree, May 1975. Iowa State University, Ames, Iowa.  
Major: Nuclear Physics. G.P.A.: 3.92/4.00.  
Doctoral Thesis: Development of a multi-detector angular correlation apparatus for on-line measurements to determine quantum mechanical properties of levels in  $^{90}\text{Sr}$  and  $^{140}\text{Ba}$ .

B.A. degree, June 1971. Carleton College, Northfield, Minnesota.  
Major: physics. G.P.A.: 2.34/3.00.

### Computer language experience:

FORTRAN IV, FOCAL, BASIC, TECO, and PAL8 assembly language.  
... revised PAL8 pulse height analysis program.  
... developed TECO macro programs for graphics and word processing.  
... implemented treatment planning software on VAX 11/750.

### Work experience:

- a. **Department of Radiation Oncology**, Rhode Island Hospital.  
June 1982 to March 1985. Physicist responsible for developing and implementing treatment planning software on the **VAX 11/750**.
- b. **Institut Laue-Langevin**, Grenoble, France. April 1980 to April 1981.  
Physicist **co-responsible** for **OSTIS** mass separator.  
... calculations of neutron-gamma angular correlations.
- c. **Alexander von Humboldt Fellow**, University of Giessen, West Germany. January 1978 to March 1980.  
... alpha-recoil TOF and alpha-gamma spectroscopy of  $^{212}\text{Po}$  (GSI, Darmstadt).  
... angular correlation studies on  $^{92,94,96}\text{Sr}$  (ILL, Grenoble).
- d. **Battelle Northwest Laboratories**. August 1975 to September 1977. Associate research physicist.  
... delayed-neutron studies of fission-product nuclei of  $^{235}\text{U}$ .

### Interests and hobbies:

Jogging, bike-hiking, classical guitar.

## PUBLICATIONS

### Refereed Physics Journals

1. "On-line gamma-gamma angular correlations of transitions in  $^{140}\text{Ba}$ ." L.J. Alquist, W.C. Schick, Jr., W.L. Talbert, Jr., and S.A. Williams, Phys. Rev. C 13, 1277 (1976).
2. "Separation of alkaline earth from alkali metal fission products in the SOLAR on-line mass spectrometer." Paul L. Reeder, Larry J. Alquist, Jung Lin, and James F. Wright, Nucl. Instrum. Methods 133, 501 (1976).
3. "Average neutron energies from separated delayed-neutron precursors." P.L. Reeder, J.F. Wright, and L.J. Alquist, Phys. Rev. C 13, 6 (1977).
4. "Delayed neutron emission probabilities of separated isotopes of Br, Rb, I, and Cs." P.L. Reeder, J.F. Wright, and L.J. Alquist, Phys. Rev. C 15, 6 (1977).
5. "Gamma-gamma angular correlations of transitions in  $^{94}\text{Sr}$  and  $^{96}\text{Sr}$ ." G. Jung, B. Pfeiffer, L.J. Alquist, H. Wollnik, P. Hungerford, S.M. Scott and W.D. Hamilton, Phys. Rev. C 22, 252-263 (1980).
6. "Gamma-gamma angular correlations of transitions in  $^{92}\text{Sr}$ ." L.J. Alquist, G. Jung, H. Wollnik, P. Hungerford, S.M. Scott and W.D. Hamilton, Nucl. Phys. A338, 1-12 (1980).
7. "Energy spectra of delayed neutrons from separated precursors -  $^{93,94,95}\text{Rb}$ ,  $^{143}\text{Cs}$ ." P.L. Reeder, L.J. Alquist, R.L. Kiefer, F.H. Ruddy, and R.A. Warner, Nucl. Sci. and Eng., Vol. 75, 140-150 (1980).
8. "Studies on Low Yrast States in  $^{212}\text{mPo}$ ." P. Lemmertz, L.J. Alquist, R. Fass, H. Wollnik, D. Hirdes, H. Jungclas, R. Brandt, D. Schardt, and J. Zylicz, Z. Physik A298, 311-314 (1980).
9. "The level structure of  $^{96}\text{Y}$  from the decay of  $^{96}\text{Sr}$ ." G. Jung, B. Pfeiffer, P. Hungerford, S.M. Scott, F. Schussler, E. Monnard, J.A. Pinston, L.J. Alquist, H. Wollnik, and W.D. Hamilton, Nucl. Phys. A352, 1-12 (1981).

10. "Decay of  $^{90}\text{Rb}^g$  and  $^{90}\text{Rb}^m$ ." W.L. Talbert, Jr., F.K. Wohn, L.J. Alquist, and C.L. Duke, submitted to Phys. Rev. C.
11. "On-line mass determination of alpha-active products from the reaction of  $\text{natU} + ^{208}\text{Pb}$  with a gas jet time-of-flight mass spectrometer." R. Fass, P. Lemmertz, L.J. Alquist, H. Wollnik, D. Hirdes, and H. Jungclas, Nucl. Instrum. Methods 206, 317 (1983).
12. "Evaluation of Port Film Contrast Enhancement." L.E. Reinstein, L. Alquist, M. Durham, B. Lagueux, A.S. Glicksman. (in preparation)
13. "Evaluation of Film Screen Systems for 10 MeV Radiotherapy Portal Films." L.E. Reinstein, B.J. Lagueux, L. Alquist, H.I. Amols, M. Durham, A.S. Glicksman. (in preparation)

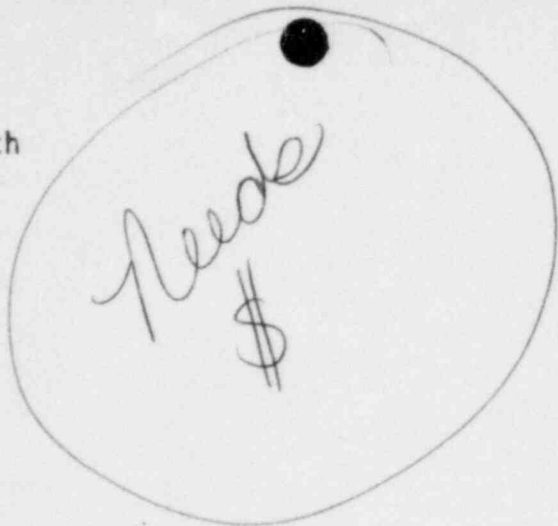
## Technical Reports

1. "Calculational methods for obtaining delayed neutron emission probabilities from SOLAR experiments." Larry J. Alquist, J.F. Wright, P.L. Reeder, report no. BNWL-SA-5900 SUP, Battelle Northwest Laboratories (1976).
2. "A Test of a Delayed-Neutron Recoil TOF Spectrometer at the OSTIS Mass Separator." Larry Alquist, Bernd Pfeiffer, ILL report no. 79AL18T, Grenoble, France (1979).
3. "GGDIS, AFIT and ELLPS: Directional correlation computer programs." L.J. Alquist and G. Jung, ILL report no. 79AL39S, Grenoble, France (1979).
4. "Tests of an apparatus for determining delayed-neutron energies from the TOF of recoiling ions." L.J. Alquist, ILL internal technical report 80AL21T, Grenoble, France (1980).
5. "DIABLO 1620 Graphics: Programs 'DIAPLT.FOR' and 'LJA.TEC'.", II. Physikalisches Institut, Universität Justus Liebig, Giessen, West Germany, February 1980.



BETWEEN: William O. Miller, Chief  
License Fee Management Branch  
Office of Administration

John E. Glenn, Chief  
Nuclear Materials Section B  
Division of Engineering and  
Technical Programs



LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED

Applicant/Licensee: Eastern Maine Medical Center

Application Dated: 4/3/85

Control No.: 03641

License No.: 18-01577-01

2. FEE ATTACHED

Amount: 0

Check No.: 0

3. COMMENTS

Signed Brenda Platchek

Date 4/10/85

02120

5/89 ✓

B. LICENSE FEE MANAGEMENT BRANCH

1. Fee Category and Amount: 7C - \$1,20

2. Correct Fee Paid. Application may be processed for:

Amendment ✓

Renewal \_\_\_\_\_

License \_\_\_\_\_

Signed G Jackson

Date 6/13/85



EASTERN MAINE MEDICAL CENTER

489 STATE ST. BANGOR, MAINE 04401

20689

NUMBER

MAY 15, 1985

DATE

020689

PAY TO THE  
ORDER OF

U. S. NUCLEAR REGULATORY COMM

\$120.00

THE MERRILL TRUST COMPANY  
BANGOR, MAINE



⑈020689⑈ ⑆011200365⑆ 100 144 2⑈

"SECTION COPY"